TCEQ Interoffice Memorandum

TO: Office of the Chief Clerk
Texas Commission on Environmental Quality

THRU: Chris Kozlowski, Team Leader
Water Rights Permitting Team

FROM: Jenna Rollins, Project Manager
Water Rights Permitting Team

DATE: August 25, 2022

SUBJECT: Northeast Texas Municipal Water District
ADJ 4590
CN601368368, RN103186771
Application No. 04-4590C to Amend Certificate of Adjudication No. 04-4590
Texas Water Code §§ 11.042, 11.122, Requiring Limited Mailed Notice
Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin
Marion County

The application and partial fees were received on June 22, 2022. Additional fees were received on August 17, 2022. The application was declared administratively complete and accepted for filing with the Office of the Chief Clerk on August 25, 2022. Mailed notice to the downstream water right holders of record in the Cypress Creek Basin is required pursuant to Title 30 Texas Administrative Code (TAC) § 295.161(a), and mailed notice to the Texas Parks and Wildlife Department and the Office of Public Interest Council is required pursuant to Title 30 TAC § 295.161(c).

All fees have been paid and the application is sufficient for filing.

Jenna Rollins

Jenna Rollins, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section

OCC Mailed Notice Required ☑ **YES** ☐ **NO**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 25, 2022

Mr. Brian Sledge **VIA E-MAIL**
Sledge Law Group, PLLC
919 Congress Avenue, Suite 460
Austin, Texas 78701

RE: Northeast Texas Municipal Water District
ADJ 4590
CN601368368, RN103186771
Application No. 04-4590C to Amend Certificate of Adjudication No. 04-4590
Texas Water Code §§ 11.042, 11.122, Requiring Limited Mailed Notice
Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin
Marion County

Dear Mr. Sledge:

This acknowledges receipt, on August 17, 2022, of additional fees in the amount of $12.22 (Receipt No. M220396, copy attached).

The application was declared administratively complete and filed with the Office of the Chief Clerk on August 25, 2022. Staff will continue processing the application for consideration by the Executive Director.

Please be advised that additional information may be requested during the technical review phase of the application process.

If you have any questions concerning the application, please contact me via email at jenna.rollins@tceq.texas.gov or by phone at 512-239-1845.

Sincerely,

Jenna Rollins

Jenna Rollins, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section

Attachment

TCEQ 17-AUG-22 03:47 PM

TCEQ - A/R RECEIPT REPORT BY ACCOUNT NUMBER

Fee Description	Fee Code / Account# / Account Name	Ref#1 / Ref#2 / Paid In By	Check Number / Card Auth. / User Data	CC Type / Tran Code / Rec Code	Slip Key / Document#	Tran Date	Tran Amount
NOTICE FEES-WUP-WATER USE PERM	PTGU	M220396	2594		BS00096857	17-AUG-22	-$12.22
	PTGU	ADJ4590	081722	N	D2803295		
	NOTICE FEES WUP WATER USE PERMITS	SLEDGEWAY GROUP PLLC	VHERNAND	CK			
					Total (Fee Code):		-$12.22

RECEIVED
AUG 19 2022
Water Availability Division

Jenna Rollins

From:	Brian Sledge [redacted]
Sent:	Wednesday, August 10, 2022 3:16 PM
To:	Jenna Rollins
Cc:	Cathy Daniel
Subject:	RE: Northeast Texas Municipal Water District, 04-4590C

Hi Jenna –

Thanks for your letter. We thought we had identified all of the fees for this project with y'all's water rights team, but we will get a check in the mail to you for this remaining $12.22.

Please let me know if you have other questions on this application.

Kind regards,
Brian

--
Brian L. Sledge
SledgeLaw Group, PLLC
Attorneys at Law · Governmental Relations
919 Congress Ave. Ste. 460, Austin, Texas 78701
512.579.3600 main
512.579.3601 direct
512.579.3611 fax
512.773.8967 mobile
[redacted]

From: Jenna Rollins [mailto:Jenna.Rollins@tceq.texas.gov]
Sent: Tuesday, August 9, 2022 11:13 AM
To:[redacted]
Subject: Northeast Texas Municipal Water District, 04-4590C

Dear Mr. Sledge,

Please see the attached request for information letter for the Northeast Texas Municipal Water District application No. 04-4590C.

Best regards,
Jenna Rollins, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section
512-239-1845

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 9, 2022

Mr. Brian Sledge
Sledge Law Group, PLLC
919 Congress Avenue, Suite 460
Austin, Texas 78701

VIA-EMAIL

RE: Northeast Texas Municipal Water District
ADJ 4590
CN601368368, RN103186771
Application No. 04-4590C to Amend Certificate of Adjudication No. 04-4590
Texas Water Code §§ 11.042, 11.122, Requiring Limited Mailed Notice
Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin
Marion County

Dear Mr. Sledge:

This acknowledges receipt, on June 22, 2022, of the referenced application and fees in the amount of $112.50 (Receipt No. M218597, copy attached).

Additional fees are required before the application can be declared administratively complete.

Remit fees in the amount of **$12.22** as described below. Please make checks payable to the TCEQ or Texas Commission on Environmental Quality.

Filing Fee (Amendment)	$ 100.00
Recording Fee	$ 12.50
Notice Fee ($0.94 x 13 downstream water right holders)	$ 12.22
TOTAL FEES	$ 124.72
FEES RECEIVED	$ 112.50
BALANCE DUE	$ 12.22

Please provide the requested fees by September 8, 2022 or the application may be returned pursuant to 30 Texas Administrative Code § 281.18.

If you have any questions concerning this matter, please contact me via email at jenna.rollins@tceq.texas.gov or by telephone at (512) 239-1845.

Sincerely,

Jenna Rollins

Jenna Rollins, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section

Attachment

TCEQ 24-JUN-22 11:47 AM

TCEQ - A/R RECEIPT REPORT BY ACCOUNT NUMBER

Fee Description	Fee Code Account# Account Name	Ref#1 Ref#2 Paid In By	Check Number Card Auth. User Data	CC Type Tran Code Rec Code	Slip Key Document#	Tran Date	Tran Amount
WTR USE PERMITS	WUP	M218597	2581		BS00095700	24-JUN-22	-$112.50
	WUP		062422	N	D2802956		
	WATER USE PERMITS	SLEDGELAW GROUP PLLC	RHDAVIS	CK			
	WUP	M218598	10450		BS00095700	24-JUN-22	-$100.00
	WUP	ADJ141573	062422	N	D2802956		
	WATER USE PERMITS	MURR, DOROTHY	RHDAVIS	CK			
	WUP	M218599	10451		BS00095700	24-JUN-22	-$100.00
	WUP	ADJ141599	062422	N	D2802956		
	WATER USE PERMITS	MURR, DOROTHY	RHDAVIS	CK			

Total (Fee Code): -$312.50

Grand Total: -$12,543.75

RECEIVED
JUN 27 2022
Water Availability Division

Northeast Texas Municipal Water District

Application for a Bed and Banks Authorization on the Big Cypress Creek Basin

SLEDGELAW GROUP PLLC 919 Congress Ave., Suite 460, Austin, Texas 78701 • Ph: 512-579-3600 • www.sledgelaw.com

June 22, 2022

Brooke McGregor, MC 160
TCEQ Water Availability Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

RE: Application for a Bed and Banks Authorization on the Big Cypress Creek Basin

Dear Brooke:

Enclosed please find an original application to amend Certificate of Adjudication No. 04-4590 to add an authorization to use the bed and banks of Dragoo Creek, Tankersley Creek and Cypress Creek to transport water released from an off-channel storage pond to Lake O' the Pines. Also included is a check for $112.50 to cover filing fees. A copy of this application is being sent via email for your use.

I look forward to working with you and TCEQ staff on this matter. If you have any questions, please feel free to contact me or Michelle Smith (512-589-8793 or [redacted]

Sincerely,

Brian Sledge

cc: Walt Sears, NETMWD
Sid Stroud, Luminant
Tony Smith, Carollo Engineering
Michelle Smith, SledgeLaw Group

Attachments

1. Application to Amend COA 04-4590 to add a bed and banks authorization
2. NETMWD Signatory Authority
3. Technical Information Report
4. Maps
    a. Maps Showing Project Details
    b. USGS Map of Discharge
5. Water Availability Analysis Information
    a. 2019 Tankersley Creek Study
        i. Appendices
        ii. TM1 WAM Data
    b. 2021 Update to Water Availability Analysis
        i. Attachment 1 WAM Files
        ii. Attachment 2 Flood Mapping
6. Development Agreement for access to storage ponds
7. Water Quality Information
    a. Water Quality Sampling Summary
    b. Existing TPDES Permit No. WQ0002697000 for the Monticello Lignite Mining Area
8. NETMWD Water Conservation and Drought Contingency Plans
    a. Water Conservation Plan
    b. Drought Contingency Plan
9. COA 04-4590

Table of Contents

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TCEQ WATER RIGHTS PERMITTING APPLICATION

ADMINISTRATIVE INFORMATION CHECKLIST

Complete and submit this checklist for each application. See Instructions Page. 5.

APPLICANT(S): Northeast Texas Municipal Water District

Indicate whether the following items are included in your application by writing either Y (for yes) or N (for no) next to each item (all items are not required for every application).

RECEIVED
JUN 22 2022
Water Availability Division

Y/N	
Yes	**Administrative Information Report**
NA	Additional Co-Applicant Information
NA	Additional Co-Applicant Signature Pages
Yes	Written Evidence of Signature Authority
Yes	**Technical Information Report**
Yes	USGS Map (or equivalent)
Yes	Map Showing Project Details
NA	Original Photographs
Yes	Water Availability Analysis
Yes	**Worksheet 1.0**
NA	Recorded Deeds for Irrigated Land
NA	Consent For Irrigation Land
NA	**Worksheet 1.1**
NA	Addendum to Worksheet 1.1
NA	**Worksheet 1.2**
NA	Additional W.S 2.0 for Each Reservoir
NA	Dam Safety Documents
NA	Notice(s) to Governing Bodies
NA	Recorded Deeds for Inundated Land
NA	Consent For Inundation Land

Y/N	
Yes	**Worksheet 3.0**
NA	Additional W.S 3.0 for each Point
NA	Recorded Deeds for Diversion Points
NA	Consent For Diversion Access
Yes	**Worksheet 4.0**
NA	TPDES Permit(s)
NA	WWTP Discharge Data
NA	Groundwater Well Permit
NA	Signed Water Supply Contract
Yes	**Worksheet 4.1**
Yes	**Worksheet 5.0**
Yes	Addendum to Worksheet 5.0
Yes	**Worksheet 6.0**
Yes	Water Conservation Plan(s)
Yes	Drought Contingency Plan(s)
Yes	Documentation of Adoption
NA	**Worksheet 7.0**
NA	Accounting Plan
Yes	**Worksheet 8.0**
Yes	Fees

ADMINISTRATIVE INFORMATION REPORT

The following information **is required** for **all** new applications and amendments.

*******Applicants are strongly encouraged to schedule a pre-application meeting with TCEQ Staff to discuss Applicant's needs prior to submitting an application. Call the Water Rights Permitting Team to schedule a meeting at* (512) 239-4600.**

1. TYPE OF APPLICATION (Instructions, Page. 6)

Indicate, by marking X, next to the following authorizations you are seeking.

_____New Appropriation of State Water

_____Amendment to a Water Right *

__X__Bed and Banks

If you are seeking an amendment to an existing water rights authorization, you must be the owner of record of the authorization. If the name of the Applicant in Section 2, does not match the name of the current owner(s) of record for the permit or certificate or if any of the co-owners is not included as an applicant in this amendment request, your application could be returned. If you or a co-applicant are a new owner, but ownership is not reflected in the records of the TCEQ, submit a change of ownership request (Form TCEQ-10204) prior to submitting the application for an amendment. See Instructions page. 6. Please note that an amendment application may be returned, and the Applicant may resubmit once the change of ownership is complete.

Please summarize the authorizations or amendments you are seeking in the space below or attach a narrative description entitled "Summary of Request."

NETMWD seeks to amend its existing water right in Lake O' the Pines (COA 04-4590) to add an authorization to use the bed and banks of Dragoo Creek, Tankersley Creek and Big Cypress Creek to transport up to 6,469.5 acre-feet of water released from an off-channel storage pond to Lake O' the Pines. This transportation amount represents the storage capacity of the off-channel storage pond (6,810 acre-feet) reduced by an assumed 5% to account for channel losses. The off-channel storage pond from which water will be discharged (identified on the attached maps as the "GR-20 Pond") is located on the Monticello Winfield South Mine property near Winfield, Texas, is currently owned by Luminant Generation Company, LLC and Luminant Mining Company, LLC (collectively, "Luminant"), and is subject to the reclamation requirements of the Railroad Commission of Texas. Once reclamation is complete, the GR-20 Pond will have a storage capacity of approximately 6,810 acre-feet of water. Pursuant to a Development Agreement executed in 2021 (attached), Luminant will grant NETMWD an Access and Inundation Easement and a Water Storage Agreement authorizing NETMWD to utilize the GR-20 Pond and associated ponds and facilities for water storage and discharge into Dragoo Creek. Water transported from the GR-20 Pond to Lake O' the Pines will be utilized to firm up existing water uses authorized in COA 04-4590 without increasing diversion amounts or rates. Additionally, such water discharged into Dragoo Creek will provide enhanced streamflow within the Cypress Creek Basin to support instream riparian habitat.

2. APPLICANT INFORMATION (Instructions, Page. 6)

a. Applicant

Indicate the number of Applicants/Co-Applicants 1
(Include a copy of this section for each Co-Applicant, if any)

What is the Full Legal Name of the individual or entity (applicant) applying for this permit?

Northeast Texas Municipal Water District

(If the Applicant is an entity, the legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

CN : CN601368368 (leave blank if you do not yet have a CN).

What is the name and title of the person or persons signing the application? Unless an application is signed by an individual applicant, the person or persons must submit written evidence that they meet the signatory requirements in *30 TAC § 295.14*.

First/Last Name: Walt Sears

Title: Executive Director and General Manager

Have you provided written evidence meeting the signatory requirements in 30 TAC § 295.14, as an attachment to this application? **Y/N** Yes

What is the applicant's mailing address as recognized by the US Postal Service (USPS)? You may verify the address on the USPS website at https://tools.usps.com/go/ZipLookupAction!input.action.

Name: Walt Sears

Mailing Address: P.O. Box 955

City: Hughes Springs State: Texas ZIP Code: 75656

Indicate an X next to the type of Applicant:

___Individual	___Sole Proprietorship-D.B.A.
___Partnership	___Corporation
___Trust	___Estate
___Federal Government	___State Government
___County Government	___City Government
X Other Government	___Other__________

For Corporations or Limited Partnerships, provide:
State Franchise Tax ID Number:__________SOS Charter (filing) Number: __________

3. APPLICATION CONTACT INFORMATION (Instructions, Page. 9)

If the TCEQ needs additional information during the review of the application, who should be contacted? Applicant may submit their own contact information if Applicant wishes to be the point of contact.

First and Last Name: Brian Sledge

Title: Attorney

Organization Name: SledgeLaw Group PLLC

Mailing Address: 919 Congress Avenue, Suite 460

City: Austin State: Texas ZIP Code: 78701

Phone Number: 512-579-3600

Fax Number: ____________

E-mail Address [redacted]

4. WATER RIGHT CONSOLIDATED CONTACT INFORMATION (Instructions, Page. 9)

This section applies only if there are multiple Owners of the same authorization. Unless otherwise requested, Co-Owners will each receive future correspondence from the Commission regarding this water right (after a permit has been issued), such as notices and water use reports. Multiple copies will be sent to the same address if Co-Owners share the same address. Complete this section if there will be multiple owners and **all** owners agree to let one owner receive correspondence from the Commission. Leave this section blank if you would like all future notices to be sent to the address of each of the applicants listed in section 2 above.

I/We authorize all future notices be received on my/our behalf at the following:

First and Last Name: ______________________________

Title: ______________________________

Organization Name: ______________________________

Mailing Address: ______________________________

City: ____________________ State: ______________ ZIP Code: ______________

Phone Number: ______________________

Fax Number: ______________________

E-mail Address: ______________________

5. MISCELLANEOUS INFORMATION (Instructions, Page. 9)

a. The application will not be processed unless all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol by all applicants/co-applicants. If you need assistance determining whether you owe delinquent penalties or fees, please call the Water Rights Permitting Team at (512) 239-4600, prior to submitting your application.

1. Does Applicant or Co-Applicant owe any fees to the TCEQ? **Yes / No** No

   If **yes**, provide the following information:

   Account number:_______________ Amount past due:________

2. Does Applicant or Co-Applicant owe any penalties to the TCEQ? **Yes / No** No

   If **yes**, please provide the following information:

   Enforcement order number:_______________ Amount past due: ________

b. If the Applicant is a taxable entity (corporation or limited partnership), the Applicant must be in good standing with the Comptroller or the right of the entity to transact business in the State may be forfeited. See Texas Tax Code, Subchapter F. Applicants may check their status with the Comptroller at https://mycpa.cpa.state.tx.us/coa/
Is the Applicant or Co-Applicant in good standing with the Comptroller? **Yes / No** NA

c. The commission will not grant an application for a water right unless the applicant has submitted all Texas Water Development Board (TWDB) surveys of groundwater and surface water use - if required. See TWC §16.012(m) and 30 TAC § 297.41(a)(5). Applicants should check survey status on the TWDB website prior to filing:
https://www3.twdb.texas.gov/apps/reports/WU/SurveyStatus_PriorThreeYears

Applicant has submitted all required TWDB surveys of groundwater and surface water?
Yes / No Yes

6. SIGNATURE PAGE (Instructions, Page. 11)

Applicant:

I, Walt Sears Executive Director and General Manager

(Typed or printed name) (Title)

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under Title 30 Texas Administrative Code §295.14 to sign and submit this document and I have submitted written evidence of my signature authority.

Signature: Walt Sears Date: 6-6-2022

(Use blue ink)

Subscribed and Sworn to before me by the said

on this 6th day of June, 2022.

My commission expires on the 17th day of December, 2023.

O Brantley

Notary Public [SEAL]

County, Texas

OSIRIS BRANTLEY
My Notary ID # 130473254
Expires December 17, 2023

If the Application includes Co-Applicants, each Applicant and Co-Applicant must submit an original, separate signature page

RESOLUTION NO. 2021-02

THE STATE OF TEXAS	§	
	§	
NORTHEAST TEXAS	§	
MUNICIPAL WATER DISTRICT	§	

A RESOLUTION AUTHORIZING THE EXECUTION OF A DEVELOPMENT AGREEMENT AND RELATED DOCUMENTS WITH LUMINANT GENERATION COMPANY, LLC AND LUMINANT MINING COMPANY, LLC. AND TO FILE APPLICATIONS WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RELATED TO THE AGREEMENT

WHEREAS, the Northeast Texas Municipal Water District (the "District") is a conservation and reclamation district created in 1953 under Article XVI, Section 59 of the Texas Constitution; and

WHEREAS, the District was created by the Texas Legislature to, among other things, serve the water needs of its member cities and to manage the Big Cypress Creek Basin (the "Basin") and associated reservoirs, including Lake O' the Pines; and

WHEREAS, the District seeks additional water supply in the upper end of the Basin for beneficial downstream uses during critical low-flow and drought conditions within the Basin; and

WHEREAS, Luminant Generation Company LLC, a Texas limited liability company and Luminant Mining Company LLC, a Texas limited liability company (together "Luminant") own property known as the Monticello Winfield South Mine, located in or near Winfield, Texas, in the Tankersley Creek region of the Basin (the "Property"); and

WHEREAS, the Property having been permitted for mining operations is no longer operated as a mine and is going through reclamation pursuant to the Railroad Commission of Texas requirements ("Reclamation"); and

WHEREAS, the Property contains certain final mining pits that upon completion of Reclamation will have the capacity to impound and store water which can then be pumped into tributaries of the Basin (the "Mining Pits"); and

WHEREAS, there has been increasing state legislative interest in the feasibility and desirability of converting quarries and surface mine pits for the use as water storage reservoirs to enhance the state's available water supply; and

WHEREAS, the District, under the direction of the Board of Directors, has been in negotiations with Luminant about the use of its Mining Pits for water supply purposes; and

WHEREAS, the District has found that the water from the Mining Pits, if made available to the Basin, will be put to a beneficial use, serve a public purpose, be in the best interest and welfare of the public and provide long-term benefit to the environmental condition of the Basin, including improved water quality, seasonal flows and the reintroduction, together with U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department, of the American paddlefish (Polyodon spathula) to the Basin; and

WHEREAS, the District and Luminant have negotiated a Development Agreement under which the District will acquire the right to store water in and release water from the Mining Pits to tributaries of the Basin for the furtherance of the above purposes (the "Development Agreement"); and

WHEREAS, the District now desires to execute the Development Agreement and to authorize its Executive Director, on behalf of the District, to prepare and execute such Development Agreement and all associated documents.

NOW, THEREFORE, THE BOARD OF DIRECTORS IN ITS REGULAR MEETING RESOLVES THAT:

1. The above recitals are true and correct.

2. The Board of Directors of the District hereby direct the Executive Director to prepare and execute the Development Agreement with Luminant.

3. The Executive Director of the District is further authorized to take any and all action necessary to implement this Development Agreement, including but not limited to the execution of all other documents associated with or necessary to implement the terms of the Development Agreement and the filing of any water rights or other applications with the Texas Commission on Environmental Quality for the necessary authorizations to implement the terms of the Development Agreement.

4. The Executive Director of the District is further authorized to take any and all action necessary to coordinate with Luminant as may be required in order to implement the terms of the Development Agreement.

THIS RESOLUTION ADOPTED BY THE DISTRICT BOARD OF DIRECTORS IN A REGULAR MEETING ON MAY 24, 2021.

By: Robyn Shelton
President

W. J. Salmon Jr.
Secretary

TECHNICAL INFORMATION REPORT
WATER RIGHTS PERMITTING

This Report is required for applications for new or amended water rights. Based on the Applicant's responses below, Applicants are directed to submit additional Worksheets (provided herein). A completed Administrative Information Report is also required for each application.

Applicants are REQUIRED to schedule a pre-application meeting with TCEQ Permitting Staff to discuss Applicant's needs and to confirm information necessary for an application prior to submitting such application. Please contact the Water Availability Division at (512) 239-4600 or WRPT@tceq.texas.gov to schedule a meeting.

Date of pre-application meeting: 10/6/21; 3/18/22; and 5/31/22

1. New or Additional Appropriations of State Water. Texas Water Code (TWC) § 11.121 (Instructions, Page. 12)

State Water is: *The water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed in the state. TWC § 11.021.*

a. Applicant requests a new appropriation (diversion or impoundment) of State Water? **Y / N** No.

b. Applicant requests an amendment to an existing water right requesting an increase in the appropriation of State Water or an increase of the overall or maximum combined diversion rate? **Y / N** No. (If yes, indicate the Certificate or Permit number:________)

If Applicant answered yes to (a) or (b) above, does Applicant also wish to be considered for a term permit pursuant to TWC § 11.1381? **Y / N** No.

c. Applicant requests to extend an existing Term authorization or to make the right permanent? **Y / N** No. (If yes, indicate the Term Certificate or Permit number:__________________)

If Applicant answered yes to (a), (b) or (c), the following worksheets and documents are required:

- **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
- **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir requested in the application)
- **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for each diversion point and/or one worksheet for the upstream limit and one worksheet for the downstream limit of each diversion reach requested in the application)
- **Worksheet 5.0 – Environmental Information Worksheet**
- **Worksheet 6.0 – Water Conservation Information Worksheet**
- **Worksheet 7.0 – Accounting Plan Information Worksheet**
- **Worksheet 8.0 – Calculation of Fees**
- **Fees calculated on Worksheet 8.0** – see instructions **Page. 34.**
- **Maps** – See instructions **Page. 15.**
- **Photographs** - See instructions **Page. 30.**

Additionally, if Applicant wishes to submit an alternate source of water for the project/authorization, see Section 3, Page 3 for Bed and Banks Authorizations (Alternate sources may include groundwater, imported water, contract water or other sources).

Additional Documents and Worksheets may be required (see within).

2. Amendments to Water Rights. TWC § 11.122 (Instructions, Page. 12)

This section should be completed if Applicant owns an existing water right and Applicant requests to amend the water right. ***If Applicant is not currently the Owner of Record in the TCEQ Records, Applicant must submit a Change of Ownership Application (TCEQ-10204) <u>prior to</u> submitting the amendment Application or provide consent from the current owner to make the requested amendment. If the application does not contain consent from the current owner to make the requested amendment, TCEQ will not begin processing the amendment application until the Change of Ownership has been completed and will consider the Received Date for the application to be the date the Change of Ownership is completed.*** **See instructions page. 6.**

Water Right (Certificate or Permit) number you are requesting to amend: COA 04-4590

Applicant requests to sever and combine existing water rights from one or more Permits or Certificates into another Permit or Certificate? **Y / N** No. (if yes, complete chart below):

List of water rights to sever	Combine into this ONE water right

a. Applicant requests an amendment to an existing water right to increase the amount of the appropriation of State Water (diversion and/or impoundment)? **Y / N** No.

If yes, application is a new appropriation for the increased amount, complete ***Section 1 of this Report (PAGE. 1) regarding New or Additional Appropriations of State Water.***

b. Applicant requests to amend existing Term authorization to extend the term or make the water right permanent (remove conditions restricting water right to a term of years)? **Y / N** No.

If yes, application is a new appropriation for the entire amount, complete ***Section 1 of this Report (PAGE. 1) regarding New or Additional Appropriations of State Water.***

c. Applicant requests an amendment to change the purpose or place of use or to add an additional purpose or place of use to an existing Permit or Certificate? **Y / N** No.
If yes, submit:

- **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
- **Worksheet 1.2 - Notice: "Marshall Criteria"**

d. Applicant requests to change: diversion point(s); or reach(es); or diversion rate? **Y / N** No.
If yes, submit:

- **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for each diversion point or one worksheet for the upstream limit and one worksheet for the downstream limit of each diversion reach)
- **Worksheet 5.0 – Environmental Information** (Required for <u>any</u> new diversion points that are not already authorized in a water right)

e. Applicant requests amendment to add or modify an impoundment, reservoir, or dam? **Y / N** No.

If yes, submit: **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir)

f. Other - Applicant requests to change any provision of an authorization not mentioned above? **Y / N** No. *If yes, call the Water Availability Division at (512) 239-4600 to discuss.*

Additionally, all amendments require:

- **Worksheet 8.0 – Calculation of Fees; and Fees calculated – see instructions Page. 34**
- **Maps – See instructions Page. 15.**
- **Additional Documents and Worksheets may be required (see within).**

3. Bed and Banks. TWC § 11.042 (Instructions, Page 13)

a. Pursuant to contract, Applicant requests authorization to convey, stored or conserved water to the place of use or diversion point of purchaser(s) using the bed and banks of a watercourse? TWC § 11.042(a). **Y/N** No.

If yes, submit a signed copy of the Water Supply Contract pursuant to 30 TAC §§ 295.101 and 297.101. Further, if the underlying Permit or Authorization upon which the Contract is based does not authorize Purchaser's requested Quantity, Purpose or Place of Use, or Purchaser's diversion point(s), then either:

1. *Purchaser must submit the worksheets required under Section 1 above with the Contract Water identified as an alternate source; or*
2. *Seller must amend its underlying water right under Section 2.*

b. Applicant requests to convey water imported into the state from a source located wholly outside the state using the bed and banks of a watercourse? TWC § 11.042(a-1). **Y / N** No.

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps and fees from the list below.

c. Applicant requests to convey Applicant's own return flows derived from privately owned groundwater using the bed and banks of a watercourse? TWC § 11.042(b). **Y / N** No.

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps, and fees from the list below.

d. Applicant requests to convey Applicant's own return flows derived from surface water using the bed and banks of a watercourse? TWC § 11.042(c). **Y / N** No.

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, Maps, and fees from the list below.

****Please note, if Applicant requests the reuse of return flows belonging to others, the Applicant will need to submit the worksheets and documents under Section 1 above, as the application will be treated as a new appropriation subject to termination upon direct or indirect reuse by the return flow discharger/owner.***

e. Applicant requests to convey water from any other source, other than (a)-(d) above, using the bed and banks of a watercourse? TWC § 11.042(c). **Y / N** Yes.

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps, and fees from the list below.

Worksheets and information:

- **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
- **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir owned by the applicant through which water will be conveyed or diverted)
- **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for the downstream limit of each diversion reach for the proposed conveyances)

- **Worksheet 4.0 – Discharge Information Worksheet** (for each discharge point)
- **Worksheet 5.0 – Environmental Information Worksheet**
- **Worksheet 6.0 – Water Conservation Information Worksheet**
- **Worksheet 7.0 – Accounting Plan Information Worksheet**
- **Worksheet 8.0 – Calculation of Fees; and Fees calculated – see instructions Page. 34**
- **Maps** – See instructions **Page. 15.**
- **Additional Documents and Worksheets may be required (see within).**

4. General Information, Response Required for all Water Right Applications (Instructions, Page 15)

a. Provide information describing how this application addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement (*not required for applications to use groundwater-based return flows*). Include citations or page numbers for the State and Regional Water Plans, if applicable. Provide the information in the space below or submit a supplemental sheet entitled "Addendum Regarding the State and Regional Water Plans":

The state and regional water plans generally do not address every possible change in individual water rights. This application is consistent with the 2021 Region D Water Plan and the 2022 State Water Plan because there is nothing in the plans that conflict with this application.

b. Did the Applicant perform its own Water Availability Analysis? **Y / N** Yes.

If the Applicant performed its own Water Availability Analysis, provide electronic copies of any modeling files and reports.

c. Does the application include required Maps? (**Instructions Page. 15**) **Y / N** Yes.

WORKSHEET 1.0
Quantity, Purpose and Place of Use

1. New Authorizations (Instructions, Page. 16)

Submit the following information regarding quantity, purpose and place of use for requests for new or additional appropriations of State Water or Bed and Banks authorizations:

Quantity (acre-feet) (*Include losses for Bed and Banks*)	**State Water Source (River Basin) or Alternate Source** *each *alternate source* (*and new appropriation based on return flows of others*) *also requires completion of Worksheet 4.0*	**Purpose(s) of Use**	**Place(s) of Use** **requests to move state water out of basin also require completion of Worksheet 1.1 Interbasin Transfer*
6,469.5 ac. ft.	Alternate Source (water from off-channel storage)	Municipal, Industrial, Domestic and Recreation	Cypress Creek Basin

6,469.5 acre-feet Total amount of water (in acre-feet) to be used annually (*include losses for Bed and Banks applications*)

If the Purpose of Use is Agricultural/Irrigation for any amount of water, provide:

a. Location Information Regarding the Lands to be Irrigated

i) Applicant proposes to irrigate a total of__________acres in any one year. This acreage is all of or part of a larger tract(s) which is described in a supplement attached to this application and contains a total of__________acres in__________County, TX.

ii) Location of land to be irrigated: In the__________Original Survey No. ______, Abstract No.________.

A copy of the deed(s) or other acceptable instrument describing the overall tract(s) with the recording information from the county records must be submitted. Applicant's name must match deeds.

If the Applicant is not currently the sole owner of the lands to be irrigated, Applicant must submit documentation evidencing consent or other documentation supporting Applicant's right to use the land described.

Water Rights for Irrigation may be appurtenant to the land irrigated and convey with the land unless reserved in the conveyance. 30 TAC § 297.81.

2. Amendments - Purpose or Place of Use (Instructions, Page. 12)

a. Complete this section for each requested amendment changing, adding, or removing Purpose(s) or Place(s) of Use, complete the following:

Quantity (acre-feet)	Existing Purpose(s) of Use	Proposed Purpose(s) of Use*	Existing Place(s) of Use	Proposed Place(s) of Use**

**If the request is to add additional purpose(s) of use, include the existing and new purposes of use under "Proposed Purpose(s) of Use."*

***If the request is to add additional place(s) of use, include the existing and new places of use under "Proposed Place(s) of Use."*

Changes to the purpose of use in the Rio Grande Basin may require conversion. 30 TAC § 303.43.

b. For any request which adds Agricultural purpose of use or changes the place of use for Agricultural rights, provide the following location information regarding the lands to be irrigated:

i. Applicant proposes to irrigate a total of______________acres in any one year. This acreage is all of or part of a larger tract(s) which is described in a supplement attached to this application and contains a total of___________________acres in_________________________ County, TX.

ii. Location of land to be irrigated: In the_________________________Original Survey No. _________, Abstract No._______________.

A copy of the deed(s) describing the overall tract(s) with the recording information from the county records must be submitted. Applicant's name must match deeds. If the Applicant is not currently the sole owner of the lands to be irrigated, Applicant must submit documentation evidencing consent or other legal right for Applicant to use the land described.

Water Rights for Irrigation may be appurtenant to the land irrigated and convey with the land unless reserved in the conveyance. 30 TAC § 297.81.

c. Submit Worksheet 1.1, Interbasin Transfers, for any request to change the place of use which moves State Water to another river basin.

d. See Worksheet 1.2, Marshall Criteria, and submit if required.

e. See Worksheet 6.0, Water Conservation/Drought Contingency, and submit if required.

Not Applicable.

WORKSHEET 1.1
INTERBASIN TRANSFERS, TWC § 11.085

Submit this worksheet for an application for a new or amended water right which requests to transfer State Water from its river basin of origin to use in a different river basin. A river basin is defined and designated by the Texas Water Development Board by rule pursuant to TWC § 16.051.

Applicant requests to transfer State Water to another river basin within the State? **Y / N**_____

1. Interbasin Transfer Request (Instructions, Page. 20)

a. Provide the Basin of Origin.____

b. Provide the quantity of water to be transferred (acre-feet).________________________

c. Provide the Basin(s) and count(y/ies) where use will occur in the space below:

____

2. Exemptions (Instructions, Page. 20), TWC § 11.085(v)

Certain interbasin transfers are exempt from further requirements. Answer the following:

a. The proposed transfer, which in combination with any existing transfers, totals less than 3,000 acre-feet of water per annum from the same water right. **Y/N**_

b. The proposed transfer is from a basin to an adjoining coastal basin? **Y/N**___

c. The proposed transfer from the part of the geographic area of a county or municipality, or the part of the retail service area of a retail public utility as defined by Section 13.002, that is within the basin of origin for use in that part of the geographic area of the county or municipality, or that contiguous part of the retail service area of the utility, not within the basin of origin? **Y/N**__

d. The proposed transfer is for water that is imported from a source located wholly outside the boundaries of Texas, except water that is imported from a source located in the United Mexican States? **Y/N**__

3. Interbasin Transfer Requirements (Instructions, Page. 20)

For each Interbasin Transfer request that is not exempt under any of the exemptions listed above Section 2, provide the following information in a supplemental attachment titled "Addendum to Worksheet 1.1, Interbasin Transfer":

a. the contract price of the water to be transferred (if applicable) (also include a copy of the contract or adopted rate for contract water);

b. a statement of each general category of proposed use of the water to be transferred and a detailed description of the proposed uses and users under each category;

c. the cost of diverting, conveying, distributing, and supplying the water to, and treating the water for, the proposed users (example - expert plans and/or reports documents may be provided to show the cost);

d. describe the need for the water in the basin of origin and in the proposed receiving basin based on the period for which the water supply is requested, but not to exceed 50 years (the need can be identified in the most recently approved regional water plans. The state and regional water plans are available for download at this website: (http://www.twdb.texas.gov/waterplanning/swp/index.asp);

e. address the factors identified in the applicable most recently approved regional water plans which address the following:

   (i) the availability of feasible and practicable alternative supplies in the receiving basin to the water proposed for transfer;
   (ii) the amount and purposes of use in the receiving basin for which water is needed;
   (iii) proposed methods and efforts by the receiving basin to avoid waste and implement water conservation and drought contingency measures;
   (iv) proposed methods and efforts by the receiving basin to put the water proposed for transfer to beneficial use;
   (v) the projected economic impact that is reasonably expected to occur in each basin as a result of the transfer; and
   (vi) the projected impacts of the proposed transfer that are reasonably expected to occur on existing water rights, instream uses, water quality, aquatic and riparian habitat, and bays and estuaries that must be assessed under Sections 11.147, 11.150, and 11.152 in each basin *(if applicable)*. If the water sought to be transferred is currently authorized to be used under an existing permit, certified filing, or certificate of adjudication, such impacts shall only be considered in relation to that portion of the permit, certified filing, or certificate of adjudication proposed for transfer and shall be based on historical uses of the permit, certified filing, or certificate of adjudication for which amendment is sought;

f. proposed mitigation or compensation, if any, to the basin of origin by the applicant; and

g. the continued need to use the water for the purposes authorized under the existing Permit, Certified Filing, or Certificate of Adjudication, if an amendment to an existing water right is sought.

Not Applicable.

WORKSHEET 1.2
NOTICE. "THE MARSHALL CRITERIA"

This worksheet assists the Commission in determining notice required for certain **amendments** that do not already have a specific notice requirement in a rule for that type of amendment, and *that do not change the amount of water to be taken or the diversion rate.* The worksheet provides information that Applicant **is required** to submit for amendments such as certain amendments to special conditions or changes to off-channel storage. These criteria address whether the proposed amendment will impact other water right holders or the on- stream environment beyond and irrespective of the fact that the water right can be used to its full authorized amount.

*This worksheet is **not required for Applications in the Rio Grande Basin** requesting changes in the purpose of use, rate of diversion, point of diversion, and place of use for water rights held in and transferred within and between the mainstems of the Lower Rio Grande, Middle Rio Grande, and Amistad Reservoir. See 30 TAC § 303.42.*

*This worksheet is **not required for amendments which are only changing or adding diversion points, or request only a bed and banks authorization or an IBT authorization.** However, Applicants may wish to submit the Marshall Criteria to ensure that the administrative record includes information supporting each of these criteria*

1. The "Marshall Criteria" (Instructions, Page. 21)

Submit responses on a supplemental attachment titled "Marshall Criteria" in a manner that conforms to the paragraphs (a) - (g) below:

a. Administrative Requirements and Fees. Confirm whether application meets the administrative requirements for an amendment to a water use permit pursuant to TWC Chapter 11 and Title 30 Texas Administrative Code (TAC) Chapters 281, 295, and 297. An amendment application should include, but is not limited to, a sworn application, maps, completed conservation plan, fees, etc.

b. Beneficial Use. Discuss how proposed amendment is a beneficial use of the water as defined in TWC § 11.002 and listed in TWC § 11.023. Identify the specific proposed use of the water (e.g., road construction, hydrostatic testing, etc.) for which the amendment is requested.

c. Public Welfare. Explain how proposed amendment is not detrimental to the public welfare. Consider any public welfare matters that might be relevant to a decision on the application. Examples could include concerns related to the well-being of humans and the environment.

d. Groundwater Effects. Discuss effects of proposed amendment on groundwater or groundwater recharge.

e. State Water Plan. Describe how proposed amendment addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement. The state and regional water plans are available for download at:_
http://www.twdb.texas.gov/waterplanning/swp/index.asp.

f. Waste Avoidance. Provide evidence that reasonable diligence will be used to avoid waste and achieve water conservation as defined in TWC § 11.002. Examples of evidence could include, but are not limited to, a water conservation plan or, if required, a drought contingency plan, meeting the requirements of 30 TAC Chapter 288.

g. Impacts on Water Rights or On-stream Environment. Explain how the proposed amendment will not impact other water right holders or the on-stream environment beyond and irrespectiveof the fact that the water right can be used to its full authorized amount.

WORKSHEET 2.0
Impoundment/Dam Information

Not Applicable.

This worksheet **is required** for any impoundment, reservoir and/or dam. Submit an additional Worksheet 2.0 for each impoundment or reservoir requested in this application.

If there is more than one structure, the numbering/naming of structures should be consistent throughout the application and on any supplemental documents (e.g., maps).

1. Storage Information (Instructions, Page. 21)

a. Official USGS name of reservoir, if applicable:________________________

b. Provide amount of water (in acre-feet) impounded by structure at normal maximum operating level:____________.

c. The impoundment is on-channel_______or off-channel_____(mark one)

i. Applicant has verified on-channel or off-channel determination by contacting Surface Water Availability Team at (512) 239-4600? **Y / N**_____

ii. If on-channel, will the structure have the ability to pass all State Water inflows that Applicant does not have authorization to impound? **Y / N**_

d. Is the impoundment structure already constructed? **Y / N**____

i. For already constructed **on-channel** structures:

1. Date of Construction:________________________

2. Was it constructed to be an exempt structure under TWC § 11.142? **Y / N**___
   a. If Yes, is Applicant requesting to proceed under TWC § 11.143? **Y / N**____
   b. If No, has the structure been issued a notice of violation by TCEQ? **Y / N**____

3. Is it a U.S. Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service (SCS)) floodwater-retarding structure? **Y / N**___
   a. If yes, provide the Site No.______and watershed project name_________;
   b. Authorization to close "ports" in the service spillway requested? **Y / N**___

ii. For **any** proposed new structures or modifications to structures:

1. Applicant **must** contact TCEQ Dam Safety Section at (512) 239-0326, *prior to submitting an Application.* Applicant has contacted the TCEQ Dam Safety Section regarding the submission requirements of 30 TAC, Ch. 299? **Y / N**____ Provide the date and the name of the Staff Person________________

2. As a result of Applicant's consultation with the TCEQ Dam Safety Section, TCEQ has confirmed that:
   a. No additional dam safety documents required with the Application. **Y / N**____
   b. Plans (with engineer's seal) for the structure required. **Y / N**____
   c. Engineer's signed and sealed hazard classification required. **Y / N**____
   d. Engineer's statement that structure complies with 30 TAC, Ch. 299 Rules required. **Y / N**___

3. Applicants **shall** give notice by certified mail to each member of the governing body of each county and municipality in which the reservoir, or any part of the reservoir to be constructed, will be located. (30 TAC § 295.42). Applicant must submit a copy of all the notices and certified mailing cards with this Application. Notices and cards are included? **Y / N**____

iii. Additional information required for **on-channel** storage:

1. Surface area (in acres) of on-channel reservoir at normal maximum operating level:_______________.

2. Based on the Application information provided, Staff will calculate the drainage area above the on-channel dam or reservoir. If Applicant wishes to also calculate the drainage area they may do so at their option.
Applicant has calculated the drainage area. **Y/N**_______
If yes, the drainage area is_____________sq. miles.
(*If assistance is needed, call the Surface Water Availability Team prior to submitting the application, (512) 239-4600).*

2. Structure Location (Instructions, Page. 23)

a. On Watercourse (if on-channel) (USGS name):_______________________________________

b. Zip Code: ____

c. In the______________________________Original Survey No.____________, Abstract No._______, ______________County, Texas.

**** A copy of the deed(s) with the recording information from the county records must be submitted describing the tract(s) that include the structure and all lands to be inundated.***

*****If the Applicant is not currently the sole owner of the land on which the structure is or will be built and sole owner of all lands to be inundated, Applicant must submit documentation evidencing consent or other documentation supporting Applicant's right to use the land described.***

d. A point on the centerline of the dam (on-channel) or anywhere within the impoundment (off-channel) is:

Latitude_________________°N, Longitude_______________°W.

****Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places***

i. Indicate the method used to calculate the location (examples: Handheld GPS Device, GIS, Mapping Program):____

ii. Map submitted which clearly identifies the Impoundment, dam (where applicable), andthe lands to be inundated. See instructions Page. 15. **Y / N**___

WORKSHEET 3.0
DIVERSION POINT (OR DIVERSION REACH) INFORMATION

This worksheet **is required** for each diversion point or diversion reach. Submit one Worksheet 3.0 for **each** diversion point and two Worksheets for **each** diversion reach (one for the upstream limit and one for the downstream limit of each diversion reach).

The numbering of any points or reach limits should be consistent throughout the application and on supplemental documents (e.g., maps).

1. Diversion Information (Instructions, Page. 24)

a. This Worksheet is to add new (select 1 of 3 below):

1. x Diversion Point No.
2. ____Upstream Limit of Diversion Reach No.
3. ____Downstream Limit of Diversion Reach No.

b. Maximum Rate of Diversion for **this new point** 1,300 cfs (cubic feet per second) or__________gpm (gallons per minute)

c. Does this point share a diversion rate with other points? **Y / N** No.
*If yes, submit Maximum **Combined** Rate of Diversion for all points/reaches*______________cfs or__________gpm

d. For amendments, is Applicant seeking to increase combined diversion rate? **Y / N** No.

*** An increase in diversion rate is considered a new appropriation and would require completion of Section 1, New or Additional Appropriation of State Water.*

e. Check (√) the appropriate box to indicate diversion location and indicate whether the diversion location is existing or proposed):

Check one		Write: Existing or Proposed
☐	Directly from stream	
☑	From an on-channel reservoir	Existing.
☐	From a stream to an on-channel reservoir	
☐	Other method (explain fully, use additional sheets if necessary)	

f. Based on the Application information provided, Staff will calculate the drainage area above the diversion point (or reach limit). If Applicant wishes to also calculate the drainage area, you may do so at their option.

Applicant has calculated the drainage area. **Y / N** No.

If yes, the drainage area is____________sq. miles.
(*If assistance is needed, call the Surface Water Availability Team at (512) 239-4600, prior to submitting application*)

2. Diversion Location (Instructions, Page 25)

a. On watercourse (USGS name): Cypress Creek

b. Zip Code: 75657

c. Location of point: In the____________Original Survey No.______, Abstract No.____________, ____________County, Texas.
Diversion will be pursuant to the authorization in COA 04-4590: At the perimeter of Lake O' the Pines.

A copy of the deed(s) with the recording information from the county records must be submitted describing tract(s) that include the diversion structure.

For diversion reaches, the Commission cannot grant an Applicant access to property that the Applicant does not own or have consent or a legal right to access, the Applicant will be required to provide deeds, or consent, or other documents supporting a legal right to use the specific points when specific diversion points within the reach are utilized. Other documents may include, but are not limited to a recorded easement, a land lease, a contract, or a citation to the Applicant's right to exercise eminent domain to acquire access.

d. Point is at:
Latitude____________°N, Longitude____________°W.
Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places

e. Indicate the method used to calculate the location (examples: Handheld GPS Device, GIS, Mapping Program): COA 04-4590

f. Map submitted must clearly identify each diversion point and/or reach. See instructions Page. 15.

g. If the Plan of Diversion is complicated and not readily discernable from looking at the map, attach additional sheets that fully explain the plan of diversion.

WORKSHEET 4.0
DISCHARGE INFORMATION

This worksheet required for any requested authorization to discharge water into a State Watercourse for conveyance and later withdrawal or in-place use. Worksheet 4.1 is also required for each Discharge point location requested. **Instructions Page. 26.** ***Applicant is responsible for obtaining any separate water quality authorizations which may be required and for insuring compliance with TWC, Chapter 26 or any other applicable law.***

a. The purpose of use for the water being discharged will be Existing uses in COA 04-4590 (municipal, domestic, industrial, recreation).

b. Provide the amount of water that will be lost to transportation, evaporation, seepage, channel or other associated carriage losses 5 % (% or amount) and explain the method of calculation: General industry practice and standard.

c. Is the source of the discharged water return flows? **Y / N** No. If yes, provide the following information:

   1. The TPDES Permit Number(s).________(attach a copy of the **current** TPDES permit(s))

   2. Applicant is the owner/holder of each TPDES permit listed above? **Y / N**____

PLEASE NOTE: If Applicant is not the discharger of the return flows, or the Applicant is not the water right owner of the underlying surface water right, or the Applicant does not have a contract with the discharger, the application should be submitted under Section 1, New or Additional Appropriation of State Water, as a request for a new appropriation of state water. If Applicant is the discharger, the surface water right holder, or the contract holder, then the application should be submitted under Section 3, Bed and Banks.

   3. Monthly WWTP discharge data for the past 5 years in electronic format. (Attach and label as "Supplement to Worksheet 4.0").

   4. The percentage of return flows from groundwater______, surface water_____?

   5. If any percentage is surface water, provide the base water right number(s)______.

d. Is the source of the water being discharged groundwater? **Y / N** No. If yes, provide the following information:

   1. Source aquifer(s) from which water will be pumped:______

   2. If the well has not been constructed, provide production information for wells in the same aquifer in the area of the application. See http://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp. Additionally, provide well numbers or identifiers______.

   3. Indicate how the groundwater will be conveyed to the stream or reservoir.

   4. A copy of the groundwater well permit if it is located in a Groundwater Conservation District (GCD) or evidence that a groundwater well permit is not required.

di. Is the source of the water being discharged a surface water supply contract? **Y / N** No. If yes, provide the signed contract(s).

dii. Identify any other source of the water Off-channel storage pond pursuant to attached Development Agreement.

WORKSHEET 4.1
DISCHARGE POINT INFORMATION

This worksheet is required for **each** discharge point. Submit one Worksheet 4.1 for each discharge point. If there is more than one discharge point, the numbering of the points should be consistent throughout the application and on any supplemental documents (e.g., maps). **Instructions, Page 27.**

For water discharged at this location provide:

a. The amount of water that will be discharged at this point is 6,810 acre-feet per year. The discharged amount should include the amount needed for use and to compensate for any losses.

b. Water will be discharged at this point at a maximum rate of 50 cfs or ______ gpm.

c. Name of Watercourse as shown on Official USGS maps: Dragoo Creek

d. Zip Code 75455

e. Location of point: In the ______ Original Survey No. ______, Abstract No. ______, ______ County, Texas.

f. Point is at:

Latitude 33.155595 °N, Longitude -95.028318 °W.

**Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places*

g. Indicate the method used to calculate the discharge point location (examples: Handheld GPS Device, GIS, Mapping Program): Coordinate System NAD 1927 State Plane Texas North Central

Map submitted must clearly identify each discharge point. See instructions Page. 15.

WORKSHEET 5.0
ENVIRONMENTAL INFORMATION

1. Impingement and Entrainment

This section is required for any new diversion point that is not already authorized. Indicate the measures the applicant will take to avoid impingement and entrainment of aquatic organisms (ex. Screens on any new diversion structure that is not already authorized in a water right). **Instructions, Page 28.**

2. New Appropriations of Water (Canadian, Red, Sulphur, and Cypress Creek Basins only) and Changes in Diversion Point(s)

This section is required for new appropriations of water in the Canadian, Red, Sulphur, and Cypress Creek Basins and in all basins for requests to change a diversion point. **Instructions, Page 30.**

Description of the Water Body at each Diversion Point or Dam Location. (Provide an Environmental Information Sheet for each location),

a. Identify the appropriate description of the water body.

☐ Stream

☐ Reservoir

Average depth of the entire water body, in feet: ____________________

☐ Other, specify: ____________________

b. Flow characteristics

If a stream, was checked above, provide the following. For new diversion locations, check one of the following that best characterize the area downstream of the diversion (check one).

☐ Intermittent – dry for at least one week during most years

☐ Intermittent with Perennial Pools – enduring pools

☐ Perennial – normally flowing

Check the method used to characterize the area downstream of the new diversion location.

☐ USGS flow records

☐ Historical observation by adjacent landowners

☐ Personal observation

☐ Other, specify: ______________________________

c. Waterbody aesthetics

Check one of the following that best describes the aesthetics of the stream segments affected by the application and the area surrounding those stream segments.

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional

☐ Natural Area: trees and/or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored

☐ Common Setting: not offensive; developed but uncluttered; water may be colored or turbid

☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

d. Waterbody Recreational Uses

Are there any known recreational uses of the stream segments affected by the application?

☐ Primary contact recreation (swimming or direct contact with water)

☐ Secondary contact recreation (fishing, canoeing, or limited contact with water)

☐ Non-contact recreation

e. Submit the following information in a Supplemental Attachment, labeled Addendum to Worksheet 5.0:

1. Photographs of the stream at the diversion point or dam location. Photographs should be in color and show the proposed point or reservoir and upstream and downstream views of the stream, including riparian vegetation along the banks. Include a description of each photograph and reference the photograph to the mapsubmitted with the application indicating the location of the photograph and the direction of the shot.

2. If the application includes a proposed reservoir, also include:

   i. A brief description of the area that will be inundated by the reservoir.

   ii. If a United States Army Corps of Engineers (USACE) 404 permit is required, provide the project number and USACE project manager.

   iii. A description of how any impacts to wetland habitat, if any, will be mitigated if the reservoir is greater than 5,000 acre-feet.

3. Alternate Sources of Water and/or Bed and Banks Applications

This section is required for applications using an alternate source of water and bed and banks applications in any basins. **Instructions, page 31.**

a. For all bed and banks applications:

   i. Submit an assessment of the adequacy of the quantity and quality of flows remaining after the proposed diversion to meet instream uses and bay and estuary freshwater inflow requirements. This application only requests to discharge and subsequently divert off-channel stored water. The amount of water diverted will not exceed the amount of water discharged, less losses, therefore there should be no changes to downstream instream flows or freshwater inflows.

b. For all alternate source applications:

   i. If the alternate source is treated return flows, provide the TPDES permit number_____

   ii. If groundwater is the alternate source, or groundwater or other surface water will be discharged into a watercourse provide:
   Reasonably current water chemistry information including but not limited to the following parameters in the table below. Additional parameters may be requested if there is a specific water quality concern associated with the aquifer from which water is withdrawn. If data for onsite wells are unavailable; historical data collected from similar sized wells drawing water from the same aquifer may be provided. However, onsite data may still be required when it becomes available. Provide the well number or well identifier. Complete the information below for each well and provide the Well Number or identifier. Please see attached Water Quality Information.

Parameter	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate, mg/L					
Chloride, mg/L					
Total Dissolved Solids, mg/L					
pH, standard units					
Temperature*, degrees Celsius					

* Temperature must be measured onsite at the time the groundwater sample is collected.

   iii. If groundwater will be used, provide the depth of the well__________and the name of the aquifer from which water is withdrawn_______________________.

WORKSHEET 6.0
Water Conservation/Drought Contingency Plans

This form is intended to assist applicants in determining whether a Water Conservation Plan and/or Drought Contingency Plans is required and to specify the requirements for plans. **Instructions, Page 31.**

The TCEQ has developed guidance and model plans to help applicants prepare plans. Applicants may use the model plan with pertinent information filled in. For assistance submitting a plan call the Resource Protection Team (Water Conservation staff) at 512-239-4600, or e-mail wras@tceq.texas.gov. The model plans can also be downloaded from the TCEQ webpage. ***Please use the most up-to-date plan documents available on the webpage.***

1. Water Conservation Plans

a. The following applications must include a completed Water Conservation Plan (30 TAC § 295.9) for each use specified in 30 TAC, Chapter 288 (municipal, industrial or mining, agriculture – including irrigation, wholesale):

1. Request for a new appropriation or use of State Water.

2. Request to amend water right to increase appropriation of State Water.

3. Request to amend water right to extend a term.

4. Request to amend water right to change a place of use.
   **does not apply to a request to expand irrigation acreage to adjacent tracts.*

5. Request to amend water right to change the purpose of use.
   **applicant need only address new uses.*

6. Request for bed and banks under TWC § 11.042(c), when the source water is State Water.
   **including return flows, contract water, or other State Water.*

b. If Applicant is requesting any authorization in section (1)(a) above, indicate each use for which Applicant is submitting a Water Conservation Plan as an attachment:

1. _x___Municipal Use. See 30 TAC § 288.2. **

2. _x___Industrial or Mining Use. See 30 TAC § 288.3.

3. _____Agricultural Use, including irrigation. See 30 TAC § 288.4.

4. _x___Wholesale Water Suppliers. See 30 TAC § 288.5. **

If Applicant is a water supplier, Applicant must also submit documentation of adoption of the plan. Documentation may include an ordinance, resolution, or tariff, etc. See 30 TAC §§ 288.2(a)(1)(J)(i) and 288.5(1)(H). Applicant has submitted such documentation with each water conservation plan? **Y / N_Yes._

c. Water conservation plans submitted with an application must also include data and information which: supports applicant's proposed use with consideration of the plan's water conservation goals; evaluates conservation as an alternative to the proposed

appropriation; and evaluates any other feasible alternative to new water development. See 30 TAC § 288.7.
Applicant has included this information in each applicable plan? **Y / N** Yes.

2. Drought Contingency Plans

a. A drought contingency plan is also required for the following entities if Applicant is requesting any of the authorizations in section (1) (a) above – indicate each that applies:

1. X Municipal Uses by public water suppliers. See 30 TAC § 288.20.
2. ____ Irrigation Use/ Irrigation water suppliers. See 30 TAC § 288.21.
3. X Wholesale Water Suppliers. See 30 TAC § 288.22.

b. If Applicant must submit a plan under section 2(a) above, Applicant has also submitted documentation of adoption of drought contingency plan (*ordinance, resolution, or tariff, etc. See 30 TAC § 288.30*) **Y / N** Yes

Not Applicable.

WORKSHEET 7.0
ACCOUNTING PLAN INFORMATION WORKSHEET

The following information provides guidance on when an Accounting Plan may be required for certain applications and if so, what information should be provided. An accounting plan can either be very simple such as keeping records of gage flows, discharges, and diversions; or, more complex depending on the requests in the application. Contact the Surface Water Availability Team at 512-239-4600 for information about accounting plan requirements, if any, for your application. **Instructions, Page 34.**

1. Is Accounting Plan Required

Accounting Plans are generally required:

- For applications that request authorization to divert large amounts of water from a single point where multiple diversion rates, priority dates, and water rights can also divert from that point;
- For applications for new major water supply reservoirs;
- For applications that amend a water right where an accounting plan is already required, if the amendment would require changes to the accounting plan;
- For applications with complex environmental flow requirements;
- For applications with an alternate source of water where the water is conveyed and diverted; and
- For reuse applications.

2. Accounting Plan Requirements

a. A **text file** that includes:
   1. an introduction explaining the water rights and what they authorize;
   2. an explanation of the fields in the accounting plan spreadsheet including how they are calculated and the source of the data;
   3. for accounting plans that include multiple priority dates and authorizations, a section that discusses how water is accounted for by priority date and which water is subject to a priority call by whom; and
   4. Should provide a summary of all sources of water.

b. A **spreadsheet** that includes:
   1. Basic daily data such as diversions, deliveries, compliance with any instream flow requirements, return flows discharged and diverted and reservoir content;
   2. Method for accounting for inflows if needed;
   3. Reporting of all water use from all authorizations, both existing and proposed;
   4. An accounting for all sources of water;
   5. An accounting of water by priority date;
   6. For bed and banks applications, the accounting plan must track the discharged water from the point of delivery to the final point of diversion;
   7. Accounting for conveyance losses;
   8. Evaporation losses if the water will be stored in or transported through a reservoir. Include changes in evaporation losses and a method for measuring reservoir content resulting from the discharge of additional water into the reservoir;
   9. An accounting for spills of other water added to the reservoir; and
   10. Calculation of the amount of drawdown resulting from diversion by junior rights or diversions of other water discharged into and then stored in the reservoir.

WORKSHEET 8.0
CALCULATION OF FEES

This worksheet is for calculating required application fees. Applications are not Administratively Complete until all required fees are received. **Instructions, Page. 34**

1. NEW APPROPRIATION

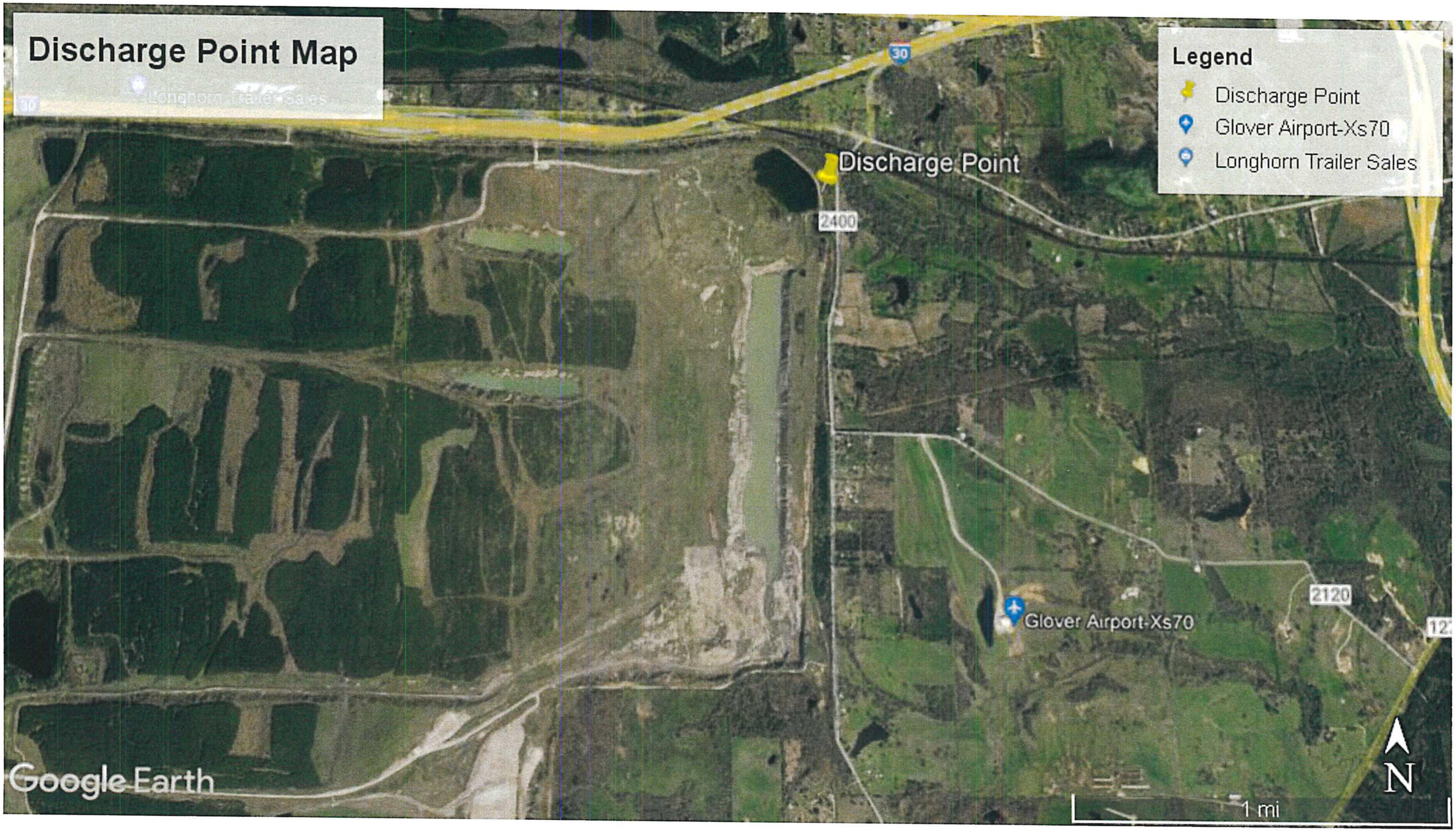
	Description	Amount ($)
Filing Fee	Circle fee correlating to the total amount of water* requested for any new appropriation and/or impoundment. Amount should match total on Worksheet 1, Section 1. Enter corresponding fee under **Amount ($).** In Acre-Feet a. Less than 100 $100.00 b. 100 - 5,000 $250.00 c. 5,001 - 10,000 $500.00 d. 10,001 - 250,000 $1,000.00 e. More than 250,000 $2,000.00	
Recording Fee		$25.00
Agriculture Use Fee	*Only for those with an Irrigation Use.* Multiply 50¢ x_____Number of acres that will be irrigated with State Water. **	
Use Fee	*Required for all Use Types, **excluding Irrigation Use.*** Multiply $1.00 x_____Maximum annual diversion of State Water in acre-feet. **	
Recreational Storage Fee	*Only for those with Recreational Storage.* Multiply $1.00 x_____acre-feet of in-place Recreational Use State Water to be stored at normal max operating level.	
Storage Fee	*Only for those with Storage, **excluding Recreational Storage.*** Multiply 50¢ x_____acre-feet of State Water to be stored at normal max operating level.	
Mailed Notice	Cost of mailed notice to all water rights in the basin. Contact Staff to determine the amount (512) 239-4600.	
	TOTAL	$

2. AMENDMENT *OR* SEVER AND COMBINE

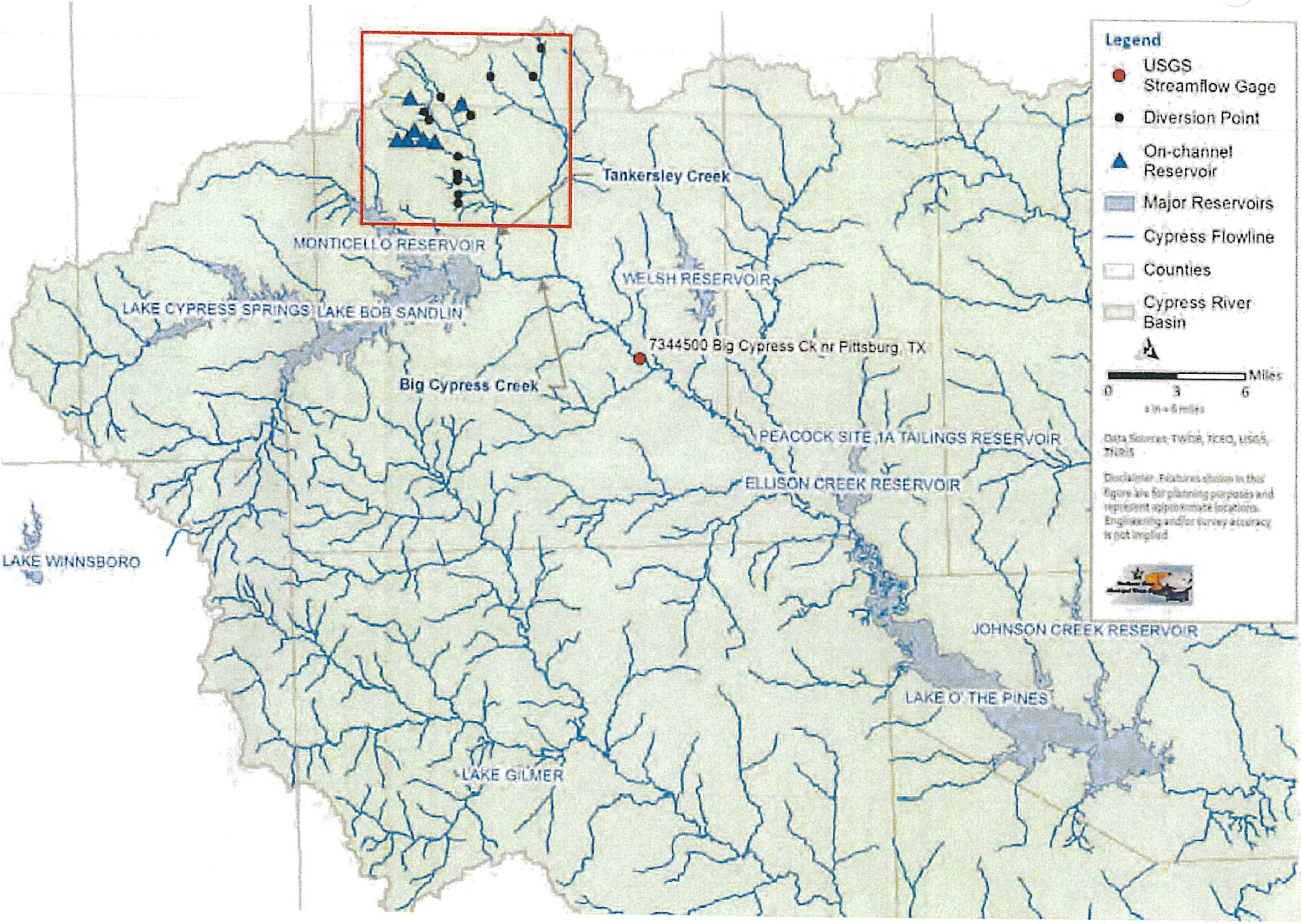
	Description	Amount ($)
Filing Fee	Amendment: $100	
	OR Sever and Combine: $100 x____of water rights to combine	
Recording Fee		$12.50
Mailed Notice	Additional notice fee to be determined once application is submitted.	
	TOTAL INCLUDED	$

3. BED AND BANKS

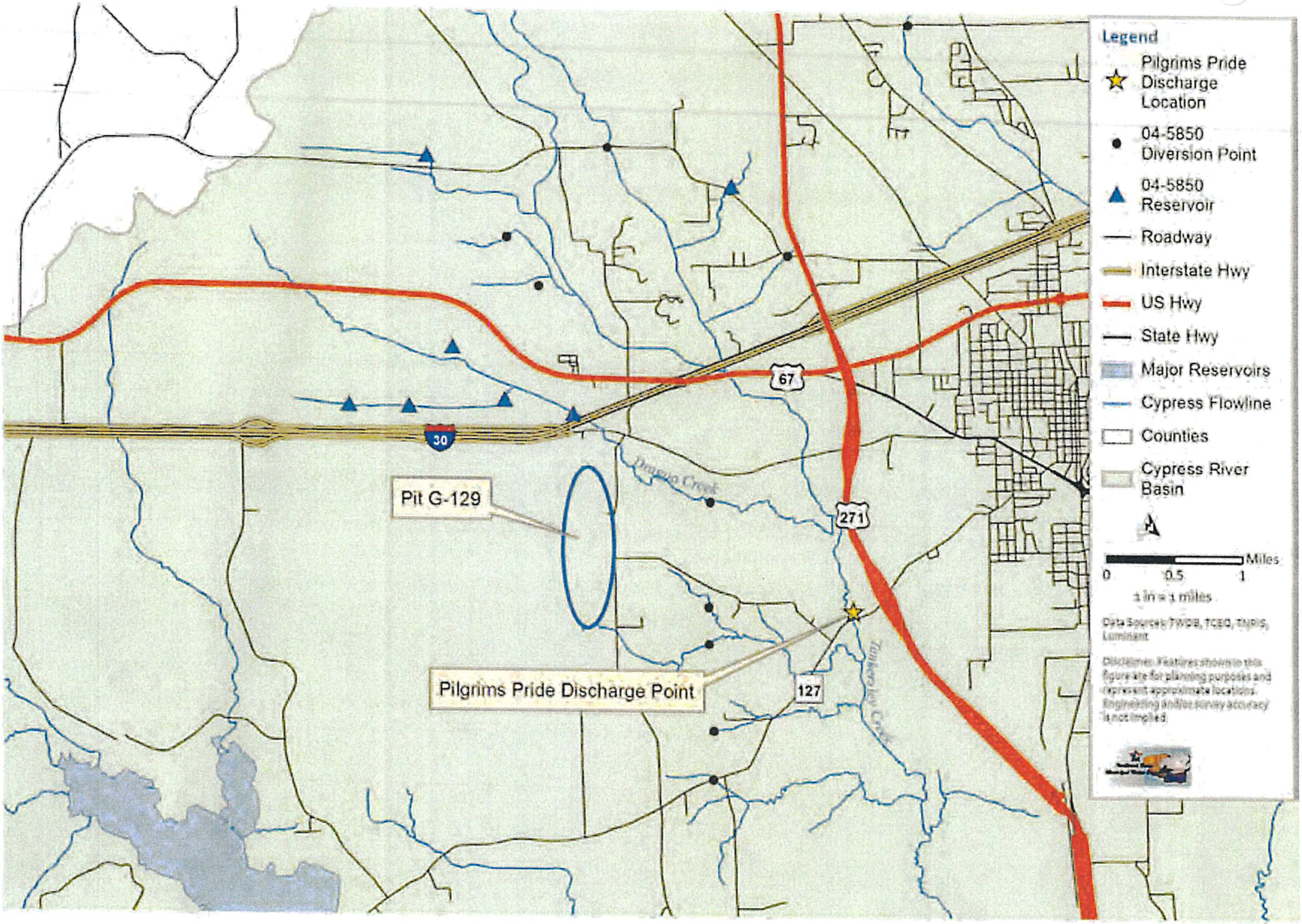
	Description	Amount ($)
Filing Fee		$100.00
Recording Fee		$12.50
Mailed Notice	Additional notice fee to be determined once application is submitted.	
	TOTAL INCLUDED	$ 112.50

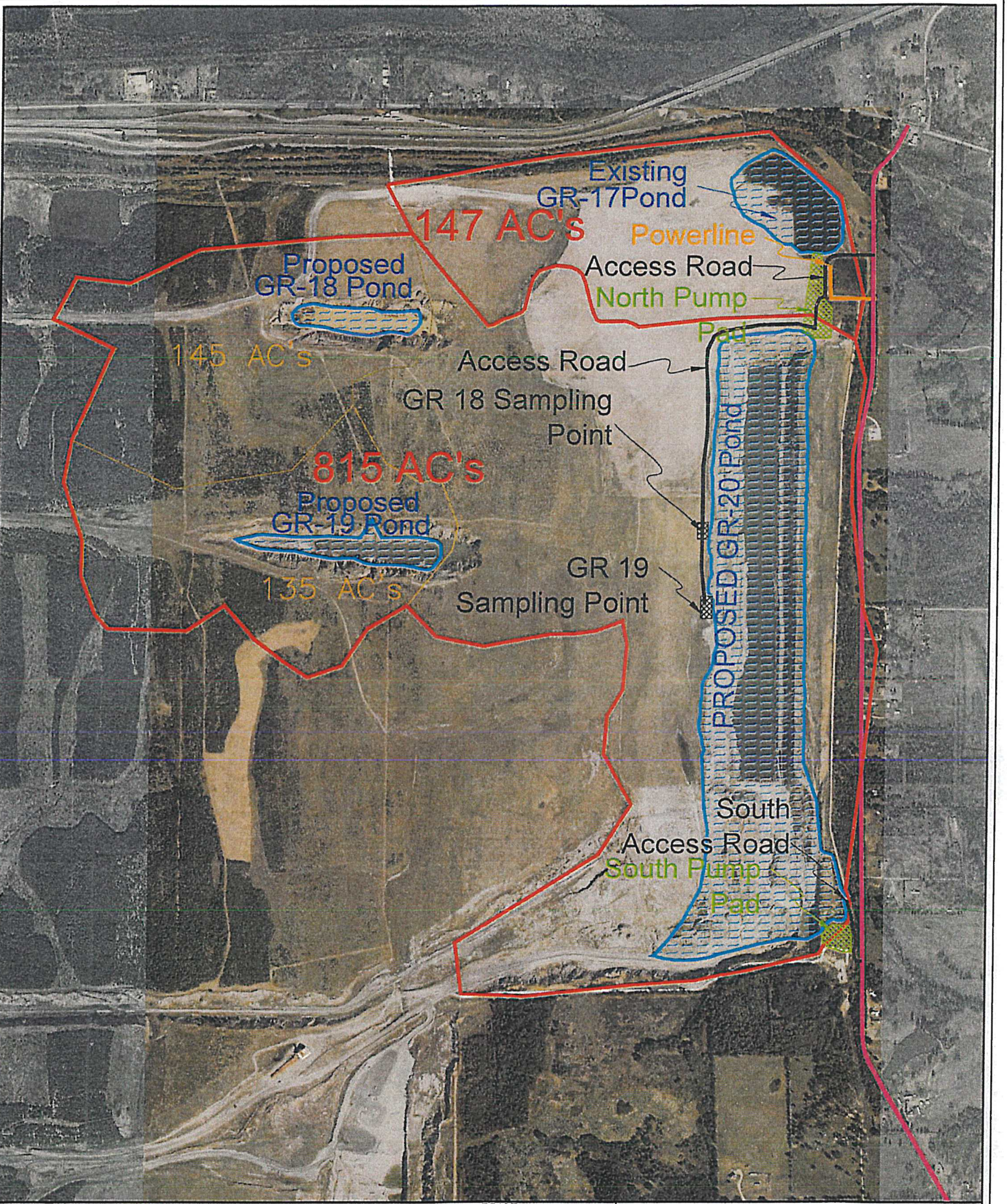


Discharge Point Map
Legend
Discharge Point
Glover Airport-Xs70
Longhorn Trailer Sales
Discharge Point
Longhorn Trailer Sales
30
2400
2120
Glover Airport-Xs70
Google Earth
N
1 mi



Legend
USGS Streamflow Gage
Diversion Point
On-channel Reservoir
Major Reservoirs
Cypress Flowline
Counties
Cypress River Basin
Miles
0
3
6
Tankersley Creek
MONTICELLO RESERVOIR
WELSH RESERVOIR
LAKE CYPRESS SPRINGS
LAKE BOB SANDLIN
7344500 Big Cypress Ck nr Pittsburg, TX
Big Cypress Creek
PEACOCK SITE 1A TAILINGS RESERVOIR
ELLISON CREEK RESERVOIR
LAKE WINNSBORO
JOHNSON CREEK RESERVOIR
LAKE O' THE PINES
LAKE GILMER


Legend
Pilgrims Pride Discharge Location
04-5850 Diversion Point
04-5850 Reservoir
Roadway
Interstate Hwy
US Hwy
State Hwy
Major Reservoirs
Cypress Flowline
Counties
Cypress River Basin
Miles
0
0.5
1
Pit G-129
Pilgrims Pride Discharge Point
30
67
271
127



Luminant ENERGY

SCALE
1,200 600 0 1,200 2,400
1" = 1,200

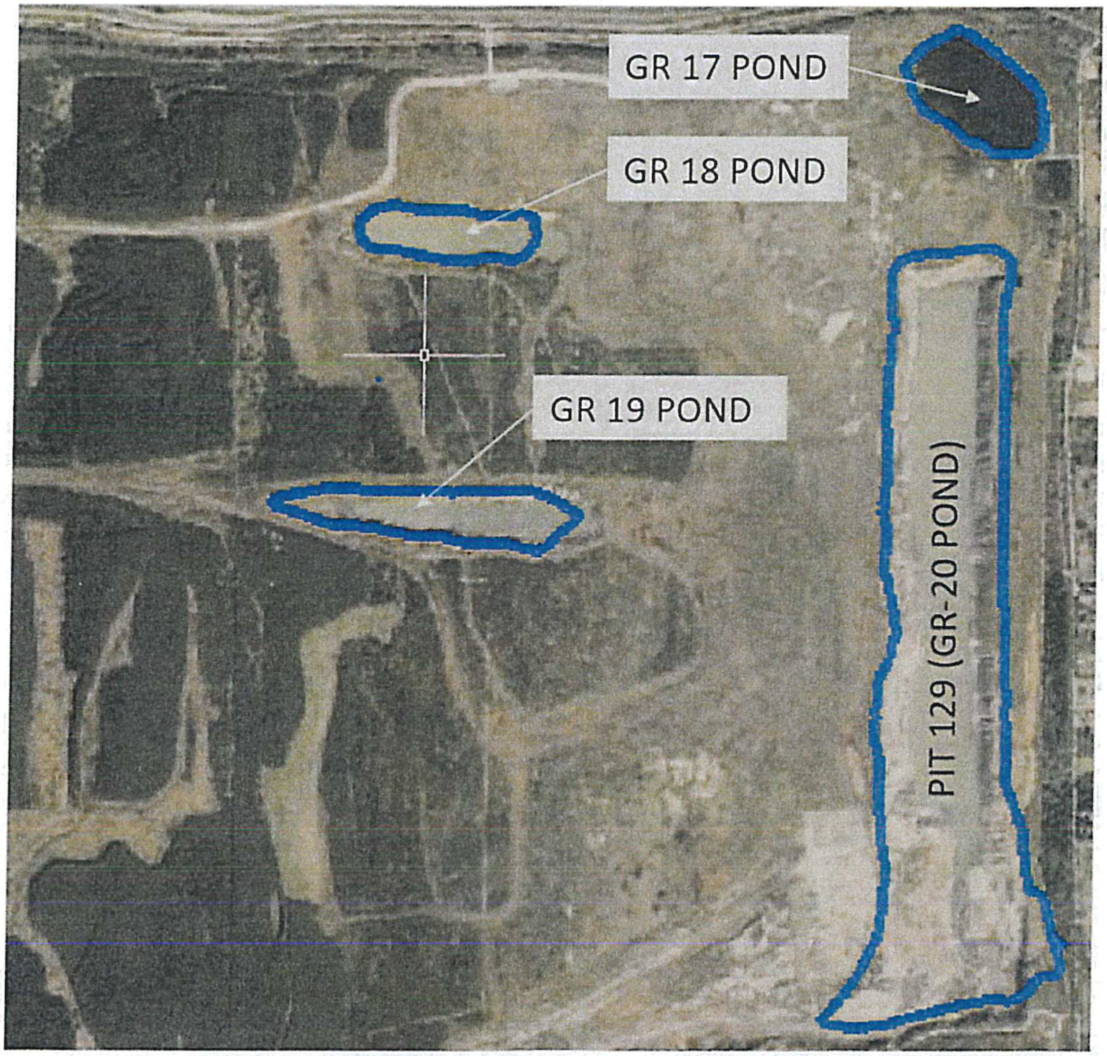
NETMWD Exhibit D

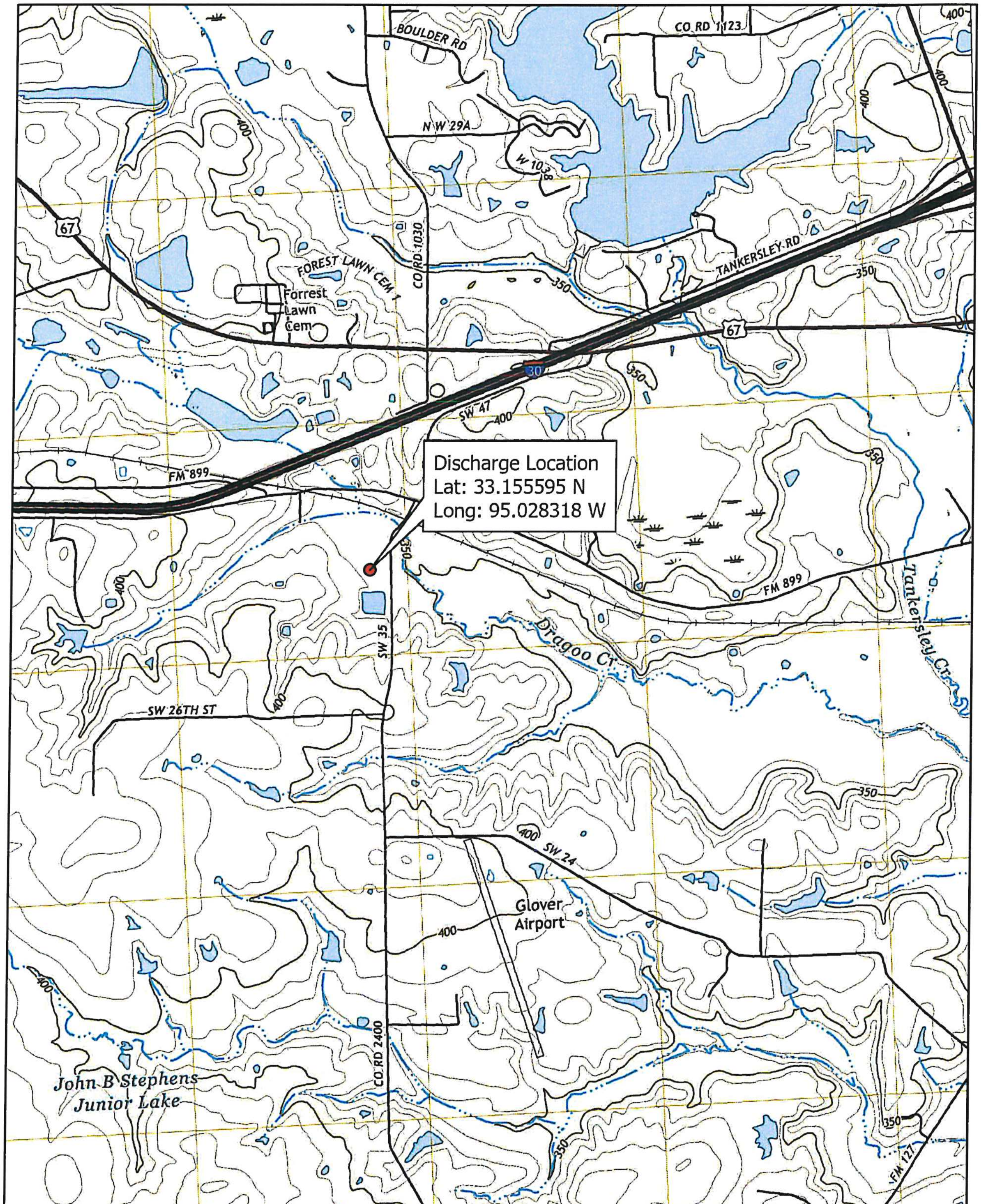
Winfield South G Area

Asset Closure

10/06/2020

G AREA Pit 129 POND NAMES AND LOCATIONS





Feet
0 1,000 2,000

Scale: 1:24,000

Winfield TX, 2019 USGS Quadrangle

Northeast Texas Municipal Water District

Technical Memorandum 1
TANKERSLEY CREEK RESERVOIR STUDY

FINAL | February 2019

carollo®
TBPE No. F-882

Northeast Texas Municipal Water District

Technical Memorandum 1
TANKERSLEY CREEK RESERVOIR STUDY

FINAL | February 2019

STATE OF TEXAS
TONY L. SMITH
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LICENSED
PROFESSIONAL ENGINEER

5316 HIGHWAY 290 WEST, SUITE 330 • AUSTIN, TEXAS 78735 • P. 512-453-5383 • F. 512-453-0101

Contents

Appendices

Tables

Figures

Abbreviations

7Q2	annual lowest mean discharge for 7 consecutive days with a 2-year recurrence interval
ac	acre
ac-ft/yr	acre-feet per year
Carollo	Carollo Engineers, Inc.
cf	cubic feet
cfs	cubic feet per second
F	Fahrenheit
ft	feet
µg/L	micrograms per liter
mg/L	milligrams per liter
mgd	million gallons per day
MPN	Most Probable Number
msl	mean sea level
psi	pounds per square inch
SWQM	Surface water quality monitoring
TCEQ	Texas commission on Environmental Quality
TDS	Total dissolved solids
µS/cm	microsiemens/centimeter
USGS	United States Geological Survey
WAM	Water availability model
WWTP	wastewater treatment plant

Section 1

EXECUTIVE SUMMARY

Streamflow in the Cypress Creek Basin varies drastically by season with periods of extreme low flow and dry conditions occurring during the summer months. An assessment of the potential use of an existing Luminant lignite mining pit as storage indicates the pit can provide an adequate quantity of water to meet potential downstream environmental and supplemental supply uses. After closure, Pit G-129 is estimated to have a storage capacity of 5,355 ac-ft in its final configuration.

A modified Full Authorization Water Availability Model was created by adding the proposed Pit G-129, impounding and operationally releasing flows downstream to determine the firm yield of the project and model potential impacts of the project on downstream flows. The model was run with and without the project to generate a baseline of simulated monthly flows at all control points in the model, thus allowing comparison of results with the pit storage project in operation. The firm yield of the pit was calculated using the Cypress Basin WAM and determined to be up to 480 ac-ft/yr. The pit has the capability to discharge up to 236 ac-ft per month (3.9 cfs) during the summer months and other low flow periods with potential to provide up to 900 ac-ft/yr of additional firm yield in Lake O' The Pines.

Additional study would be necessary to determine the ecological benefits from the discharge amounts derived herein. Specifically, hydraulic and habitat modeling would be necessary to determine the extent to which the additional flow would impact mesohabitat conditions for critical biology, and the geomorphology and connectivity of the downstream watershed. That said, the results of this study are encouraging in the sense that additional water could be made available during critical low-flow, drought conditions that could provide both water supply and environmental downstream benefits.

Based on this analysis of the historical water quality in the portion of the Cypress Creek Basin that would receive supplemental flow from the Luminant mine pit, i.e., Segments 0404 and 0403, the addition of flow from the pit is not expected to adversely impact water quality in the watershed.

Section 2

INTRODUCTION

Carollo Engineers, Inc. has completed a high-level assessment of the potential use of an existing lignite mining pit as storage to provide an adequate quantity and quality of water supply to meet potential downstream uses. Such uses may include, but are not be limited to, the following:

- "Beneficial" uses as defined by the State of Texas to bolster downstream water supplies and provide instream environmental benefits to the ecology of Tankersley and Big Cypress Creeks;
- Possible benefits to the stream through dilution of phosphates related to existing nutrient loadings to Big Cypress Creek (possibly through extension of programs related to reintroduction of Paddlefish); and.
- Supplementing downstream surface water supply.

2.1 Background

Luminant Mining Co. LLC (Luminant) is the current owner of Water Right (WR) 04-5850 permitting the diversion and use of not to exceed 50 acre-feet per year (ac-ft/yr) for lignite surface mining purposes, primarily dust suppression and other mining activities, and to maintain seven existing reservoirs within the Tankersley Creek and Hart Creek watersheds in the Monticello Lignite Mining Area in Titus County, Texas. Luminant's final pit at the Monticello G-Area, G-129, referred to hereafter as the "pit", is not presently one of these seven permitted reservoirs, but does have the capability to store water when not manually dewatered.

The Tankersley Creek watershed includes Dragoo Creek, several unnamed tributaries, and Tankersley Creek, itself a tributary of Big Cypress Creek in the Cypress Creek Basin. Figure 1 is a map of the upper Cypress Basin depicting the locations of major reservoirs, i.e., Lake Bob Sandlin and Lake O' The Pines, Tankersley and Big Cypress Creeks, and WR 04-5850 permitted impoundments and diversions. Aerial imagery of the local area is shown in Figure 2 highlighting Luminant's existing mine, denoted by the yellow circle. Figure 3 depicts the local area of interest, including permitted diversion and impoundment locations as represented by the Texas Commission on Environmental Quality (TCEQ) for WR 04-5850.

The Northeast Texas Municipal Water District (NETMWD) is the holder of substantial water rights and supplies downstream of Tankersley Creek. The primary sources of NETMWD supplies are surface water stored in Lake O' The Pines and Lake Bob Sandlin, as permitted in CoA 04-4590 as amended (refer to Appendix A for a copy of this certificate). The stated mission of NETMWD is "to protect the water quality in the Cypress Basin and to provide a sufficient supply of water to Northeast Texas." The pending closure of the existing Luminant pit presents a potential opportunity to use available storage in the pit to bolster both downstream instream flows and permitted water supplies in the basin.

Pilgrim's Pride Corporation holds a TPDES permit (No. WQ003017000) to treat and discharge a daily average of not more than 3.5 mgd of wastewater from the Southwest Wastewater Treatment Plant (WWTP) near Mount Pleasant to Tankersley Creek at the location shown in Figure 3. The permit limits the annual maximum load of total phosphorus of this discharge to not more than 44,650 lbs/year. A copy of the most recent TPDES permit is included in Appendix A.

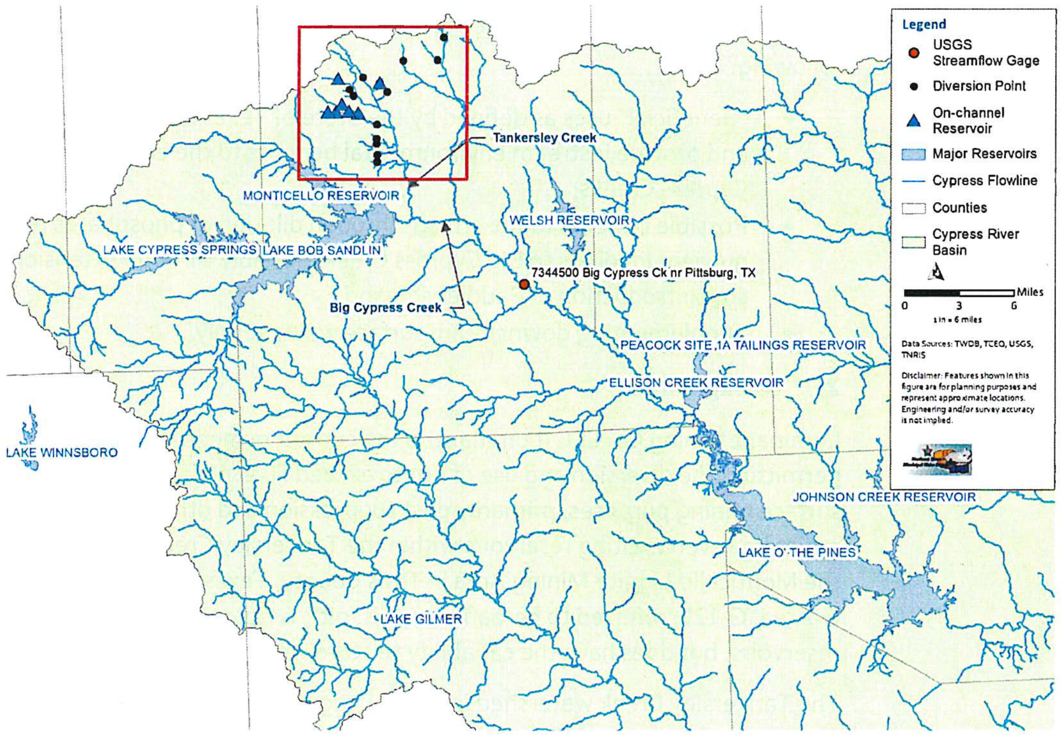


Figure 1 Upper Cypress Basin with Major Reservoirs and WR 04-5850 Diversions and Impoundments Identified

2.1.1 Scope

To investigate the potential efficacy for use of the pit by NETMWD, it is necessary to give consideration to both the quantity and quality of water available if the pit is to be used as storage, as well as the quality of water given the past use of the pit for coal mining and production.

The scope of work reported upon herein has thus focused upon the two elements of quantity and quality. Information has been compiled and observations collected in terms of both quantity and quality for analysis and evaluation. The results of these analyses provide a high-level assessment of the capability of the existing Luminant pit identified in Figure 2 to effectively address identified downstream objectives.

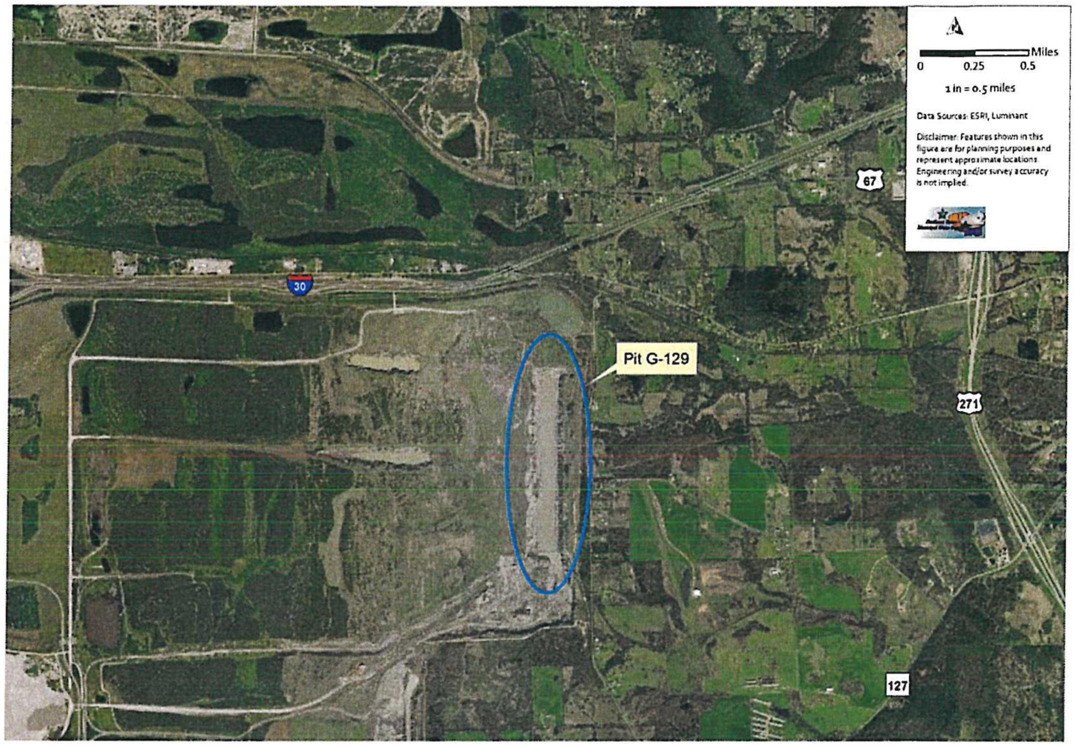


Figure 2 Aerial Imagery of Existing Luminant Pit G-129

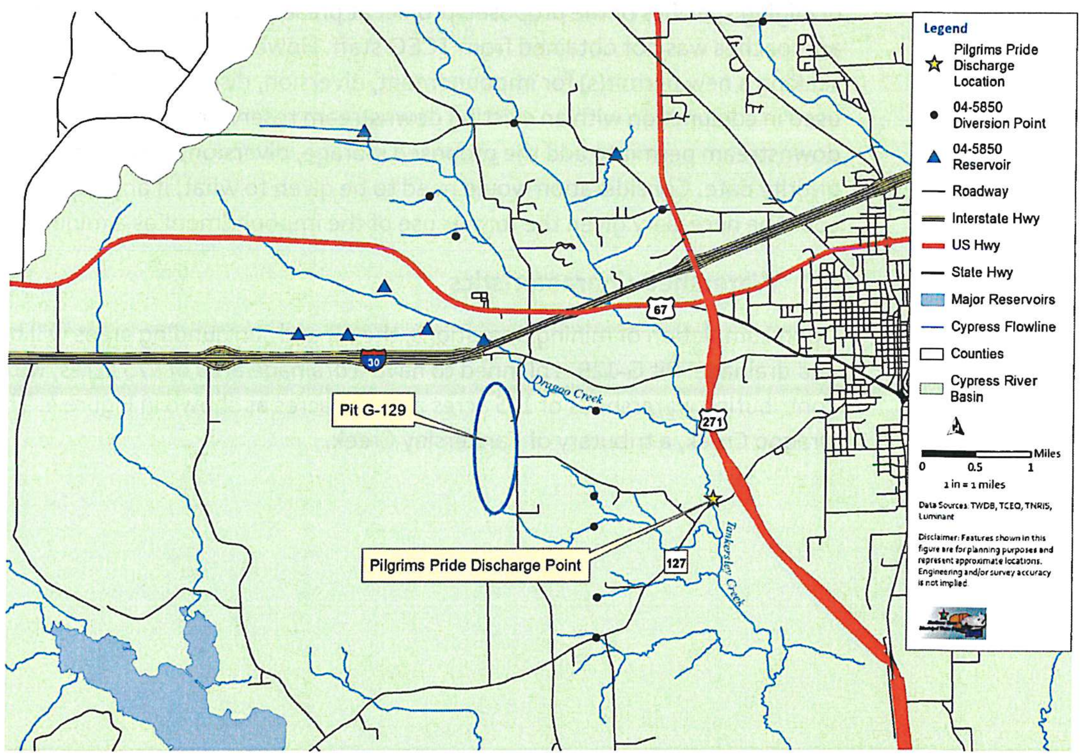


Figure 3 Map of Project Vicinity

For the water quantity characterization, the characteristics of the watershed, pit, and streamflow at identified key locations have been developed in order to provide a context for potential instream benefits from possible pumping of stored water from the pit. In order to derive the amount of water potentially available from use of the pit as surface water storage, a Water Availability Model (WAM) was then employed. Based on the results of the WAM, flows from storage are then quantified in the context of firm supply, streamflow (at various locations), and relative to key discharges in the stream.

For the characterization of water quality, an evaluation of the available information base was performed. Multiple surveys of the stored water in the existing pit were also performed in order to appropriately represent the water quality characteristics of the stored water in the pit relative to the receiving stream.

Section 3
WATER QUANTITY CHARACTERIZATION

3.1 Regulatory Setting

Informal communications were held with TCEQ staff to discuss at a high level the salient characteristics of the existing pit and potential approaches considered herein. Use of the latest Cypress Creek Basin WAM was confirmed to support the assessment of availability. Without divulging specifics of the proposed project at present, detailed information on permitting approaches was not obtained from TCEQ staff. However, in general options discussed included seeking a new permit(s) for impoundment, diversion, discharge and use of bed and banks to be used in conjunction with an existing downstream reservoir, or possible amendment of the downstream permit to add the proposed storage, diversion, and bed and banks use with a junior priority date. Consideration would need to be given to what, if any, additional requirements could be necessary given the former use of the impoundment as a mining pit.

3.2 Watershed Characteristics

Upon completion of mining operations, the pit and surrounding areas will be graded for stability and drainage. Pit G-129 is planned to have a drainage area of 475 acres, with additional contributing watersheds of 145 acres and 192 acres as shown in Figure 4. The pit discharges to Dragoo Creek, a tributary of Tankersley Creek.

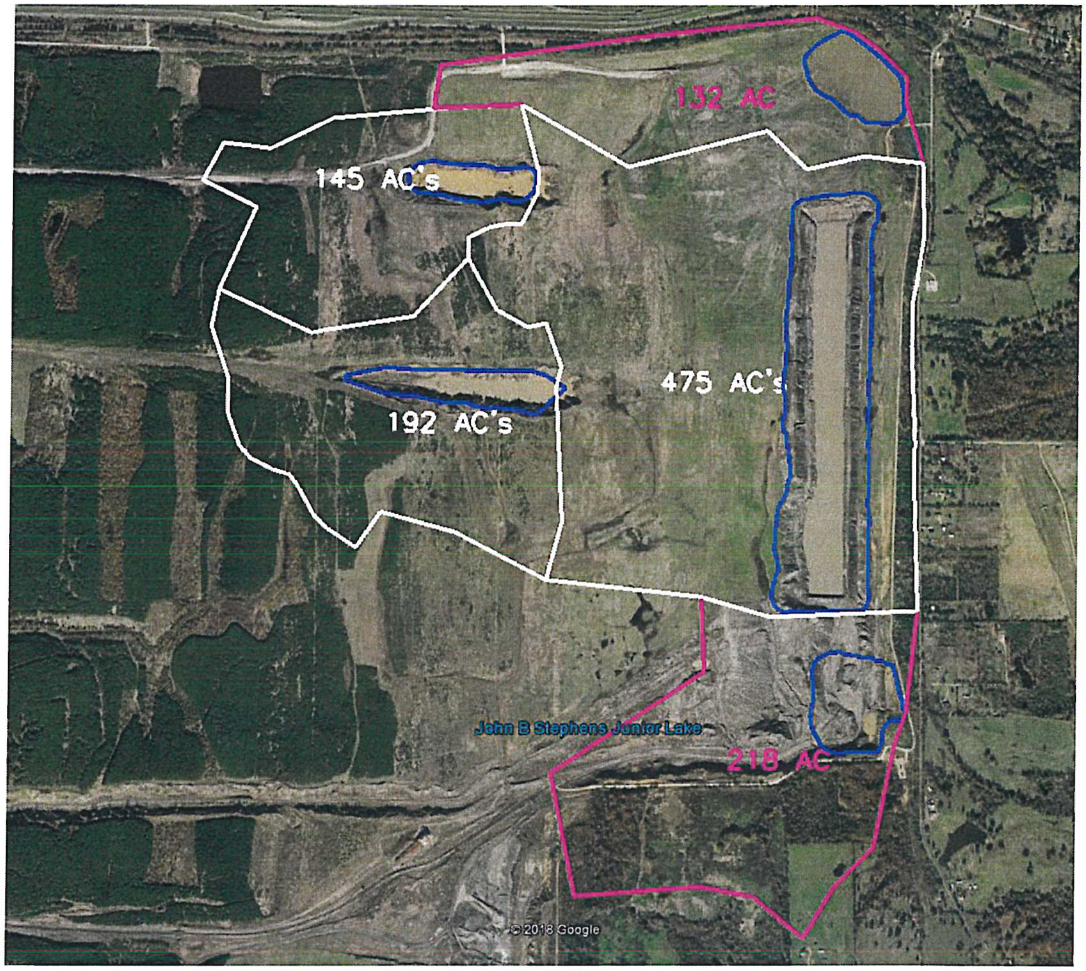


Figure 4 Pit G-129 Watershed Analysis

The contributing drainage area has also been determined for Tankersley Creek at the Pilgrim's Pride Southwest WWTP discharge location in order to estimate streamflow statistics at this location and allow for an evaluation of the potential water quality benefits to be gained through increased flow and dilution. Drainage areas for these locations and for the USGS gaging station on Big Cypress Creek near Pittsburg (USGS Gage 07344500) are shown in Table 1.

Table 1 Drainage Area at Key Project Locations (sq. mi.)

Location	Contributing Drainage Area (sq. miles)
Big Cypress Creek near Pittsburg Gage Location	370
Tankersley Creek at Pilgrim's Pride Discharge	21.9
Pit G-129 Discharge to Dragoo Creek	1.27

3.3 Streamflow Characteristics

In order to appropriately assess the potential impacts from potentially available flow from use of the Luminant pit as a source of stored water, it is necessary to characterize the characteristics of streamflows and discharges in the receiving stream. Typically, streamflow measurements are made through use of streamflow gaging stations, normally operated by the U.S. Geological Survey (USGS). As there is no USGS gage located directly on Tankersley Creek, it is thus necessary to first characterize the hydrology of the nearest downstream gage proximate to the proposed project.

3.3.1 USGS Gage 07344500, Big Cypress Creek near Pittsburg, Texas

The USGS streamflow gaging station for Big Cypress Creek near Pittsburg, Texas (USGS 07344500) has been in operation since 1943, with daily mean streamflow observations available starting April 1, 1943. The gaging station is located at Latitude 33°01'15", Longitude 94°52'55" (North American Datum of 1927) at the downstream side of the bridge on Highway 11 in Titus County, Texas (see Figure 1). The vertical datum of the gage is 247.49 feet above NGVD29. The contributing drainage area is 370 square miles. The gaging station is located approximately 9 miles downstream of Lake Bob Sandlin, and flows have been regulated since July 1970.

Records of streamflow for complete water years (October through September) are available for 48 years through September 2017. Daily mean gage height records for complete water years are available for 11 years from 1989 to 2015. Various statistics were computed for the available streamflow and gage height data using mean daily observations as wells as monthly and annual time steps. Summary statistics of daily mean observations are presented in Tables 2 and 3 for streamflow and gage height, respectively. Statistics were calculated for the entire period of record (using data for complete water years) and for a more recent period for comparison based on extended periods of missing data. The record of observations for streamflow and gage height do not overlap except for portions of the more recent record, so different time periods were used for analysis. Time series charts of mean daily discharge for the two time periods are presented in Figures 5 and 6. The ordinate axis of these charts has been truncated at 200 cfs so that greater detail is visible during lower flow periods, which account for about 75 percent of the observations. Time series charts of mean daily gage height for the two time periods are presented in Figures 7 and 8, in order to facilitate potential future considerations of instream effects of the project. These time series charts illustrate the periods of missing data in the records.

Table 2 Summary Statistics of Daily Mean Streamflow (cfs) at Big Cypress Creek near Pittsburg, USGS 07344500

Start Date	End Date	N (days)	Min	Lower Hexile	Lower Quartile	Median	Upper Quartile	Upper Hexile	Inter-Quartile Range	Max
10/1/1943	9/30/2017	17,533	0	7.3	11	37	191	388	180	48,900
10/1/2010	9/30/2017	2,557	1.72	8.42	9.99	19.1	63	147	53.0	26,000

Table 3 Summary Statistics of Daily Mean Gage Height (ft) at Big Cypress Creek near Pittsburg, USGS 07344500

Start Date	End Date	N (days)	Min	Lower Hexile	Lower Quartile	Median	Upper Quartile	Upper Hexile	Inter-Quartile Range	Max
10/1/1988	9/30/2015	4,019	4.12	4.91	5.13	6.01	9.68	11.4	4.55	21.2
10/1/2013	9/30/2015	730	4.12	4.51	4.7	5.62	7.41	9.53	2.71	15.5

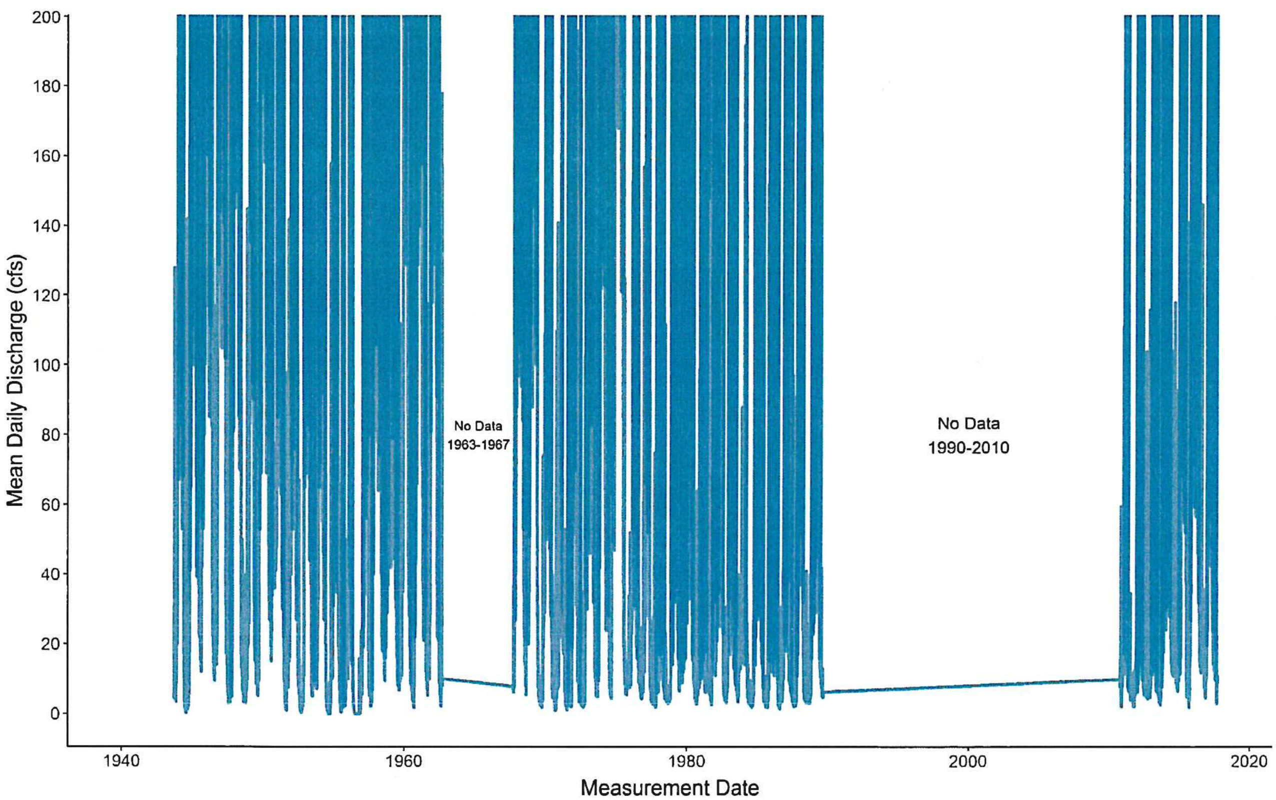


Figure 5 Time Series of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 1944–2017

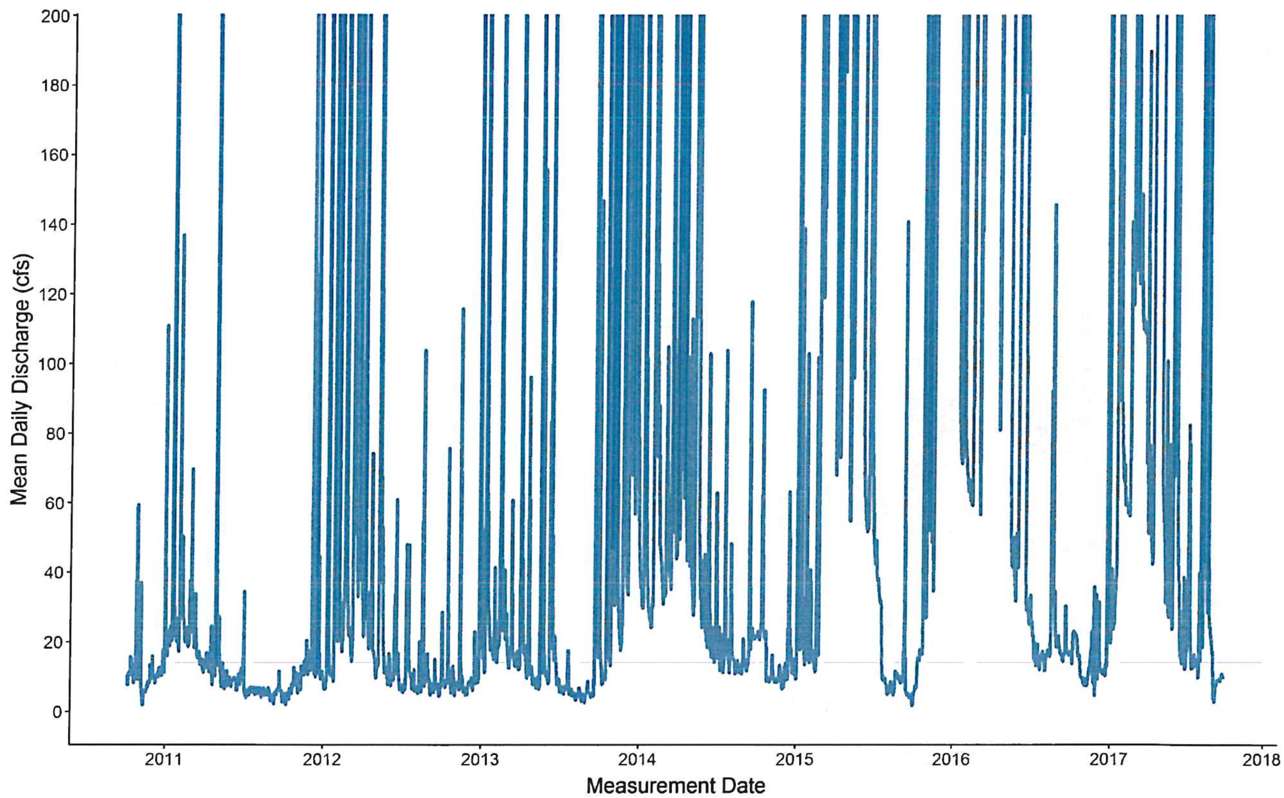


Figure 6 Time Series of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 2011–2017

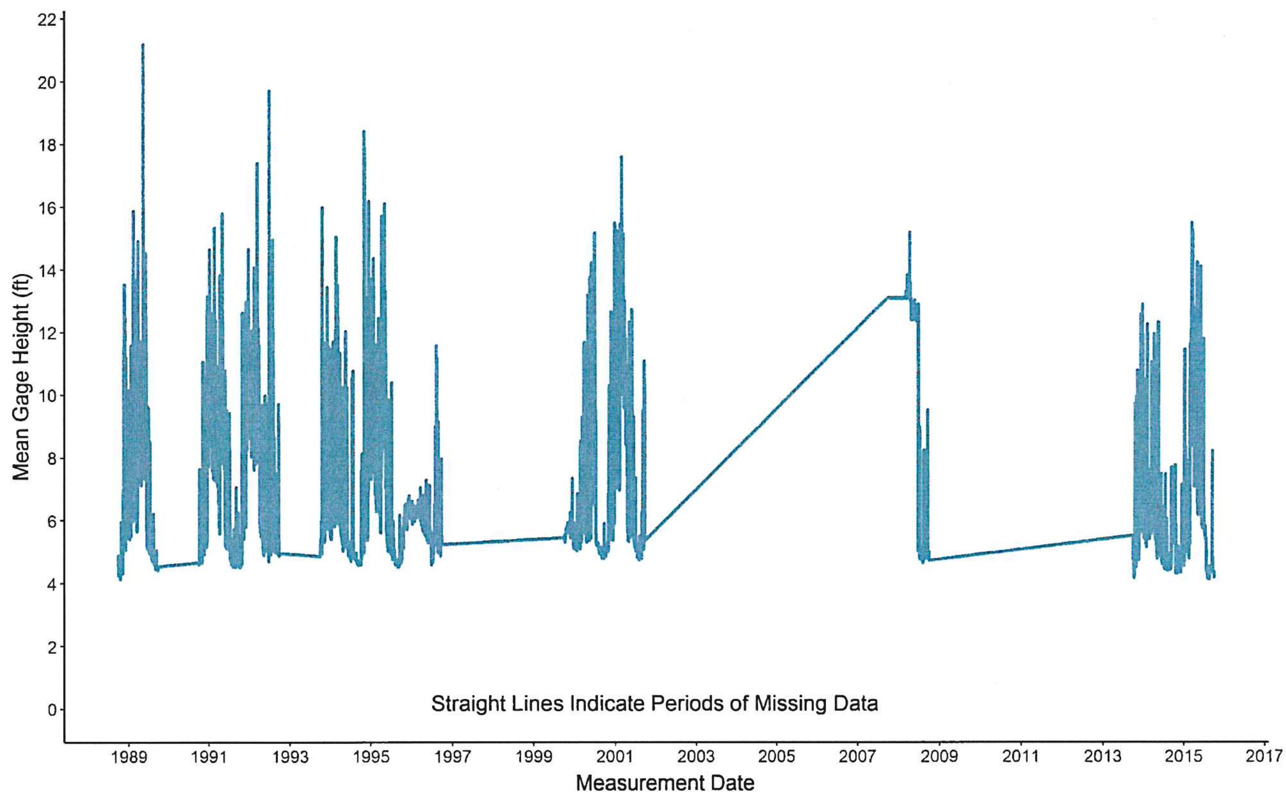


Figure 7 Time Series of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 1989–2015

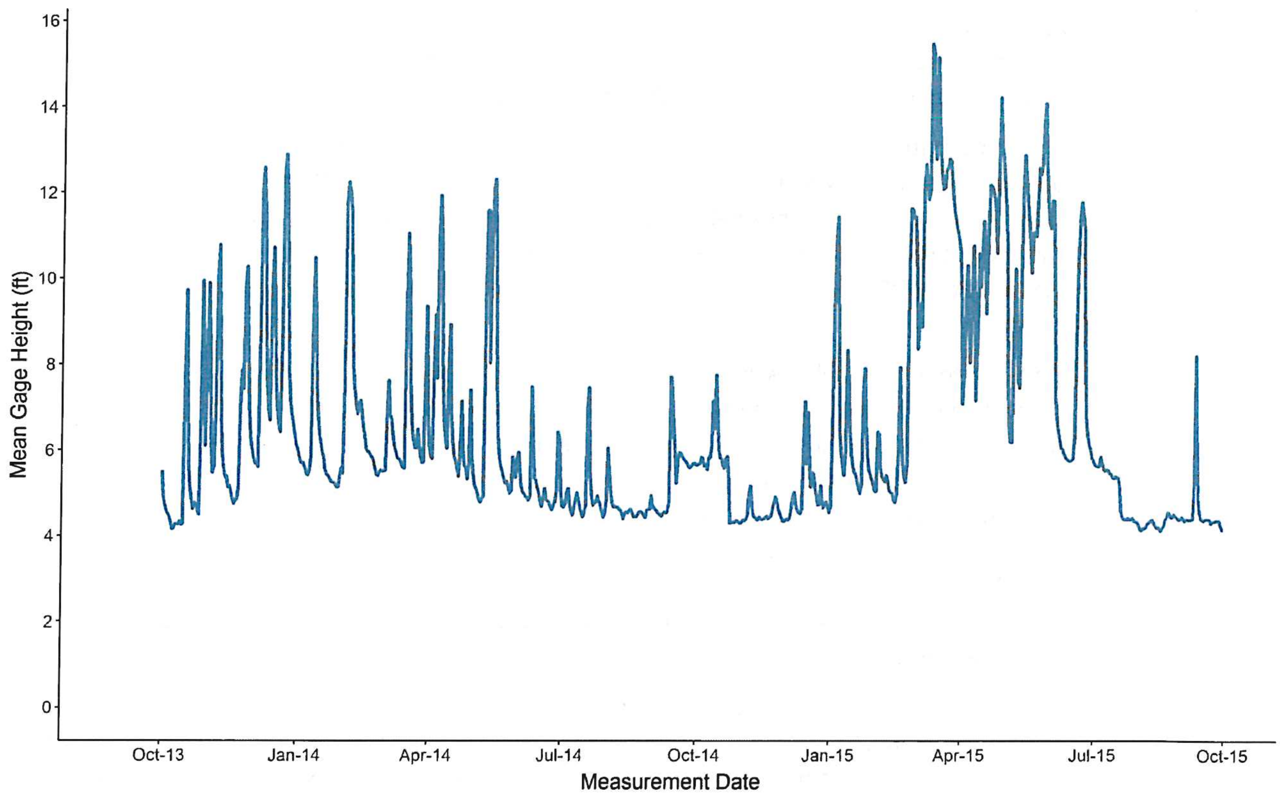


Figure 8 Time Series of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 2014–2015

Discharge data are typically summarized by measures of location (mean or median) and variability (standard deviation or interquartile range). The median, or 50th percentile, is the central value of the distribution when the data are ranked in order of magnitude. For analysis of streamflow data, the median is preferable to the mean because it is not strongly influenced by the relative few extreme observations - such as short-duration high flow events. The 75th, 50th (median) and 25th percentiles split the data into four equal-sized quarters. The 75th percentile, also called the upper quartile, is a value which exceeds no more than 75 percent of the data and is exceeded by no more than 25 percent of the data. The 25th percentile, or lower quartile, is a value which exceeds no more than 25 percent of the data and is exceeded by no more than 75 percent. The interquartile range (IQR), defined as the 75th percentile minus the 25th percentile, measures the range of the central 50 percent of the data. Unlike the standard deviation, the IQR is not strongly influenced by outlying values, so IQR is the preferred measure of the variability of streamflow data (Helsel and Hirsch, 2002).

Summary statistics are presented using boxplots, also known as box-and-whisker plots, providing visual summaries of the median (center line of the box), IQR (box height), quartile skew (relative size of the box halves), and outliers (not shown). Whiskers are lines drawn from the ends of the box to the last observation within one step (1.5 times the height of the box, i.e., 1.5 times the IQR) beyond either end of the box. Boxplots allow for visual comparison of groups of data.

Boxplots for mean daily discharge and mean daily gage height are presented in Figures 9 and 10, respectively. These boxplots clearly show the decline in median and higher flows observed in the more recent record. However, it should be noted that the recent period of streamflow observations comprises only seven years of observations, including a period of extended severe drought with five years below the median and three years at or below the 10^{th}-percentile. The recent period also includes the year with the highest total annual flow observed in 2016. Flow duration curves are presented in Figures 11 and 12 for the two time periods. These curves allow for inspection of the overall behavior of flows at the gage location; however, temporal trends are lost when portrayed in terms of frequency.

Discharge data for Big Cypress Creek were also summarized by month to analyze the seasonal variation in flows. Summary statistics of daily mean observations by month are presented in Tables 4 and 5 for streamflow and gage height, respectively. Table 4 also includes a summary of annual discharge in acre-feet. Monthly boxplots for mean daily discharge and mean daily gage height are presented in Figures 13 and 14, respectively. These figures illustrate the seasonality of flow with discharge being much higher in the winter and spring months (December through May) and much lower flows occurring during the summer and fall (June through November). The boxplot in Figure 15 illustrates the large variation in total annual discharge, with the highest years being more than 50 times greater than the lowest.

In Texas, the seven-day, two-year low-flow (7Q2) is often applied as a low-flow frequency statistic for water quality analyses and permitting. The 7Q2 is defined as the annual lowest mean discharge for 7 consecutive days with a 2-year recurrence interval. The 7Q2 for Big Cypress Creek near Pittsburg based on the complete period of record was calculated to be 3.64 cfs, or about 50 percent of the lower hexile flow reported in Table 2.

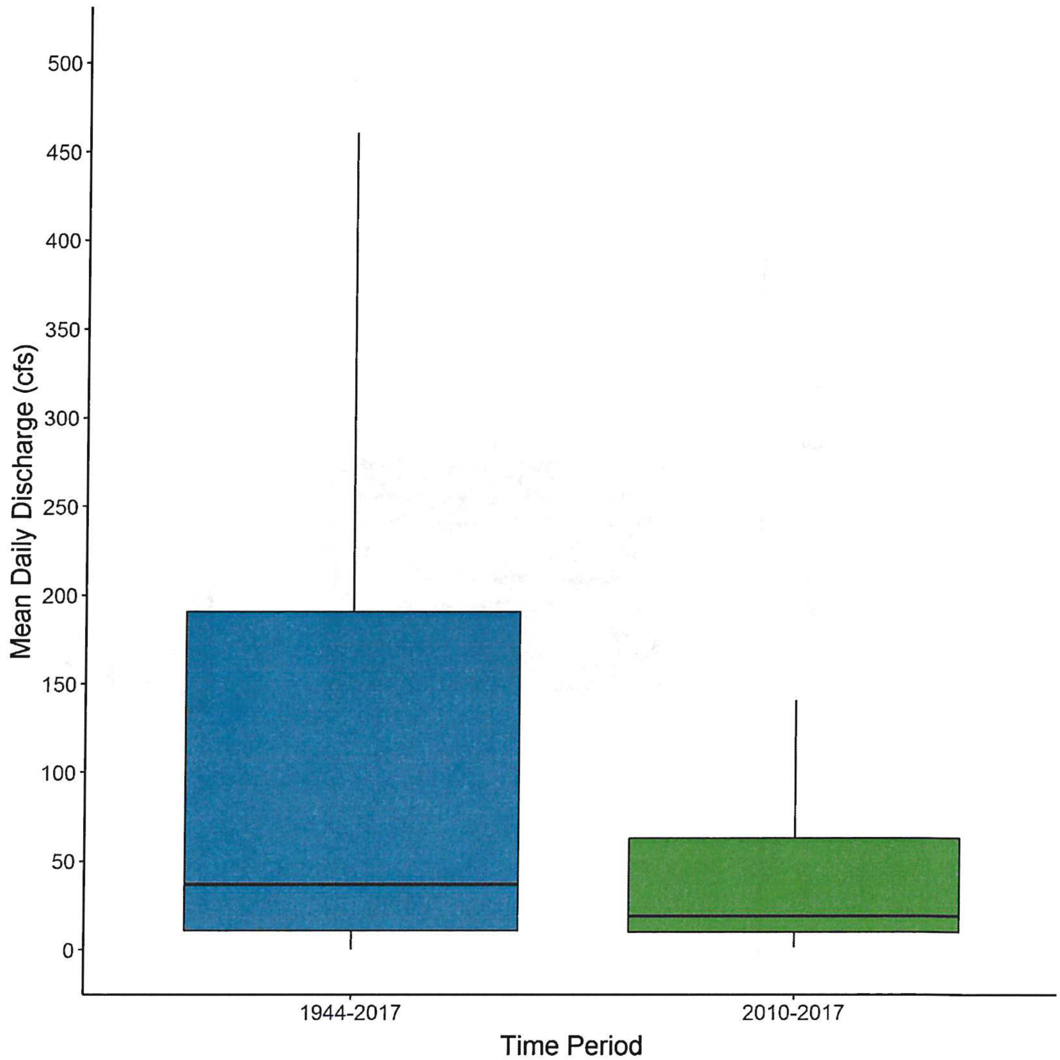


Figure 9 Boxplots of Mean Daily Discharge for Big Cypress Creek near Pittsburg

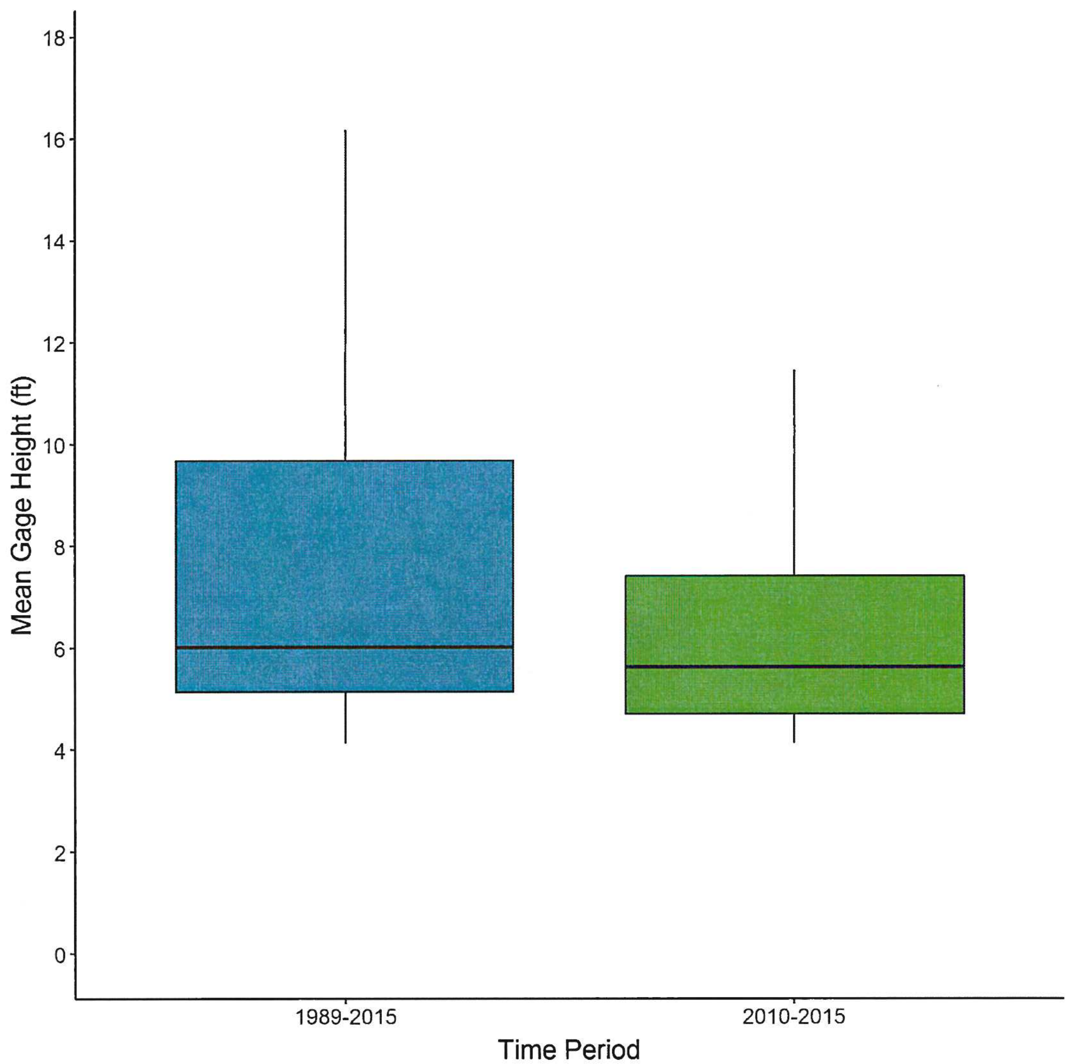


Figure 10 Boxplots of Mean Daily Gage Height for Big Cypress Creek near Pittsburg

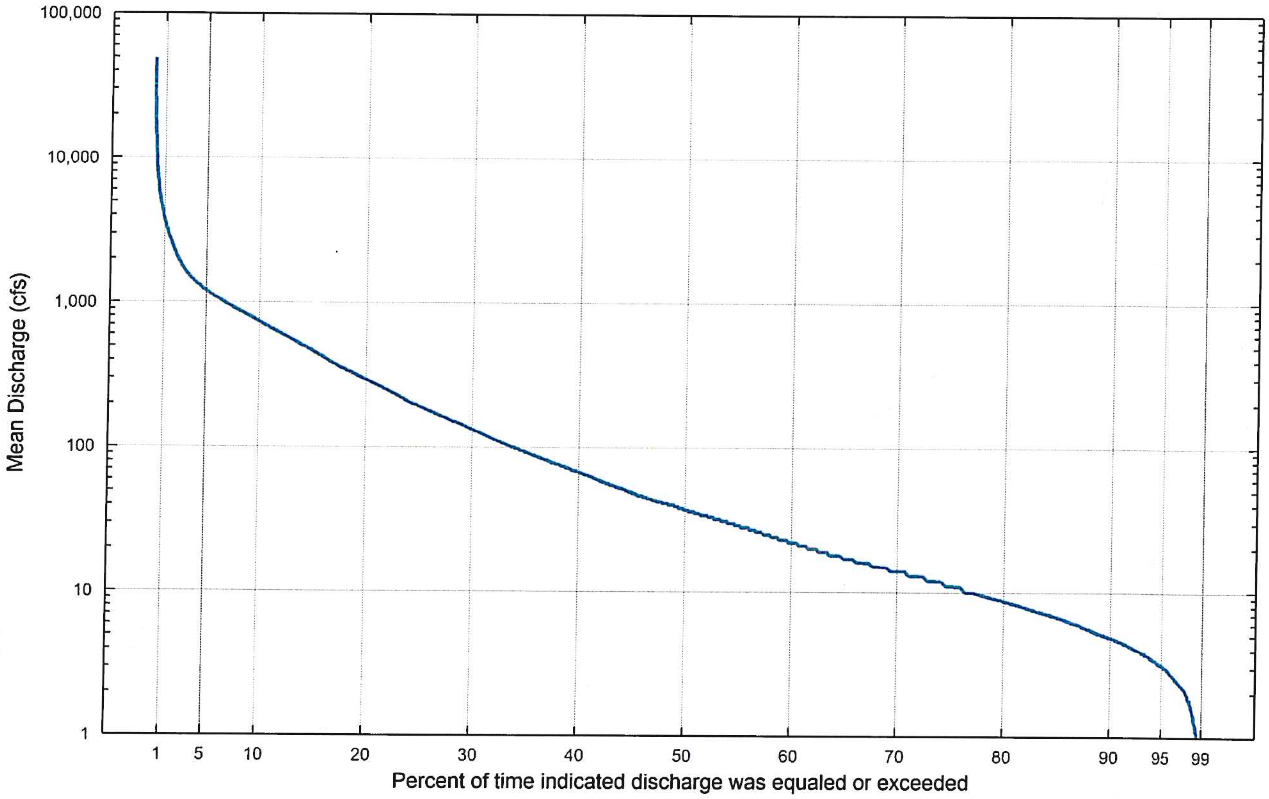


Figure 11 Flow Duration Curve for Big Cypress Creek near Pittsburg, 1944–2017

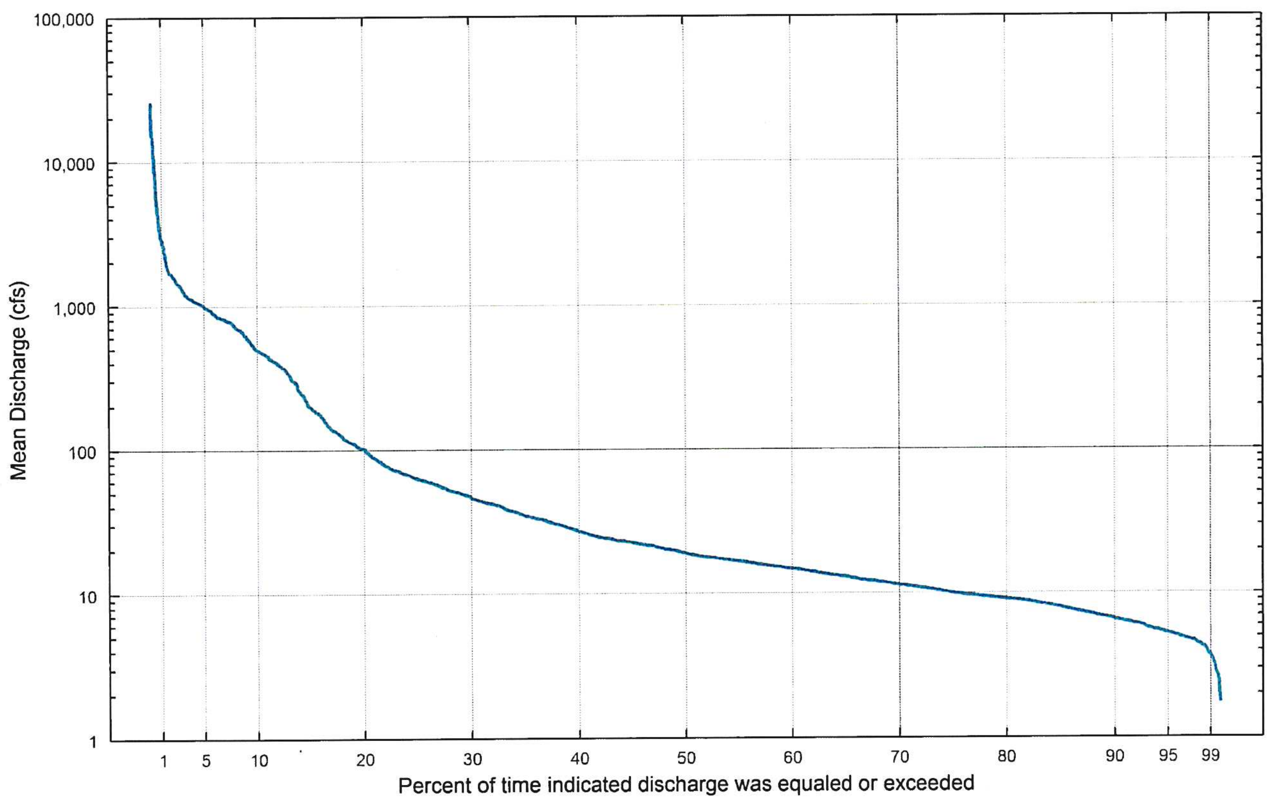


Figure 12 Flow Duration Curve for Big Cypress Creek near Pittsburg, 2011–2017

Table 4 Summary Statistics of Daily Mean Discharge (cfs) by Month for Big Cypress Creek near Pittsburg, 1944–2017

Month	N (days)	Min	Lower Hexile	Lower Quartile	Median	Upper Quartile	Upper Hexile	Inter-Quartile Range	Max
January	1488	5.4	20	29	88.5	352	589	323	8,920
February	1357	11.5	37	60	147	500	730	440	15,500
March	1488	11.3	44	65.5	198	601	868	536	48,900
April	1440	6.1	25	39	140	479	733	440	31,300
May	1488	3.9	17	28	84.5	450	835	422	21,200
June	1440	0.5	9.0	13	33.8	132	277	119	21,000
July	1488	0	5.0	6.47	13	35	60	29	2,200
August	1488	0	3.2	4.2	7.3	15	20	11	686
September	1440	0	3.0	3.9	7.39	17.4	29	14	7,140
October	1488	0	3.9	5.2	11	29.2	48	24	12,500
November	1440	0	8.0	10	28	97	208	87	9,250
December	1488	1.3	14	19	67	262	536	243	26,000
Annual (AF)	48	11,700	89,100	123,000	175,400	250,300	308,400	127,300	596,000

Table 5 Summary Statistics of Daily Mean Gage Height (ft) by Month for Big Cypress Creek near Pittsburg, 1989–2015

Month	N (days)	Min	Lower Hexile	Lower Quartile	Median	Upper Quartile	Upper Hexile	Inter-Quartile Range	Max
January	341	4.67	5.51	5.92	8.45	11.4	11.9	5.45	15.2
February	312	4.78	5.88	6.31	8.56	11.5	12.3	5.21	15.9
March	341	5.33	6.15	6.66	9.33	12.1	13.0	5.41	17.6
April	330	5.03	5.69	5.83	7.69	10.6	11.7	4.76	15.7
May	341	4.78	5.40	5.59	8.45	11.3	12.4	5.71	21.2
June	330	4.61	5.04	5.15	5.71	8.74	11.2	3.59	19.7
July	341	4.27	4.77	4.83	5.12	5.7	7.26	0.87	15.2
August	341	4.12	4.61	4.68	4.86	5.13	5.31	0.45	12.2
September	330	4.14	4.57	4.65	4.96	5.36	5.69	0.71	11.1
October	341	4.13	4.61	4.68	5.14	5.86	7.60	1.18	16.0
November	330	4.32	5.02	5.45	6.12	9.46	11.2	4.00	18.4
December	341	4.37	5.47	5.68	6.91	11.3	12.3	5.60	16.2

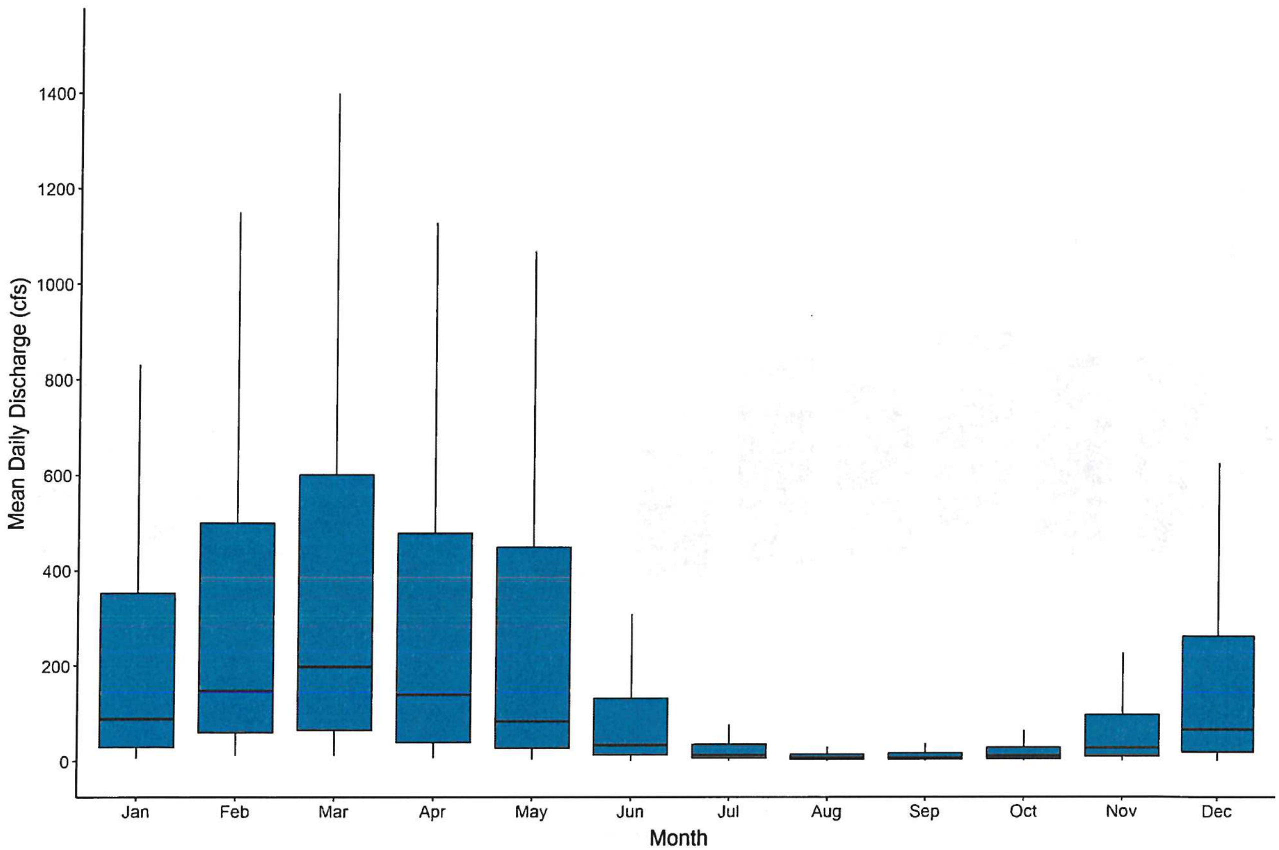


Figure 13 Monthly Boxplots of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 1944–2017

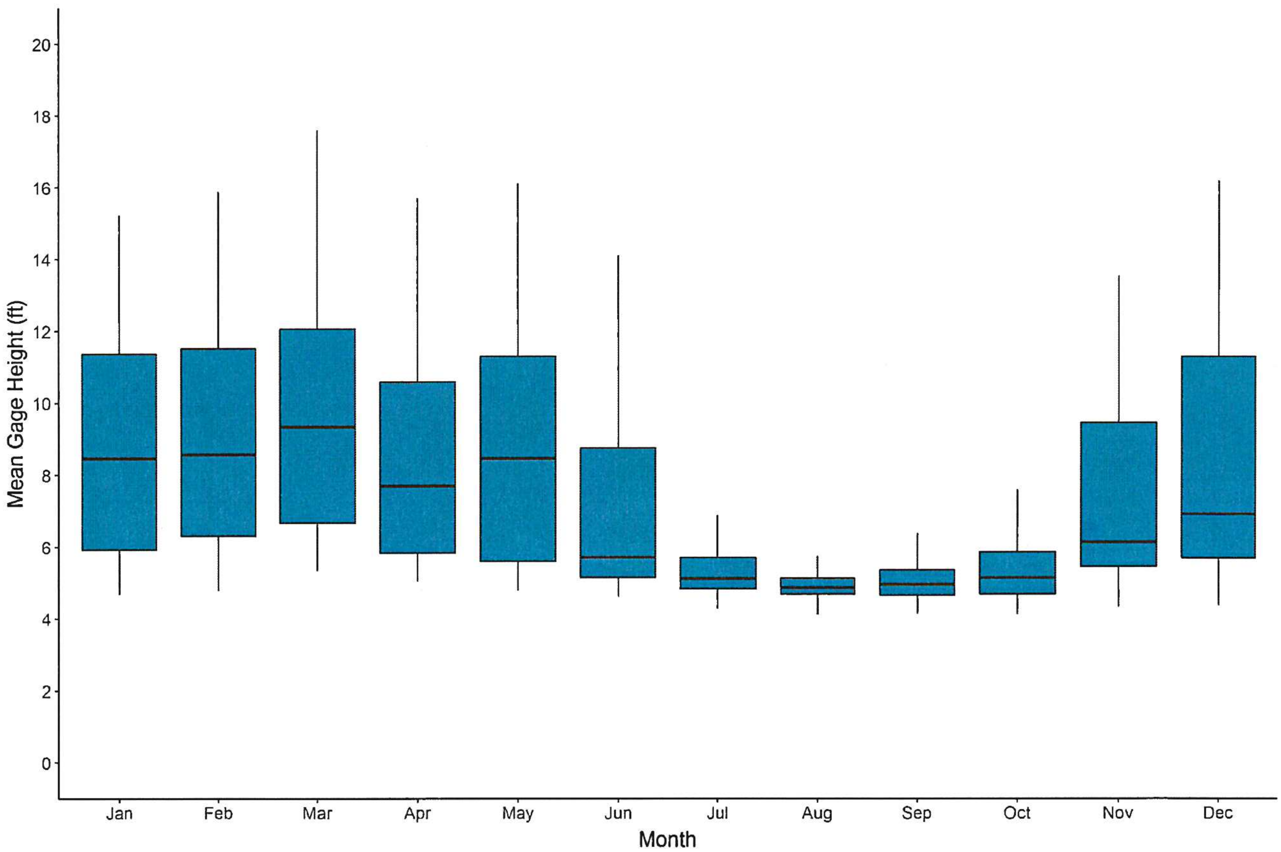


Figure 14 Monthly Boxplots of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 1989–2015

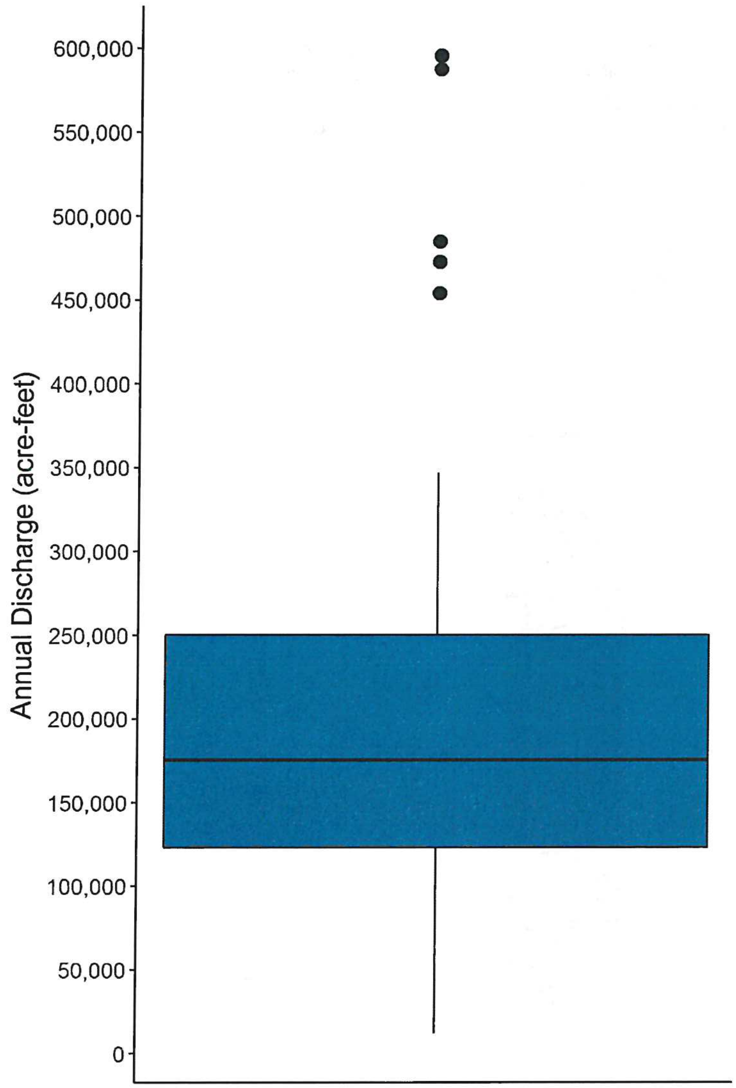


Figure 15 Boxplot of Annual Discharge for Big Cypress Creek near Pittsburg, 1944–2017

3.3.2 Synthetic Hydrologic Records for Key Locations

Synthetic hydrologic records have been developed from the observed daily average flows at the USGS gage location using a drainage area ratio method. Using this method, a daily average flow at the upstream location was estimated from the gaged flow by multiplying the gaged flow by the drainage area ratio of the upstream location to the gage location. A comparison of summary flow statistics for the observed and estimated hydrologic records is provided in Table 6. Figure 16 illustrates the relative magnitudes of various flow statistics at these locations (note the ordinate-axis has been truncated at 50 cfs).

Table 6 Summary Statistics of Daily Mean Streamflow (cfs)

Location	Maximum	Upper Hexile	Average	Median	Lower Hexile	Minimum
USGS Gage 07344500	48,900	384	286	37	7.3	0
Tankersley Creek at Pilgrim's Pride Discharge	2,890	22.7	16.9	2.2	0.4	0
Pit G-129 Discharge to Dragoo Creek	168	1.3	1.0	0.1	0	0

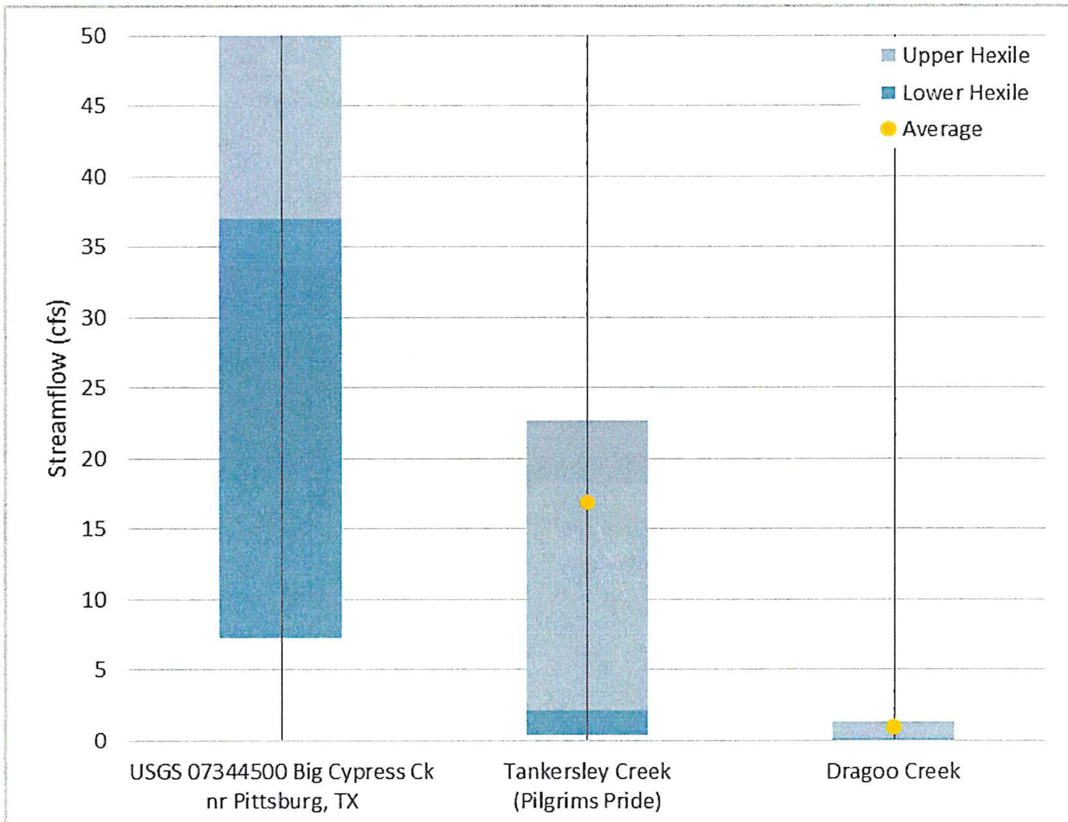


Figure 16 Comparison of Daily Average Flow Statistics between Big Cypress Creek near Pittsburg, Tankersley Creek, and Dragoo Creek

3.4 Impoundment Characteristics

At the outset of this study, several calls were held between Carollo and Luminant staff. Through the course of these discussions, Luminant indicated that the final configuration of the pit, were it to be ultimately used for the purposes described herein, would likely differ from the existing configuration because the pit would need to be finalized to stabilize side slopes and optimize storage volume. Luminant noted and provided data for three final discharge ponds representing the best projection of the water quality expected at Pit G-129 once reclamation is complete and the pit is filled to capacity.

The estimated final pit configuration was also provided by Luminant (see Figure 17) along with tabular data that were used to develop a relationship between the final pit configurations elevation, area, and capacity for quantifying the storage capability of the final pit. This relationship was then utilized to formulate inputs into subsequent modeling of water availability and storage, reported in detail later herein.

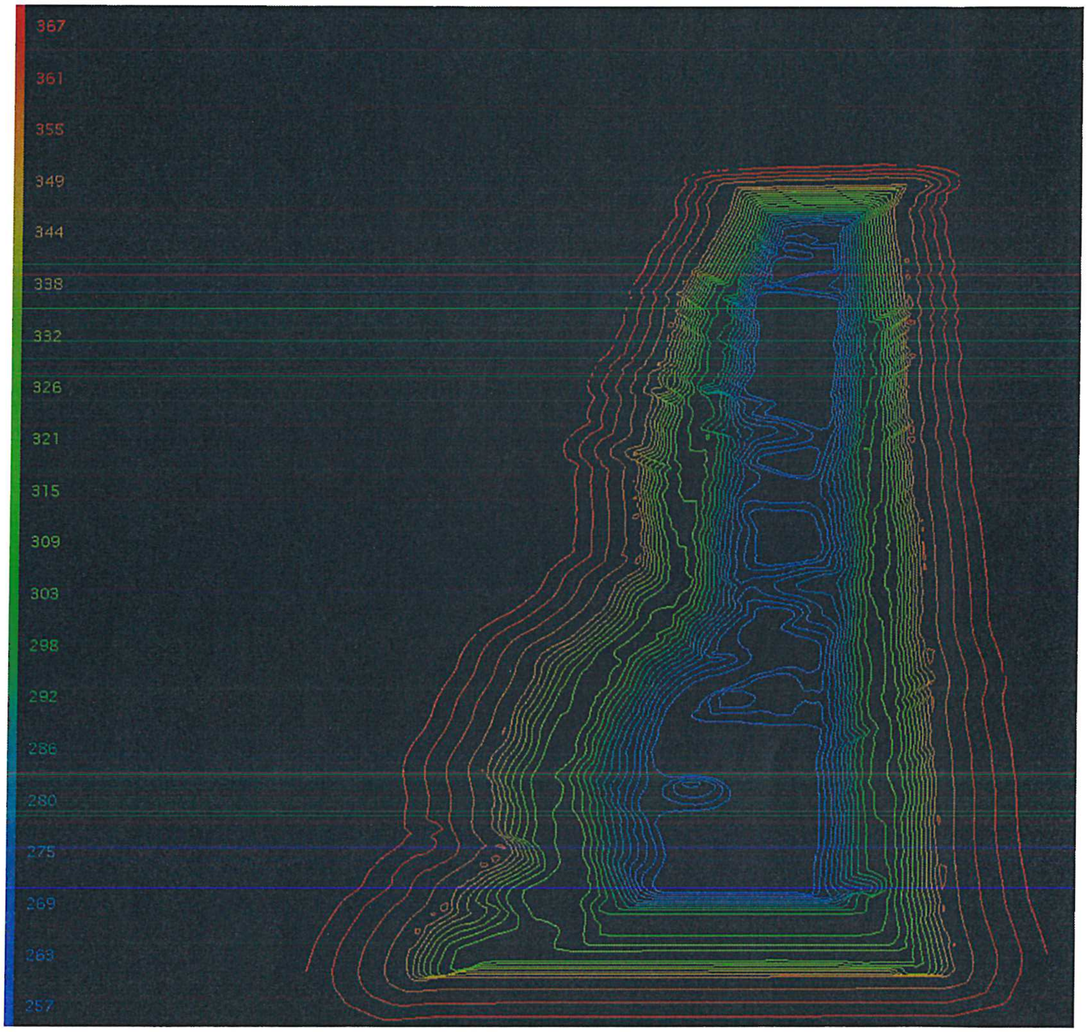


Figure 17 Planned Final Bathymetry for Pit G-129 (as provided by Luminant for this study)

As currently configured, pit G-129 has a volume of 5,480 ac-ft with a surface area of 81.7 acres. Average natural discharge from the pit to Tankersley Creek is 1.1 mgd, but discharge can be increased to 2.2 mgd for one year.

After closure of the mining operations, Pit G-129 will have a planned storage capacity of 5,355 ac-ft and surface area of 98 acres when full. Relations for storage volume and surface area with elevation are shown in Figure 18.

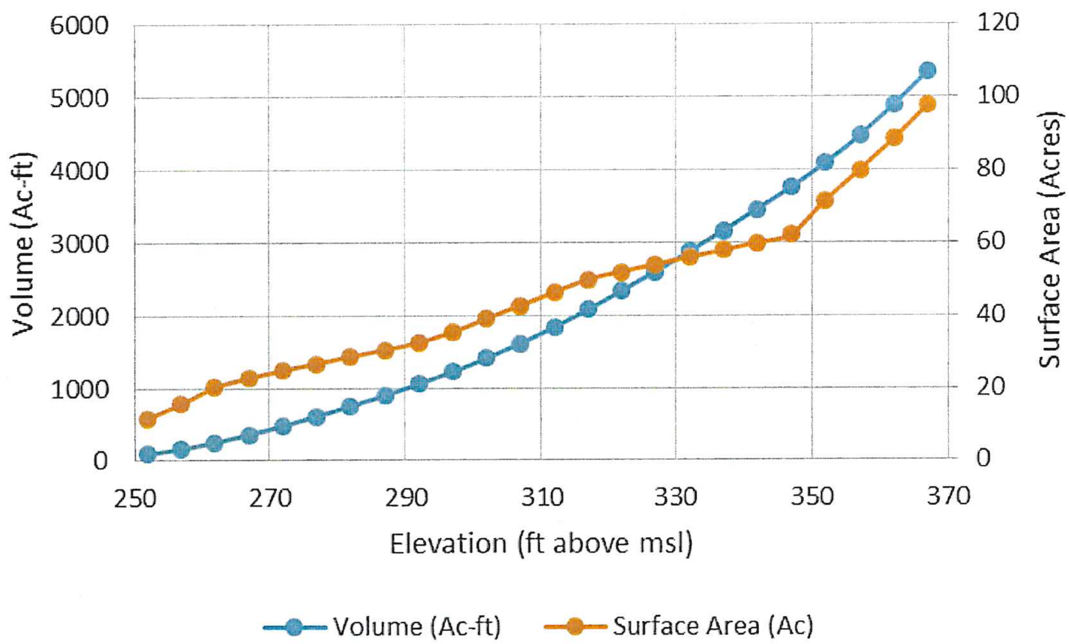


Figure 18 Elevation-Area-Capacity Chart for Pit G-129

3.5 Water Availability Modeling

3.5.1 Description

The official Water Availability Model (WAM) for the Cypress Creek Basin was obtained from TCEQ and used to evaluate water availability, firm supply, and reliability of potential and existing water rights. The input files for Cypress Basin WAM Run 3 were obtained on August 17, 2018 with a version date of June 18, 2015. Information from the Cypress Basin WAM Run 8 dated January 13, 2010 was also utilized in developing the model scenarios described in the following sections.

The hydrologic analysis period for the Cypress Creek Basin WAM spans from January 1948 to December 1998. The specific WAM scenarios employed for this effort were the Full Authorization (Run 3) and Current Conditions (Run 8) models with minor modifications as described below. The Full Authorization model represents full implementation of existing water rights, 100 percent reuse, and original reservoir storage capacities. WAM Run 3 represents the current state of water development from a legal, regulatory standpoint because it depicts conservative conditions that would be expected if all users fully exercised their current legal surface water permits. This scenario is used and maintained by TCEQ specifically for surface water right permitting and regulatory determinations of water availability.

The Current Conditions (WAM Run 8) model shows the amount of water that would remain available for appropriation if all permitted water rights holders withdrew the amount of water they are currently using, based generally on the maximum use in a recent ten-year period and minimum return flows over a recent five-year period; thus, return flows are included in this scenario as a means of depicting a more realistic characterization of water availability. A third scenario also evaluated as part of this analysis is a hybrid of the Full Authorization and Current Conditions models using the Full Authorization model and adding current return flows upstream of Lake O' The Pines.

The most recent version of the Water Rights Analysis Package (WRAP) simulation software, developed and maintained by Texas A&M University, dated May 2018, was used for all analyses in this study (Wurbs, 2018). WRAP performs priority-based water accounting computations for each water right and control point in monthly time steps throughout the period of analysis. This water accounting system tracks the effects of reservoir storage, net reservoir evaporation, instream flow requirements, diversions, and return flows on streamflow data.

WRAP simulates specified water management and use scenarios using a repetition of historical hydrology represented by sequences of monthly naturalized streamflows and reservoir net evaporation–precipitation rates covering the hydrologic period of analysis (Wurbs, 2018). Naturalized flows can be characterized as those flows that would have occurred historically, in the absence of water management activities such as consumptive diversions and discharges back to the watercourse.

3.5.2 WAM Modifications

The TCEQ WAM input files for Run 3 and Run 8 scenarios were modified for this study to include the impoundment location and additional key locations regarding discharges and flow analysis. These locations were added to the WAM as control points, shown in Figure 19, specifically located at the impoundment location, the Pilgrim's Pride Southwest WWTP TPDES permitted discharge location on Tankersley Creek, and at a location on Tankersley Creek immediately upstream of the confluence with Big Cypress Creek. These additional control points allow model results to be processed and impacts of the project quantified at these locations. Detailed WAM modifications are provided in Appendix C.

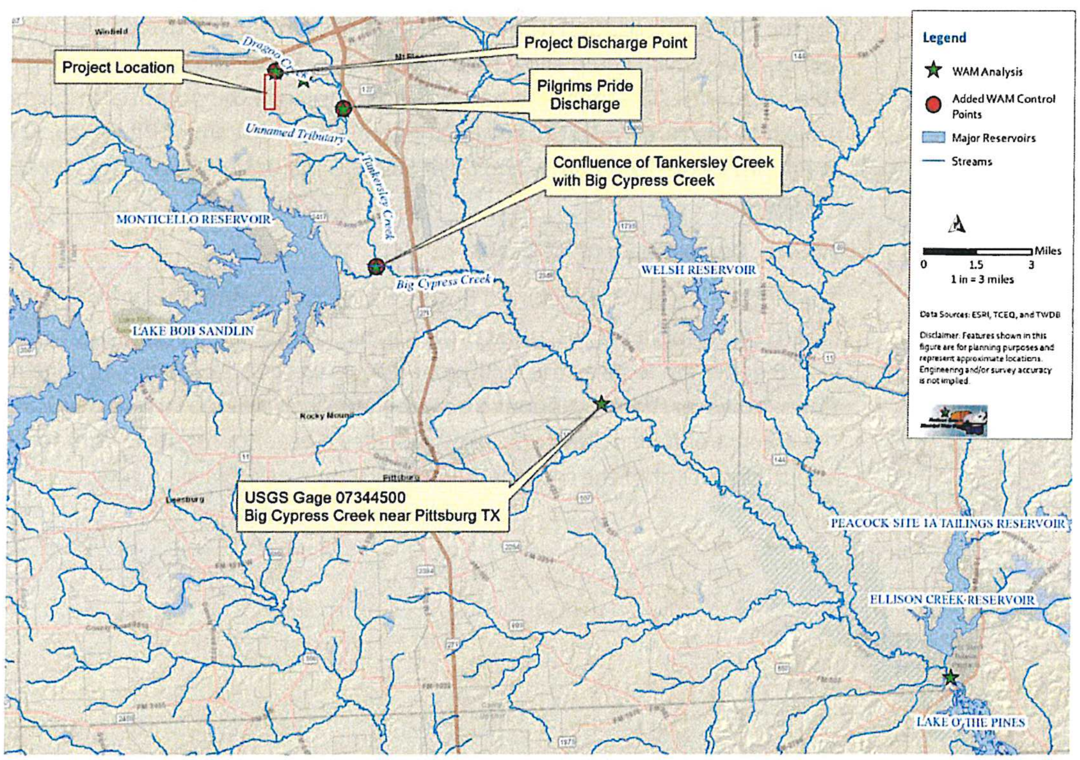


Figure 19 WAM Modifications and Analysis Points

3.5.3 Scenarios

The Baseline WAM against which all other scenarios are compared is the TCEQ Run 3 model with the addition of the three aforementioned Control Points. This scenario provides a history of regulated flows in the basin that represents water availability with full implementation of all water rights. A modified Run 3 model was created by adding in the proposed Pit G-129 impounding and operationally releasing flows into Dragoo Creek to determine the firm yield of the project and evaluate impacts of the project on downstream flows. The Run 3 model was run with and without the project to generate a baseline of simulated monthly flows at all control points in the model, thus allowing comparison of results with the pit storage project in operation. Additional simulations, referred to herein as optimized release scenarios, were developed from the Run 3 model to evaluate discharge from the pit at critical periods of low flow in the receiving stream. The details for these simulations are explained in subsequent sections of this report.

The scenarios developed to evaluate current conditions, i.e., WAM Run 8, were created by adding the permitted TPDES Discharges (return flows) using the values specified in CI (Constant Inflow) records from the Cypress WAM Run 8 input files dated January 13, 2010. For the Current Conditions scenario, Pilgrim's Pride return flows were set equal to the 10-year minimum discharge from the Pilgrim's Pride Southwest WWTP; for the Permitted Conditions scenario, Pilgrim's Pride return flows were set equal to the permitted discharge of 3.5 mgd. Similar to the Run 3 model, these scenarios were run with and without the project to allow quantitative assessment of the downstream impacts of the project.

3.5.4 Model Results

For the Full Authorization (Run 3) scenario, the firm yield of the pit was calculated to be 480 ac-ft/yr, which could allow for a constant diversion and discharge of approximately 40 ac-ft/month. The following paragraphs summarize the potential impacts and benefits of the project at the three selected key locations: (1) downstream of Pit G-129; (2) on Tankersley Creek at Pilgrim's Pride Discharge; and (3) at USGS Gage 07344500 on Big Cypress Creek near Pittsburg.

3.5.4.1 Downstream of Pit G-129

The WAM-simulated (regulated) flow duration curves downstream of Pit G-129 are shown in Figure 20. At higher flows, greater than about the 30^{th}-percentile, impoundment of water in Pit G-129 generally reduces the volume of flow as water is taken into storage in the pit. At lower flows, however, the continuous discharge of stored water at a rate of 40 ac-ft/month increases the volume of flow downstream and provides a baseflow of 40 ac-ft/month downstream for about 11 percent of the months when flow would otherwise be zero.

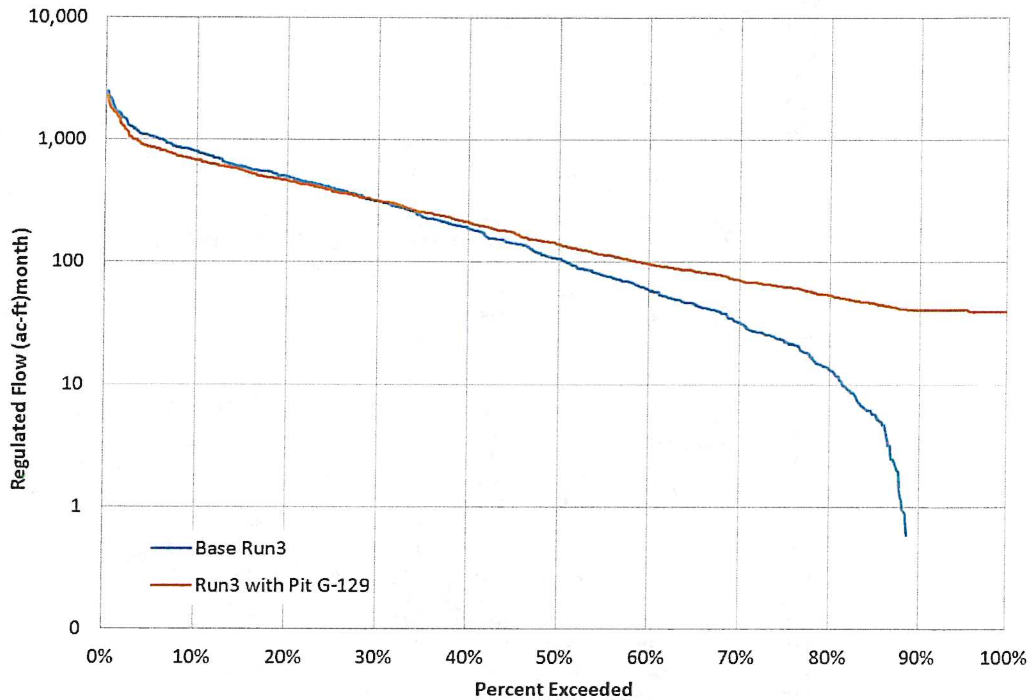


Figure 20 Regulated Flow Duration Curves Downstream of Pit G-129 for Baseline Scenario

Two additional figures are provided to help visualize the downstream impacts of impoundment and discharge. Figure 21 is a heat map showing the relative percentage change in regulated flow downstream of Pit G-129 for each month of the historical simulation period, and Figure 22 shows monthly statistics of the regulated flows with and without the project. From the heat map in Figure 21, flows are reduced by the project in less than half of the winter and spring months (December through May) by an average of 18 percent. Conversely, the project provides an average increase in monthly flow of 32 percent annually with increased flows occurring in 91 percent of the summer and fall months that are typically characterized by lower flows. During the summer months of July, August, and September, 100 percent of the modeled regulated flow is provided by the project discharge in 31 percent of the months in the simulation period while more than half the regulated flow comes from the project in 70 percent of the months.

The significant increase in flow provided by the project during the summer months is also apparent in the monthly statistic chart shown in Figure 22. The most striking example is the month of August where the median flow with the project (48 ac-ft/month) is greater than the upper hexile (83rd-percentile) flow without the project (44 ac-ft/month).

Year	Month 1	2	3	4	5	6	7	8	9	10	11	12
1948	1%	-1%	-3%	-3%	0%	49%	66%	87%	82%	83%	57%	54%
1949	5%	7%	-24%	-14%	-1%	35%	49%	75%	51%	2%	18%	-7%
1950	-24%	-21%	-3%	0%	0%	-3%	30%	41%	-20%	44%	51%	46%
1951	13%	-23%	-2%	7%	10%	31%	33%	93%	68%	74%	54%	45%
1952	14%	27%	11%	-24%	-17%	10%	71%	95%	100%	98%	39%	10%
1953	17%	12%	16%	-14%	-24%	73%	27%	68%	36%	76%	50%	13%
1954	7%	19%	37%	39%	7%	25%	97%	100%	100%	66%	63%	37%
1955	40%	21%	11%	10%	60%	77%	98%	62%	75%	38%	88%	66%
1956	65%	8%	46%	61%	23%	98%	100%	100%	100%	100%	95%	87%
1957	78%	39%	11%	3%	-46%	-25%	73%	85%	35%	14%	-29%	-5%
1958	-19%	18%	-16%	-25%	-25%	-12%	-7%	42%	6%	50%	10%	21%
1959	42%	-13%	-18%	-16%	8%	43%	31%	60%	64%	66%	46%	7%
1960	-25%	-14%	-15%	37%	43%	23%	17%	84%	31%	32%	32%	-30%
1961	-16%	-16%	-17%	-7%	39%	-10%	14%	62%	59%	70%	16%	-18%
1962	-16%	-16%	-17%	-13%	-3%	34%	49%	90%	46%	56%	25%	26%
1963	20%	28%	15%	19%	12%	63%	100%	100%	100%	89%	100%	76%
1964	62%	41%	18%	17%	28%	60%	100%	52%	49%	71%	68%	47%
1965	24%	5%	11%	26%	10%	18%	87%	86%	85%	100%	94%	100%
1966	59%	27%	35%	2%	-44%	37%	95%	93%	53%	57%	44%	33%
1967	25%	35%	27%	9%	8%	10%	65%	83%	76%	95%	42%	13%
1968	7%	11%	-36%	-15%	-29%	-18%	40%	62%	16%	56%	17%	7%
1969	6%	-29%	-22%	-17%	-22%	51%	81%	88%	87%	87%	55%	34%
1970	23%	12%	-32%	-20%	20%	41%	79%	81%	90%	62%	56%	60%
1971	49%	23%	29%	56%	63%	89%	32%	47%	92%	81%	34%	5%
1972	7%	19%	26%	50%	60%	30%	18%	87%	100%	49%	16%	10%
1973	8%	8%	-38%	-30%	11%	-19%	63%	74%	41%	13%	-23%	-19%
1974	-18%	-10%	20%	-24%	21%	-20%	75%	37%	-22%	-4%	-23%	-21%
1975	-16%	-23%	-22%	-17%	-23%	-6%	46%	54%	88%	81%	73%	61%
1976	60%	28%	7%	13%	-28%	47%	18%	75%	82%	100%	100%	45%
1977	47%	6%	-25%	-23%	45%	68%	100%	74%	100%	100%	46%	48%
1978	22%	21%	10%	58%	21%	100%	100%	100%	100%	100%	45%	56%
1979	6%	9%	-35%	-25%	-19%	12%	33%	-7%	-22%	72%	27%	-6%
1980	-20%	-18%	-8%	-20%	-18%	39%	100%	100%	48%	63%	58%	32%
1981	49%	23%	21%	62%	5%	-36%	22%	100%	100%	9%	21%	60%
1982	26%	14%	15%	12%	-27%	8%	38%	100%	100%	100%	22%	2%
1983	19%	-16%	-21%	-3%	9%	38%	100%	100%	100%	82%	100%	51%
1984	44%	18%	17%	34%	100%	100%	100%	100%	100%	7%	14%	8%
1985	23%	4%	7%	-26%	-26%	28%	100%	100%	100%	32%	23%	5%
1986	36%	-29%	34%	9%	-13%	-16%	100%	100%	86%	84%	47%	19%
1987	18%	-5%	-26%	34%	100%	33%	66%	100%	100%	100%	16%	-26%
1988	-20%	-18%	-17%	-9%	73%	100%	100%	100%	100%	99%	6%	14%
1989	11%	-29%	-19%	-17%	-23%	-14%	47%	100%	100%	100%	100%	79%
1990	10%	8%	-27%	-22%	-20%	16%	100%	45%	40%	64%	8%	-21%
1991	-22%	-20%	-15%	-15%	-22%	-15%	45%	100%	65%	28%	9%	-21%
1992	-13%	-19%	-22%	26%	17%	-20%	-21%	14%	27%	100%	13%	-22%
1993	-22%	-17%	-20%	-15%	-5%	-3%	94%	68%	77%	6%	22%	-11%
1994	-5%	-19%	-19%	18%	-10%	32%	-19%	100%	100%	12%	-23%	-21%
1995	-24%	22%	-15%	-19%	-20%	30%	47%	97%	89%	100%	100%	65%
1996	35%	47%	44%	27%	51%	36%	69%	22%	26%	17%	8%	9%
1997	11%	-34%	-22%	-21%	-6%	-15%	21%	44%	100%	60%	33%	11%
1998	-22%	-18%	-16%	19%	88%	100%	100%	100%	17%	14%	15%	6%

-100% 0% 100%

Figure 21 Regulated Flow Heat Map Downstream of Pit G-129 for Baseline Scenario

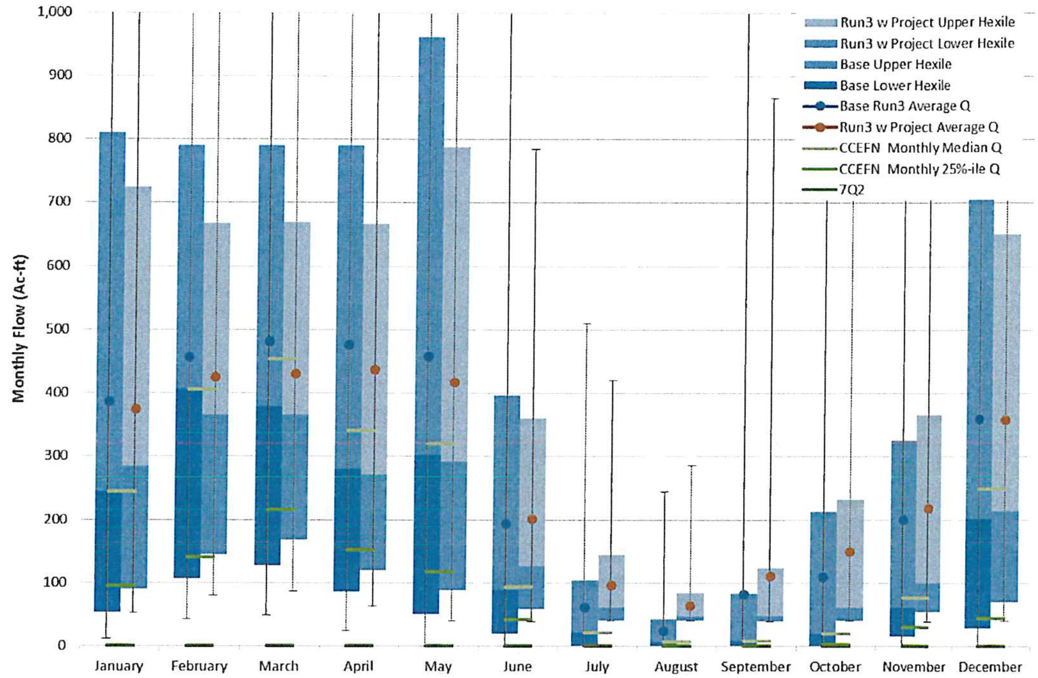


Figure 22 Monthly Statistics of Regulated Flow Downstream of Pit G-129 for Baseline Scenario

3.5.4.2 Tankersley Creek at Pilgrim's Pride Discharge

The WAM-simulated (regulated) flow duration curves for Tankersley Creek at the Pilgrim's Pride discharge location are shown in Figure 23, with scaled views presented in Figure 24. At higher flows, greater than about the 23rd-percentile, impoundment of water in Pit G-129 generally reduces the volume of flow as water is taken into storage in the pit, as shown in Figure 24(a). A transition from high flow to low flow occurs in the range from about the 25th-percentile to the 40th-percentile, as shown in Figure 24(b) where the impoundment does not have a significant impact on flows. At lower flows, from about the median flow and lower as shown in Figure 24(c), the continuous discharge of stored water at a rate of 40 ac-ft/month increases the volume of flow downstream and provides a baseflow of 40 ac-ft/month downstream. In this scenario, constant discharge from the pit provides a continuous baseflow for about 11 percent of the months when flow would otherwise be zero. Note that discharges from the Pilgrim's Pride Southwest WWTP are not included in the Run 3 simulations.

From the heat map in Figure 25, flows are reduced by the project in less than half of the winter and spring months (December through May) by an average of only 4 percent. Conversely, the project provides an average increase in monthly flow of 23 percent with increased flows occurring in 91 percent of the summer and fall months characterized by lower flows. During the summer months of July, August, and September, 100 percent of the regulated flow is provided by the project discharge in 31 percent of the months in the simulation period while more than half the regulated flow comes from the project in 50 percent of the months.

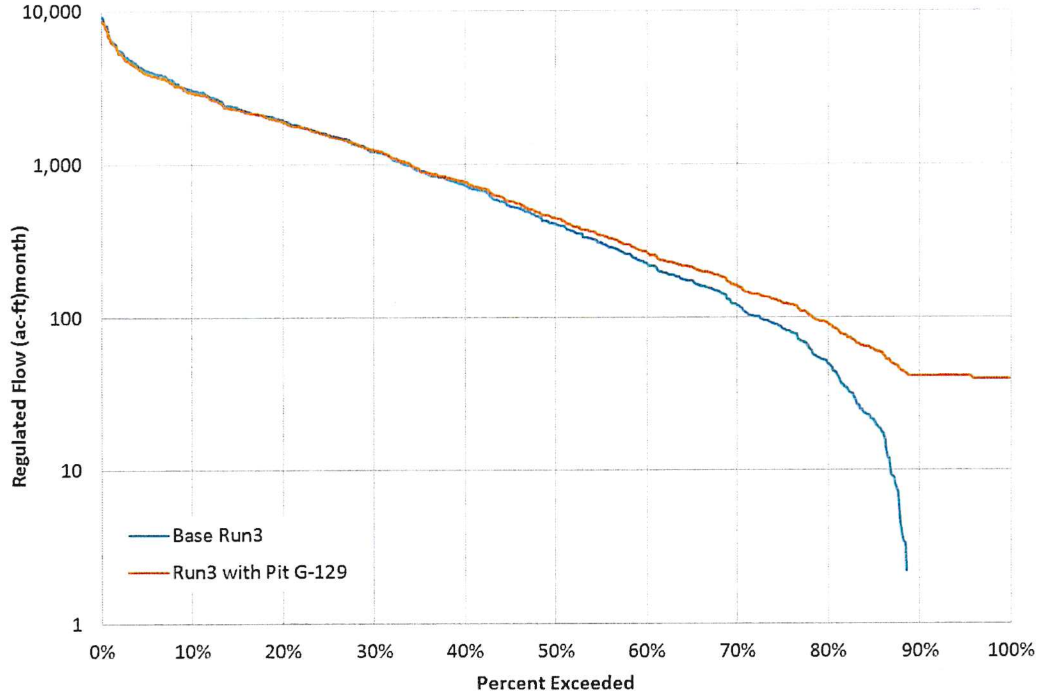


Figure 23 Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Baseline Scenario

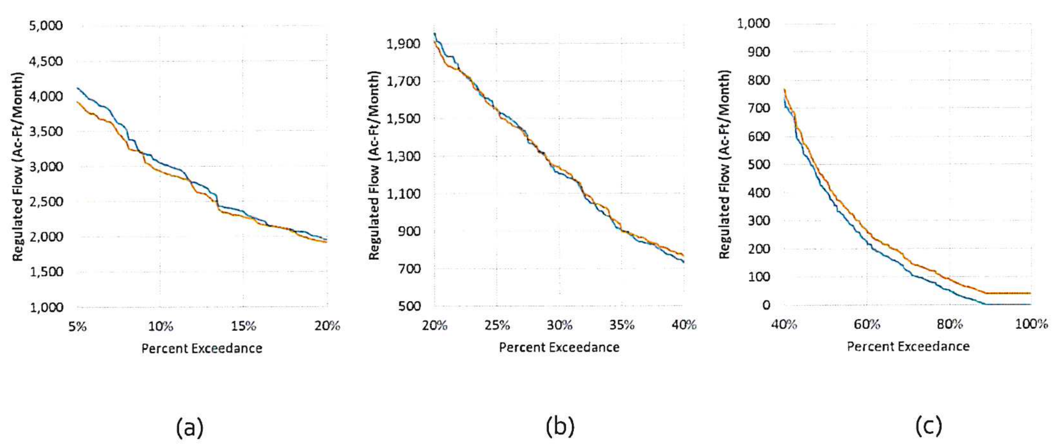


Figure 24 Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Baseline Scenario

	Month											
Year	1	2	3	4	5	6	7	8	9	10	11	12
1948	0%	0%	-1%	-1%	0%	20%	34%	64%	54%	56%	26%	24%
1949	1%	2%	-4%	-3%	0%	13%	21%	44%	22%	1%	3%	-2%
1950	-5%	-5%	-1%	0%	0%	-1%	10%	16%	-4%	17%	22%	19%
1951	4%	-5%	-1%	2%	2%	11%	12%	77%	37%	43%	24%	18%
1952	4%	9%	3%	-5%	-4%	2%	40%	82%	100%	92%	15%	3%
1953	5%	4%	5%	-3%	-5%	41%	9%	36%	13%	45%	21%	4%
1954	2%	6%	14%	14%	2%	8%	89%	100%	100%	34%	31%	14%
1955	15%	7%	3%	3%	28%	47%	92%	30%	45%	14%	66%	34%
1956	34%	2%	18%	29%	7%	92%	100%	100%	100%	100%	83%	64%
1957	48%	15%	3%	1%	-6%	-5%	41%	61%	12%	4%	-6%	-1%
1958	-4%	5%	-4%	-6%	-5%	-3%	-2%	16%	2%	21%	3%	7%
1959	16%	-3%	-4%	-4%	3%	12%	11%	29%	32%	34%	19%	2%
1960	-5%	-3%	-3%	14%	17%	7%	5%	58%	11%	11%	11%	-5%
1961	-4%	-4%	-4%	-1%	15%	-2%	3%	30%	28%	38%	5%	-4%
1962	-4%	-4%	-4%	-3%	-1%	12%	21%	70%	18%	25%	8%	9%
1963	6%	10%	5%	6%	3%	31%	100%	100%	100%	69%	100%	45%
1964	30%	16%	6%	5%	9%	29%	100%	22%	20%	39%	36%	19%
1965	8%	1%	3%	8%	3%	5%	64%	62%	60%	100%	81%	100%
1966	28%	9%	13%	0%	-6%	13%	85%	77%	23%	26%	18%	12%
1967	8%	12%	9%	3%	2%	3%	33%	56%	46%	85%	16%	4%
1968	2%	3%	-5%	-3%	-5%	-3%	15%	31%	5%	25%	5%	2%
1969	1%	-5%	-5%	-4%	-5%	22%	53%	66%	65%	63%	24%	12%
1970	7%	3%	-5%	-4%	4%	16%	50%	53%	72%	30%	25%	28%
1971	20%	7%	10%	25%	31%	69%	11%	19%	75%	54%	12%	1%
1972	2%	6%	9%	21%	29%	10%	6%	63%	100%	21%	5%	3%
1973	2%	2%	-6%	-6%	3%	-4%	31%	43%	15%	4%	-5%	-4%
1974	-5%	-2%	5%	-5%	7%	-4%	44%	13%	-5%	-1%	-5%	-5%
1975	-4%	-5%	-5%	-4%	-5%	-2%	18%	24%	67%	52%	42%	30%
1976	29%	9%	2%	4%	-5%	19%	5%	44%	56%	100%	100%	18%
1977	19%	2%	-5%	-5%	18%	37%	100%	44%	100%	100%	19%	20%
1978	7%	6%	3%	27%	6%	100%	100%	100%	100%	100%	18%	25%
1979	2%	2%	-5%	-5%	-4%	3%	12%	-1%	-5%	41%	9%	-2%
1980	-5%	-4%	-2%	-5%	-4%	15%	100%	100%	20%	31%	27%	11%
1981	20%	8%	7%	30%	1%	-6%	7%	100%	100%	2%	6%	29%
1982	9%	4%	5%	4%	-5%	2%	14%	100%	100%	100%	7%	1%
1983	4%	-4%	-5%	-1%	3%	14%	100%	100%	100%	54%	100%	22%
1984	17%	5%	5%	12%	100%	100%	100%	100%	100%	2%	4%	2%
1985	7%	1%	2%	-4%	-5%	9%	100%	100%	100%	11%	7%	1%
1986	13%	-5%	12%	2%	-3%	-4%	100%	100%	61%	59%	19%	6%
1987	6%	-1%	-6%	12%	100%	12%	34%	100%	100%	100%	5%	-6%
1988	-4%	-4%	-4%	-2%	42%	100%	100%	100%	100%	95%	2%	4%
1989	3%	-5%	-5%	-3%	-5%	-4%	19%	100%	100%	100%	100%	50%
1990	3%	2%	-6%	-5%	-5%	5%	100%	18%	15%	32%	2%	-4%
1991	-5%	-5%	-3%	-4%	-5%	-3%	18%	100%	33%	9%	2%	-5%
1992	-3%	-4%	-5%	9%	5%	-4%	-4%	4%	9%	100%	4%	-5%
1993	-5%	-4%	-5%	-3%	-1%	-1%	82%	37%	47%	2%	7%	-2%
1994	-1%	-4%	-4%	6%	-2%	11%	-4%	100%	100%	3%	-5%	-5%
1995	-5%	7%	-3%	-5%	-5%	10%	19%	91%	68%	100%	100%	33%
1996	12%	19%	17%	9%	22%	13%	38%	7%	9%	5%	2%	2%
1997	3%	-6%	-5%	-5%	-1%	-3%	7%	18%	100%	29%	12%	3%
1998	-5%	-4%	-4%	6%	65%	100%	100%	100%	5%	4%	5%	2%

-100% 0% 100%

Figure 25 Regulated Flow Heat Map at Pilgrim's Pride Discharge for Baseline Scenario

The significant increase in flow provided by the project during the summer months is also apparent in the monthly statistic chart shown in Figure 26, although the results are not as striking as for the location just downstream from the pit because the monthly discharge of 40 ac-ft is much lower in comparison to typical regulated flows at the Pilgrim's Pride discharge location.

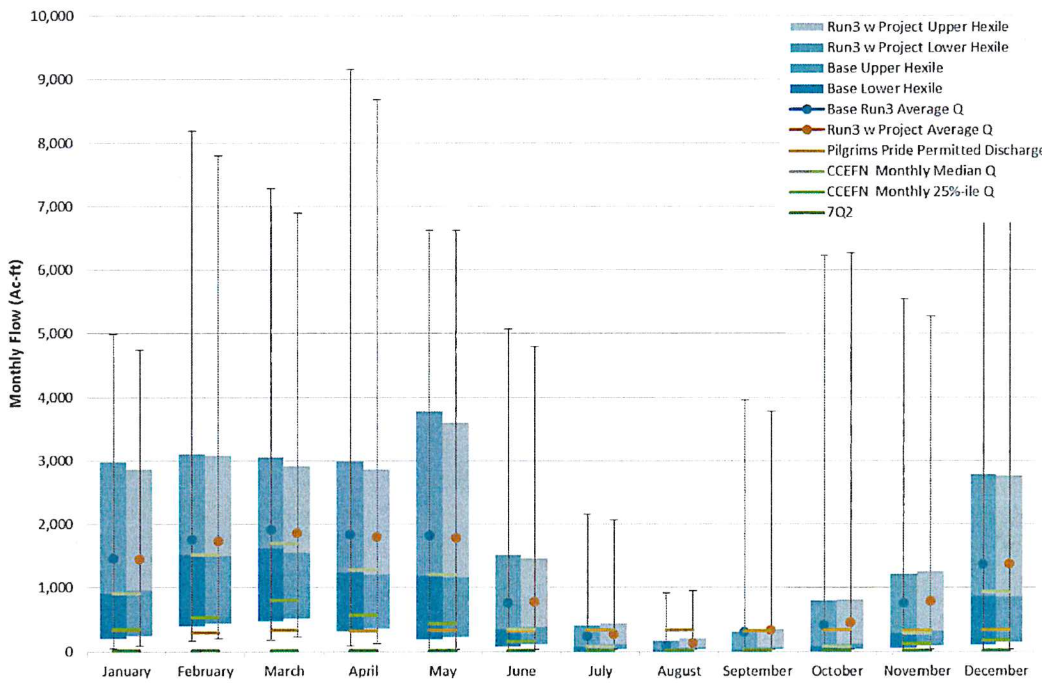


Figure 26 Monthly Statistics of Regulated Flow at Pilgrim's Pride Discharge for Baseline Scenario

3.5.4.3 Big Cypress Creek near Pittsburg (USGS Gage 07344500)

The WAM-simulated (regulated) flow duration curves at the USGS gage on Big Cypress Creek near Pittsburg are shown in Figure 27. The addition of the pit discharge does not significantly affect flows at the gage except at about the 80^{th}-percentile and lower. During these periods of lower flows, the continuous discharge of stored water at a rate of 40 ac-ft/month increases the volume of flow downstream and provides a baseflow of 40 ac-ft/month downstream for about 11 percent of the months when flow would otherwise be zero.

From the heat map in Figure 28, flows are reduced by the project in less than half of the winter and spring months (December through May) by an average of less than one percent. Conversely, the project provides an average increase in monthly flow of 13 percent with increased flows occurring in 91 percent of the summer and fall months characterized by lower flows. During the summer months of July, August, and September, 100 percent of the regulated flow is provided by the project discharge in 31 percent of the months in the simulation period, while more than half the regulated flow comes from the project in 31 percent of the months.

The increase in flow provided by the project during the summer months, although significant during extreme dry periods, is not apparent in the monthly statistic chart shown in Figure 29 because the monthly discharge of 40 ac-ft is very low compared to typical regulated flows at the gage location.

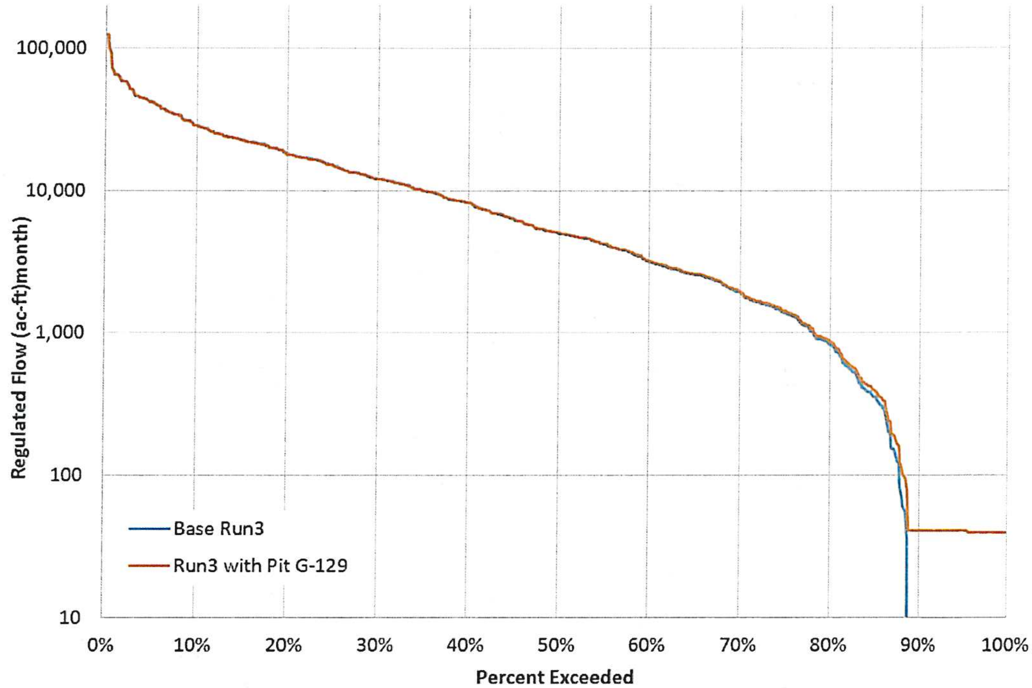


Figure 27 Regulated Flow Duration Curves at Big Cypress Creek near Pittsburg for Baseline Scenario

Year	Month 1	2	3	4	5	6	7	8	9	10	11	12
1948	0.02%	-0.02%	-0.06%	-0.08%	0.01%	1.62%	3.08%	9.65%	6.71%	7.13%	2.08%	1.85%
1949	0.08%	0.14%	-0.65%	-0.51%	-0.05%	0.90%	1.58%	4.52%	1.70%	0.09%	0.52%	-0.27%
1950	-0.62%	-0.31%	-0.06%	-0.01%	0.00%	-0.11%	0.71%	1.16%	-0.57%	1.27%	1.68%	1.40%
1951	0.25%	-0.68%	-0.09%	0.36%	0.42%	0.75%	0.82%	17.19%	3.37%	4.39%	1.94%	1.36%
1952	0.28%	0.61%	0.21%	-0.94%	-0.34%	0.38%	3.83%	21.71%	100.00%	40.38%	1.03%	0.19%
1953	0.34%	0.23%	0.31%	-0.47%	-0.91%	4.19%	0.62%	3.30%	0.94%	4.78%	1.61%	0.25%
1954	0.12%	0.37%	0.96%	1.03%	0.12%	0.54%	33.51%	100.00%	100.00%	3.08%	2.63%	0.97%
1955	1.07%	0.44%	0.20%	0.19%	2.41%	5.14%	42.02%	2.53%	4.72%	1.00%	10.52%	2.97%
1956	3.03%	0.14%	1.36%	2.51%	0.49%	41.65%	100.00%	100.00%	100.00%	100.00%	22.98%	9.74%
1957	5.35%	1.03%	0.21%	0.04%	-0.85%	-0.79%	4.21%	8.58%	0.87%	0.28%	-0.91%	-0.22%
1958	-0.77%	1.00%	-0.66%	-0.95%	-0.90%	-0.56%	-0.28%	1.17%	0.17%	1.64%	0.20%	0.80%
1959	1.16%	-0.55%	-0.66%	-0.66%	0.49%	2.36%	0.75%	2.45%	2.80%	3.15%	1.41%	0.12%
1960	-0.87%	-0.60%	-0.57%	0.96%	1.23%	0.49%	0.34%	7.58%	0.73%	0.77%	0.76%	-0.91%
1961	-0.68%	-0.67%	-0.69%	-0.24%	1.06%	-0.44%	0.64%	2.53%	2.30%	3.67%	0.32%	-0.73%
1962	-0.67%	-0.37%	-0.32%	-0.30%	-0.11%	0.83%	1.59%	12.40%	1.38%	2.07%	0.55%	0.59%
1963	0.42%	0.65%	0.29%	0.39%	0.22%	2.76%	100.00%	100.00%	100.00%	11.79%	100.00%	4.76%
1964	2.52%	1.13%	0.37%	0.34%	0.63%	2.42%	100.00%	1.70%	1.56%	3.85%	3.40%	1.42%
1965	0.52%	0.08%	0.21%	0.57%	0.17%	0.35%	9.71%	9.05%	8.18%	100.00%	20.61%	100.00%
1966	2.30%	0.61%	0.88%	0.06%	-0.95%	0.94%	24.84%	17.05%	1.82%	2.09%	1.30%	0.81%
1967	0.55%	0.88%	0.60%	0.17%	0.13%	0.19%	2.94%	7.18%	4.84%	25.30%	1.18%	0.26%
1968	0.12%	0.21%	-0.82%	-0.52%	-0.86%	-0.57%	1.10%	2.61%	0.31%	2.04%	0.33%	0.35%
1969	0.22%	-0.89%	-0.85%	-0.70%	-0.85%	1.70%	6.36%	10.32%	10.10%	9.47%	1.92%	0.85%
1970	0.48%	0.22%	-0.89%	-0.77%	0.82%	1.14%	5.78%	6.47%	13.24%	2.57%	1.98%	2.39%
1971	1.57%	0.49%	0.67%	2.05%	2.76%	11.97%	0.79%	1.43%	15.15%	6.63%	0.85%	0.09%
1972	0.12%	0.39%	0.59%	1.60%	2.44%	0.69%	0.37%	9.41%	100.00%	1.58%	0.32%	0.19%
1973	0.14%	0.15%	-0.92%	-0.90%	0.59%	-0.65%	2.70%	4.33%	1.12%	0.24%	-0.87%	-0.76%
1974	-0.78%	-0.38%	0.88%	-0.88%	1.11%	-0.71%	4.65%	0.95%	-0.87%	-0.17%	-0.90%	-0.39%
1975	-0.29%	-0.33%	-0.33%	-0.32%	-0.33%	-0.26%	1.37%	1.90%	10.99%	6.26%	4.21%	2.55%
1976	2.44%	0.63%	0.13%	0.24%	-0.78%	1.42%	0.36%	4.50%	7.04%	100.00%	100.00%	1.32%
1977	1.44%	0.10%	-0.84%	-0.82%	1.32%	3.47%	100.00%	4.45%	100.00%	100.00%	1.39%	1.53%
1978	0.46%	0.43%	0.18%	2.20%	0.43%	100.00%	100.00%	100.00%	100.00%	100.00%	1.33%	1.98%
1979	0.10%	0.16%	-0.90%	-0.77%	-0.68%	0.25%	0.82%	-0.23%	-0.81%	4.06%	0.62%	-0.31%
1980	-0.80%	-0.68%	-0.35%	-0.78%	-0.73%	1.05%	100.00%	100.00%	1.49%	2.65%	2.19%	0.76%
1981	1.55%	0.50%	0.43%	2.61%	0.09%	-0.96%	0.47%	100.00%	100.00%	0.16%	0.42%	2.46%
1982	0.59%	0.28%	0.29%	0.23%	-0.80%	0.40%	1.02%	100.00%	100.00%	100.00%	0.46%	0.10%
1983	0.76%	-0.67%	-0.80%	-0.10%	0.55%	1.00%	100.00%	100.00%	100.00%	6.72%	100.00%	1.65%
1984	1.27%	0.35%	0.33%	0.86%	100.00%	100.00%	100.00%	100.00%	100.00%	0.12%	0.27%	0.15%
1985	0.49%	0.06%	0.36%	-0.63%	-0.80%	0.63%	100.00%	100.00%	100.00%	0.76%	0.48%	0.08%
1986	0.91%	-0.88%	0.83%	0.24%	-0.46%	-0.71%	100.00%	100.00%	8.81%	8.03%	1.44%	0.38%
1987	0.37%	-0.13%	-0.94%	0.85%	100.00%	0.81%	3.13%	100.00%	100.00%	100.00%	0.30%	-0.97%
1988	-0.75%	-0.73%	-0.68%	-0.33%	4.34%	100.00%	100.00%	100.00%	100.00%	52.76%	0.11%	0.26%
1989	0.21%	-0.89%	-0.79%	-0.56%	-0.48%	-0.33%	1.44%	100.00%	100.00%	100.00%	100.00%	5.66%
1990	0.19%	0.15%	-0.77%	-0.36%	-0.34%	0.65%	100.00%	1.29%	1.07%	2.85%	0.14%	-0.69%
1991	-0.54%	-0.34%	-0.32%	-0.29%	-0.34%	-0.37%	1.32%	100.00%	2.89%	0.63%	0.16%	-0.81%
1992	-0.57%	-0.33%	-0.34%	0.59%	0.70%	-0.43%	-0.36%	0.43%	0.60%	100.00%	0.32%	-0.50%
1993	-0.32%	-0.29%	-0.32%	-0.29%	-0.17%	-0.17%	21.04%	3.38%	5.10%	0.11%	0.46%	-0.30%
1994	-0.20%	-0.74%	-0.70%	0.73%	-0.29%	0.76%	-0.64%	100.00%	100.00%	0.22%	-0.66%	-0.35%
1995	-0.34%	0.72%	-0.35%	-0.31%	-0.32%	0.69%	1.45%	36.79%	11.23%	100.00%	100.00%	2.87%
1996	0.85%	1.42%	1.28%	0.61%	1.68%	0.90%	3.51%	0.48%	0.59%	0.34%	0.14%	0.16%
1997	0.21%	-0.95%	-0.83%	-0.86%	-0.23%	-0.58%	0.45%	1.31%	100.00%	2.37%	0.81%	0.21%
1998	-0.85%	-0.46%	-0.34%	0.48%	10.27%	100.00%	100.00%	100.00%	0.34%	0.27%	0.29%	0.20%

-100% 0% 100%

Figure 28 Regulated Flow Heat Map at Big Cypress Creek near Pittsburg for Baseline Scenario

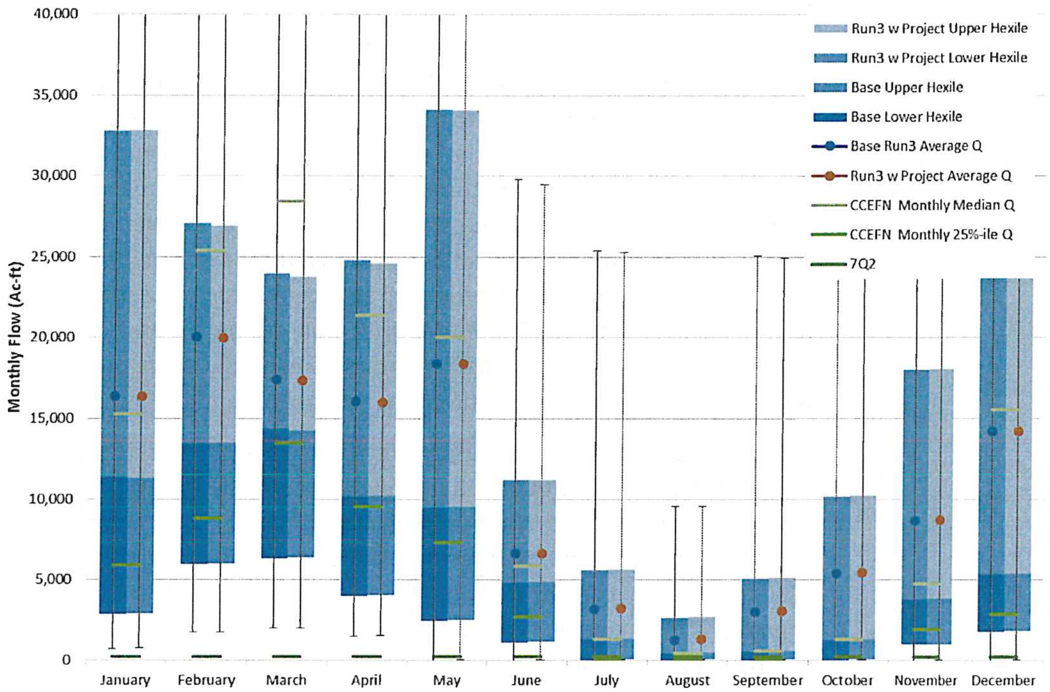


Figure 29 Monthly Statistics of Regulated Flow at Big Cypress Creek near Pittsburg for Baseline Scenario

3.5.4.4 Optimized Release Scenarios

The scenarios previously discussed simulate releases from Pit G-129 as a *constant* flow of 40 ac-ft/month (0.67 cfs) based on the calculated firm yield divided evenly across 12 months. However, pit releases could potentially provide greater environmental benefits during low flow conditions by discharging only when observed flows are less than a specified threshold. To evaluate these potential additional benefits, several additional scenarios were developed utilizing a flow switch in the WAM to provide releases from the pit only when regulated flows at the USGS gage on Big Cypress Creek near Pittsburg were below a specified monthly threshold.

For the example scenario presented herein, a threshold of 1,200 ac-ft/month (approximately 20 cfs) was established roughly based on observed median monthly flows in the months of July and October bounding the summer dry period. This threshold limits releases from the pit to only periods of very low flows, typically in the months of July through October. As shown in Figure 29, the threshold of 1,200 ac-ft/month is less than the lower hexile for the months of December through May. In this scenario, releases can only occur during the months of May through January and would occur primarily in July through October. With the low flow threshold in place, monthly releases from the pit can be increased from 40 ac-ft to 156 ac-ft (2.6 cfs), an increase of almost four times the flow rate.

The low flow threshold could potentially be optimized to achieve a particular monthly or seasonal flow condition in the creek. Such an analysis would require multiple iterations of modeling to determine the optimal streamflow threshold that produces the most flow without allowing monthly streamflows to reach 0 ac-ft/month, which is beyond the scope of work for the present effort. That said, only the results of the single threshold scenario are presented in this report, however, a second arbitrarily selected streamflow threshold was evaluated in which a 600 ac-ft/month streamflow threshold during the June – November period was added in addition to the 1,200 ac-ft/month streamflow threshold for the remaining months of the year. This refined streamflow threshold produced a modeled project discharge of 236 ac-ft/month, and a firm yield increase to LOTP of 800 ac-ft/yr, but resulted in some months outside of the June – November period to reach 0 ac-ft/month of streamflow. More model iterations would be necessary to determine the optimal operational streamflow threshold for the proposed project.

Flow duration curves for Tankersley Creek at the Pilgrim's Pride discharge location for the Full Authorization (Run 3 with no return flows) scenarios are shown in Figure 30. These curves illustrate the substantial increase in low flows that be achieved by utilizing storage in Pit G-129. With the 1,200 ac-ft/month threshold, flows lower than about the 70th-percentile can be sustained at about 156 ac-ft/month for an additional 23 percent of the months. At flows lower than the 91st-percentile, flows gradually diminish to a low flow of 78 ac-ft/month. This decline is an artifact of the 1,200 ac-ft/month threshold for months in which the flow at the USGS gage is slightly above 1,200 ac-ft, thus preventing releases from the pit, but upstream flows on Tankersley Creek are lower than the 156 ac-ft monthly release volume from the pit.

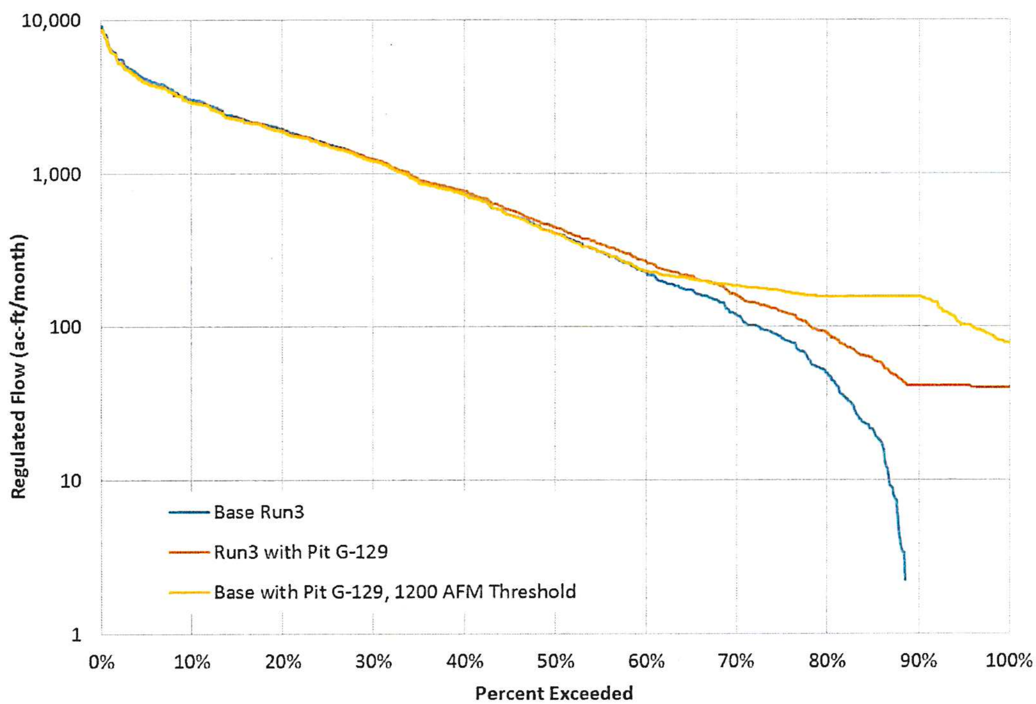


Figure 30 Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Low Flow Threshold Scenario

From the heat map in Figure 31, flows are reduced by the project in less than half of the winter and spring months (December through May) by an average of 6 percent compared to average reduction of 4 percent without the threshold. Conversely, the project provides an average increase in monthly flow of 20 percent with increased flows occurring in 44 percent of the summer and fall months characterized by lower flows. During the summer months of July, August, and September, 100 percent of the regulated flow is provided by the project discharge in 31 percent of the months in the simulation period while more than half the regulated flow comes from the project in 59 percent of the months. Compared to the pit discharge scenario without the low flow threshold, flows are provided in fewer months but at greater volumes when they are provided.

The significant increase in flow provided by the project during the summer months is also apparent in the monthly statistic chart shown in Figure 32. The lower end of the bars are raised significantly by the pit discharge during the months of June through November, and median flows are also raised significantly for the months of July through October. This chart also shows the reduction in higher flows in the other months.

	Month											
Year	1	2	3	4	5	6	7	8	9	10	11	12
1948	0%	0%	-1%	-1%	0%	0%	0%	87%	82%	83%	0%	0%
1949	0%	0%	-7%	-6%	-7%	0%	0%	75%	0%	0%	-7%	-7%
1950	-6%	-3%	-1%	0%	0%	-3%	0%	0%	-1%	0%	0%	0%
1951	0%	-1%	0%	-2%	-4%	0%	0%	93%	69%	74%	0%	0%
1952	0%	0%	0%	-6%	-6%	-7%	72%	95%	100%	98%	0%	0%
1953	0%	0%	0%	-7%	-6%	74%	0%	68%	0%	76%	0%	0%
1954	0%	0%	0%	0%	0%	0%	97%	100%	100%	0%	0%	0%
1955	0%	0%	0%	0%	0%	78%	98%	0%	76%	0%	88%	0%
1956	0%	0%	0%	0%	0%	98%	100%	100%	100%	100%	95%	87%
1957	78%	0%	0%	0%	-7%	-7%	73%	86%	0%	0%	-6%	-6%
1958	-6%	-6%	-6%	-6%	-6%	-6%	-6%	0%	-5%	0%	0%	0%
1959	0%	-6%	-6%	-6%	-6%	42%	0%	0%	0%	0%	0%	0%
1960	-6%	-6%	-6%	0%	0%	0%	0%	84%	0%	0%	0%	-7%
1961	-6%	-6%	-6%	-7%	0%	-6%	-7%	0%	0%	70%	0%	-6%
1962	-6%	-6%	-6%	-6%	-7%	0%	0%	90%	0%	0%	0%	0%
1963	0%	0%	0%	0%	0%	0%	100%	100%	100%	89%	100%	76%
1964	0%	0%	0%	0%	0%	0%	100%	0%	0%	71%	69%	0%
1965	0%	0%	0%	0%	0%	0%	87%	86%	85%	100%	94%	100%
1966	0%	0%	0%	0%	-7%	0%	95%	93%	0%	0%	0%	0%
1967	0%	0%	0%	0%	0%	0%	0%	83%	77%	96%	0%	0%
1968	0%	0%	-7%	-7%	-7%	-7%	0%	0%	0%	0%	0%	0%
1969	-7%	-7%	-6%	-6%	-6%	0%	81%	88%	88%	87%	0%	0%
1970	0%	0%	-7%	-6%	-7%	0%	79%	81%	91%	0%	0%	0%
1971	0%	0%	0%	0%	0%	90%	0%	0%	92%	82%	0%	0%
1972	0%	0%	0%	0%	0%	0%	0%	87%	100%	0%	0%	0%
1973	0%	0%	-7%	-6%	0%	-6%	0%	74%	0%	0%	-6%	-6%
1974	-6%	-6%	-7%	-6%	0%	-6%	75%	0%	-6%	-6%	-6%	-6%
1975	-6%	-6%	-6%	-6%	-6%	-6%	0%	0%	89%	81%	74%	0%
1976	0%	0%	0%	0%	-7%	-1%	0%	75%	83%	100%	100%	0%
1977	0%	0%	-6%	-6%	0%	70%	100%	75%	100%	100%	0%	0%
1978	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%
1979	0%	0%	-7%	-7%	-6%	0%	0%	-7%	-6%	72%	0%	-6%
1980	-6%	-6%	-6%	-6%	-6%	0%	100%	100%	0%	0%	0%	0%
1981	0%	0%	0%	0%	0%	-7%	0%	100%	100%	0%	0%	0%
1982	0%	0%	0%	0%	-7%	0%	0%	100%	100%	100%	0%	0%
1983	-7%	-6%	-6%	-7%	-6%	0%	100%	100%	100%	82%	100%	0%
1984	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%
1985	0%	0%	0%	-7%	-7%	0%	100%	100%	100%	0%	0%	0%
1986	0%	-7%	0%	0%	-6%	-6%	100%	100%	86%	85%	0%	0%
1987	0%	-3%	-6%	0%	100%	0%	0%	100%	100%	100%	0%	-6%
1988	-6%	-6%	-6%	-7%	74%	100%	100%	100%	100%	99%	0%	0%
1989	0%	-7%	-6%	-7%	-6%	-6%	0%	100%	100%	100%	100%	79%
1990	0%	0%	-6%	-6%	-6%	0%	100%	0%	0%	0%	0%	-7%
1991	-6%	-6%	-6%	-6%	-6%	-6%	0%	100%	0%	0%	0%	-6%
1992	-6%	-6%	-6%	0%	0%	-6%	-6%	0%	0%	100%	0%	-6%
1993	-6%	-6%	-6%	-6%	-6%	-6%	94%	69%	78%	0%	0%	-7%
1994	-7%	-6%	-6%	0%	-6%	0%	-7%	100%	100%	0%	-6%	-6%
1995	-6%	0%	-6%	-6%	-6%	0%	0%	97%	89%	100%	100%	0%
1996	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%
1997	0%	-7%	-6%	-6%	-7%	-6%	0%	0%	100%	0%	0%	0%
1998	-6%	-6%	-6%	0%	88%	100%	100%	100%	0%	0%	0%	0%

-100% 0% 100%

Figure 31 Regulated Flow Heat Map at Pilgrim's Pride Discharge with 1,200 ac-ft/month Threshold

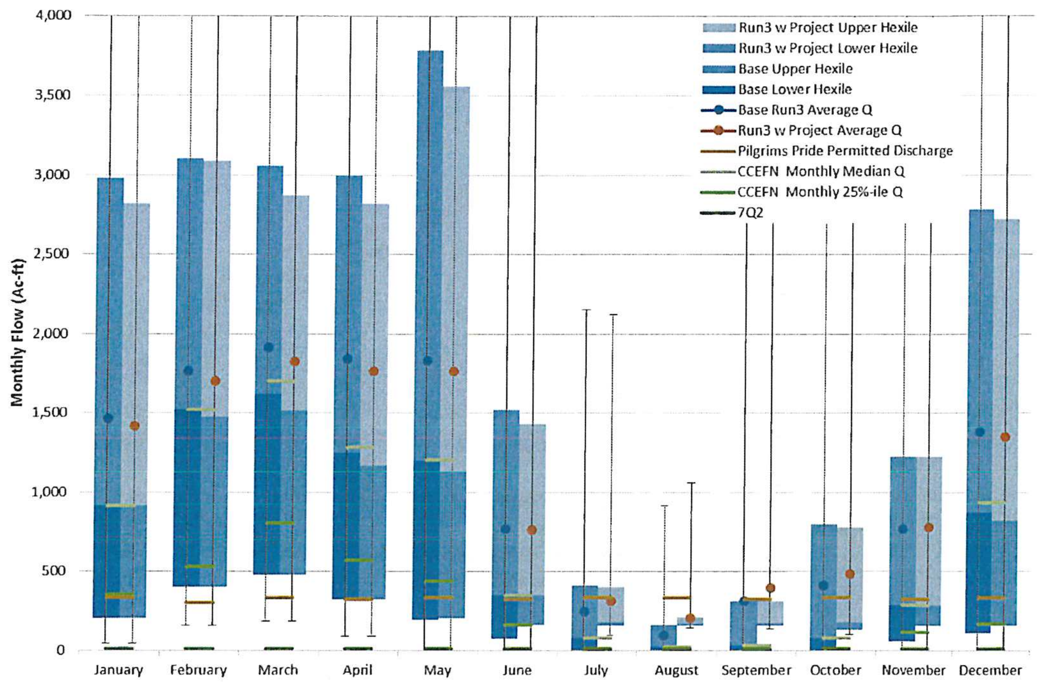


Figure 32 Monthly Statistics of Regulated Flow at Pilgrim's Pride Discharge with 1,200 ac-ft/month Threshold

3.5.4.5 Full Authorization with Discharges

Figure 33 shows a comparison of flow duration curves for Tankersley Creek at the confluence with Big Cypress Creek for Full Authorization scenarios with and without upstream discharges (return flows). Because wastewater discharges occur throughout the year, these return flows provide a continuous baseflow in Tankersley Creek even during extreme dry conditions when flow might otherwise be zero. However, the addition of releases from Pit G-129 increase flows by more than 30 percent during these periods of extreme low flow conditions.

3.5.4.6 Current Conditions

Figure 34 provides a comparison of Full Authorization (Run 3) and Current Conditions (Run 8) scenarios with and without the pit impoundment. The Current Conditions scenarios demonstrate that the discharges from the pit have less of an impact on downstream flows because the significant low flow event that occur in the Full Authorization scenario are mitigated by lower water supply diversions and addition of return flows. However, as water resource demands increase, actual flow conditions will trend toward the situation represented by the Full Authorization scenarios.

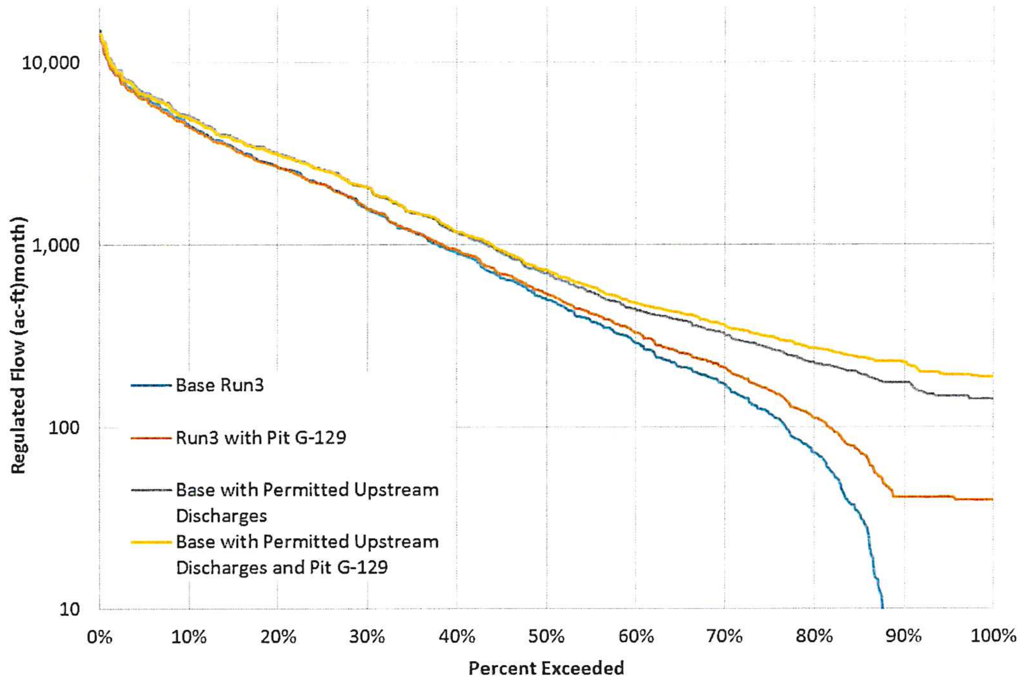


Figure 33 Regulated Flow Duration Curves for Tankersley Creek at Confluence with Big Cypress Creek

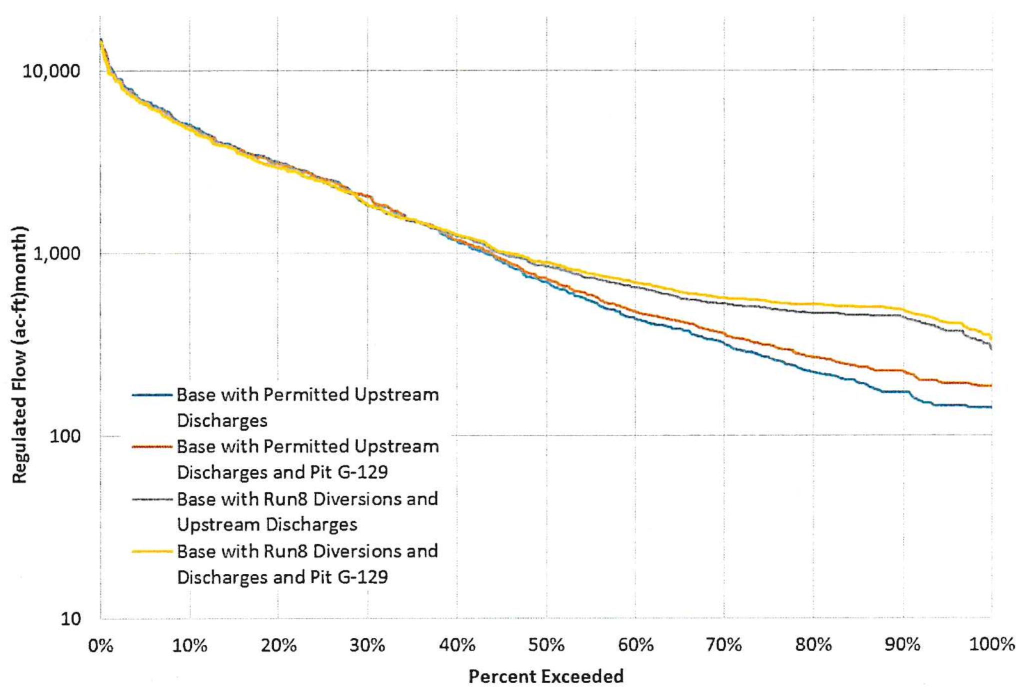


Figure 34 Regulated Flow Duration Curves for Tankersley Creek at Confluence with Big Cypress Creek

3.5.5 Potential Supply Benefits

In addition to the environmental benefits of sustained baseflow during extreme low flow and dry periods, the use of Pit G-129 can also provide benefits to the overall water supply in the Cypress Basin. Water supply benefits were quantified by evaluating the firm yield of Lake O' The Pines for various scenarios that include discharge from the pit. Results for the baseline scenario and two pit storage scenarios are presented in Table 7. For the scenarios evaluated, the results show that use of Pit G-129 for storage can provide a benefit of up to 900 acre-feet/year to the firm yield of Lake O' The Pines. All firm yields were determined using the Full Authorization (Run 3) model with no return flows.

Table 7 Lake O' The Pines Firm Yield for System Operations

Scenario	Modeled Firm Yield (acre-feet/year)	Benefit to Firm Yield (acre-feet/ year)
Baseline Full Authorization (Run 3)	178,800	--
Base with Pit G-129 Constant Discharge	179,300	500
Base with Pit G-129 Low Flow Discharge	179,700	900

Section 4

WATER QUALITY CHARACTERIZATION

Based on the WAM analysis, the project has the potential to contribute up to 156-236 acre-ft/month of water into Tankersley Creek. During "dry" times, this discharge could represent 100 percent of flow in the Big Cypress Tributary of Lake O' the Pines. Accounting for other flow contributions to Lake O' the Pines, water from the project impoundment is estimated to contribute approximately 0.5 percent of the yield from Lake O' the Pines (firm yield of 178,800 to 179,700 acre-ft/year accounting for additional flow from the impoundment). Water quality criteria and characteristics were reviewed to understand potential water quality impacts from introducing flow from the impoundment to Tankersley Creek and on to Lake O' the Pines.

Big Cypress Creek below Lake Bob Sandlin (0404) is listed for the following impairments: bacteria (listed in 2002) and sulfate (listed in 2014). Big Cypress Creek below Lake O' the Pines is listed for depressed dissolved oxygen (2010), mercury in edible tissue (1998) and pH (2000). Introduction of water from the Luminant Mine Pit would need to avoid exacerbating these issues.

Table 8 lists the water quality criteria for Lake Bob Sandlin (Segment 0408), Big Cypress Creek below Lake Bob Sandlin (Segment 0404), and Lake O' the Pines (Segment 0403). Both lakes are designated with high aquatic life standards and are used as public drinking water supplies.

Table 8 Texas Surface Water Quality Standards (30 TAC §307)

Parameter	Lake Bob Sandlin	Big Cypress Creek below Lake Bob Sandlin	Lake O' the Pines
Segment No.	*0408*	*0404*	*0403*
pH, SU	6.5–9.0	6.0–8.5	6.0–8.5
E. Coli, MPN/100 mL	206	206	206
Dissolved Oxygen, mg/L	5.0	4.0	5.0
Chloride, mg/L	50	100	80
Sulfate, mg/L	65	100	50
TDS, mg/L	150	500	300

Table 9 summarizes results from sampling that Water Monitoring Solutions (WMS) collected in the Luminant Mine Pit near Mount Pleasant, Texas. Conductivity, dissolved oxygen, and pH concentrations represent the average concentrations from depth profiling conducted August 7 and October 30, 2018. Assuming that water from the pit would be drawn from above the thermocline, a slightly higher average dissolved oxygen would be expected. Details from the sampling and water quality analyses are provided in Appendix D. Mercury sampling was not conducted since it is typically not detectable in both water and sediment samples even in water bodies with fish consumption advisories. However, pH was evaluated with depth. Low pH is required for mercury to methylate to become biologically available.

Concentrations for pH, *e. coli*, dissolved oxygen, and chloride are all in compliance with the respective Texas Surface Water Quality Standards for Segment 0404 and 0403 even without factoring in substantial dilution with receiving water. *E. coli* and chloride concentrations are more than an order of magnitude below Segment 0404 and 0403 standards.

Table 9 Water Quality Sampling Results for the Luminant Mine Pit[1]

Parameter	Units	Average[(2)]	Range
Ammonia	mg/L as N	< 0.02	< 0.02
Alkalinity	mg/L as $CaCO_3$	55.6	54.2–58.1
Chloride	mg/L	5.4	5.1–5.6
Chlorophyll *a*	ug/L	2.0	0.8–3.7
Conductivity	µS/cm	277	213–319
Dissolved Oxygen	mg/L	6.4	0.9–8.9
E. coli	MPN/100 mL	15.0	4.1–25.9
Nitrate	mg/L as N	0.07	0.02–0.18
Nitrite	mg/L as N	< 0.01	< 0.01
pH	SU	7.8	7.47–8.45
Phosphorus	mg/L as P	0.01	< 0.02 –0.05
Sulfate	mg/L	63.7	62–67

Table 9 Water Quality Sampling Results for the Luminant Mine Pit(1) (continued)

Parameter	Units	Average(2)	Range
Total Organic Carbon	mg/L	2.9	2.5–3.4
Total Suspended Solids	mg/L	7	1–12

Notes:
(1) Samples were collected at two locations of the pit (North and South stations) on two sampling events (August 7 and October 30, 2018).
(2) Average values were calculated by assigning non-detects a zero value.

Sulfate concentrations were below the stream standards (Segment 0404), but above the 50 mg/L criteria for Lake O' the Pines (Segment 0403). However, sulfate concentrations in the Luminant Mine Pit were comparable to sulfate concentrations measured in Tankersley Creek (Station 10261) in the last four years (Figure 35). Specifically, the average sulfate concentration in Tankersley Creek samples measured at Station 10261 since November 2011 (i.e., after a consistent and significant decreasing trend in sulfate concentrations in the watershed), was 68.9 mg/L, compared to average concentrations measured in the Luminant Mine Pit of 63.7 mg/L. Based on the available data, contribution of water from the Luminant Mine Pit is expected to either not change or slightly improve water quality in Segment 0404 relative to this 303d listed parameter.

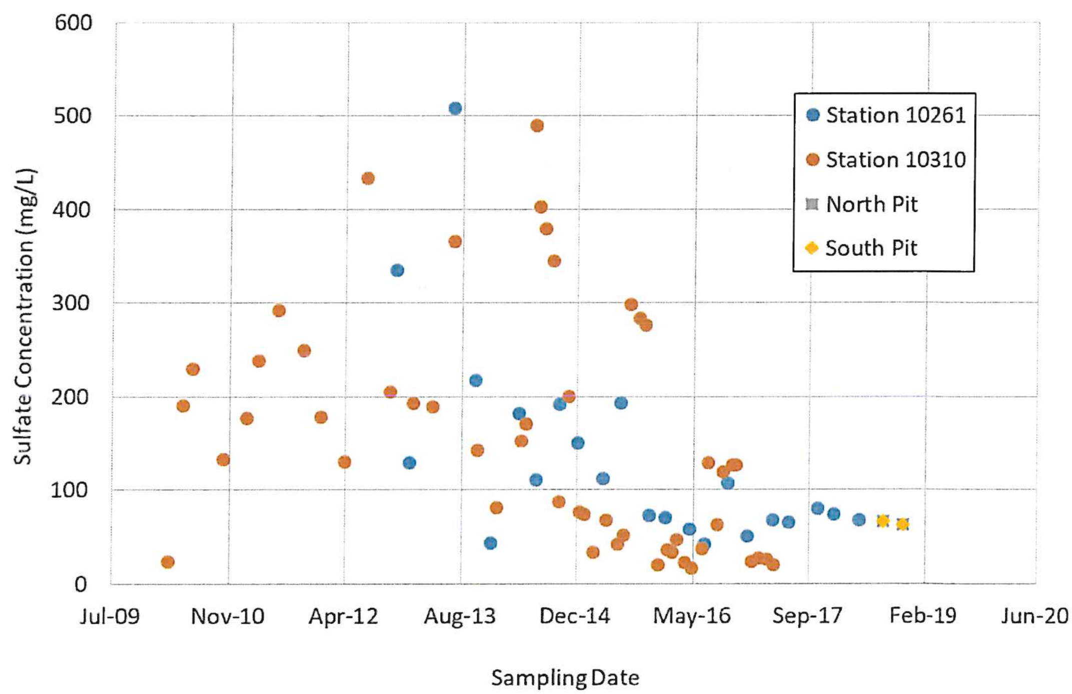


Figure 35 Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Sulfate

Figures 36 to 38 show similar data for nitrate, phosphorus, and chlorophyll *a* concentrations in the Luminant Mine Pit samples compared to historical data in Tankersley Creek 10261 and immediately downstream of convergence of that creek with Big Cypress Creek (Station 10301). Based on available data, contribution of water from the Luminant Mine Pit is expected to either not change or improve water quality in Segment 0404 relative to these parameters (i.e., nitrate, phosphorus, and chlorophyll *a*).

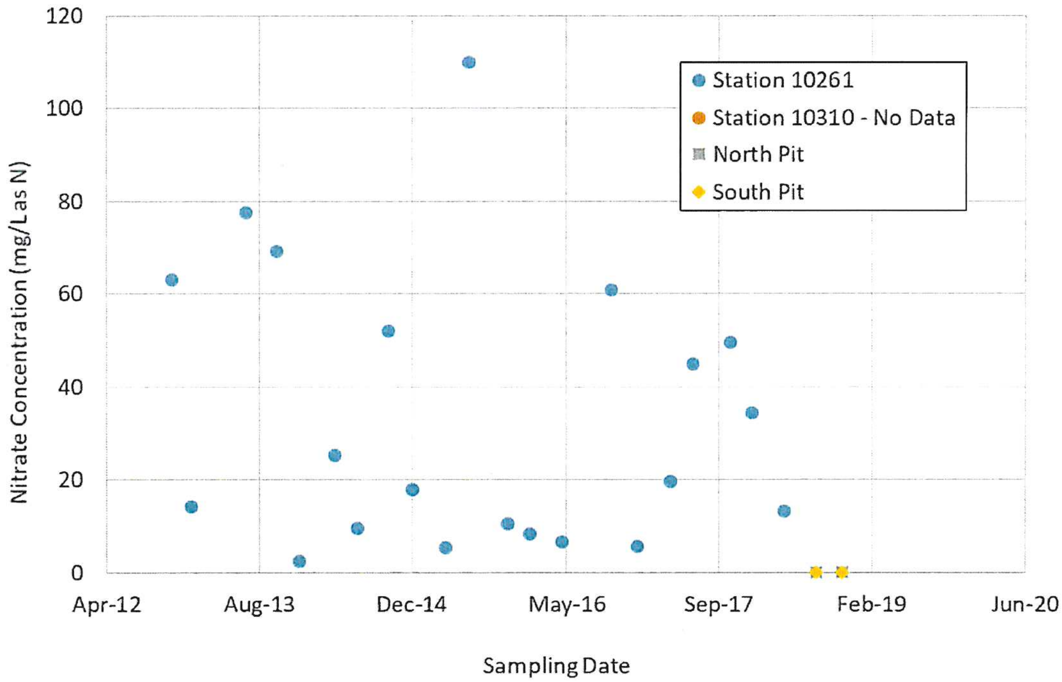


Figure 36 Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Nitrate

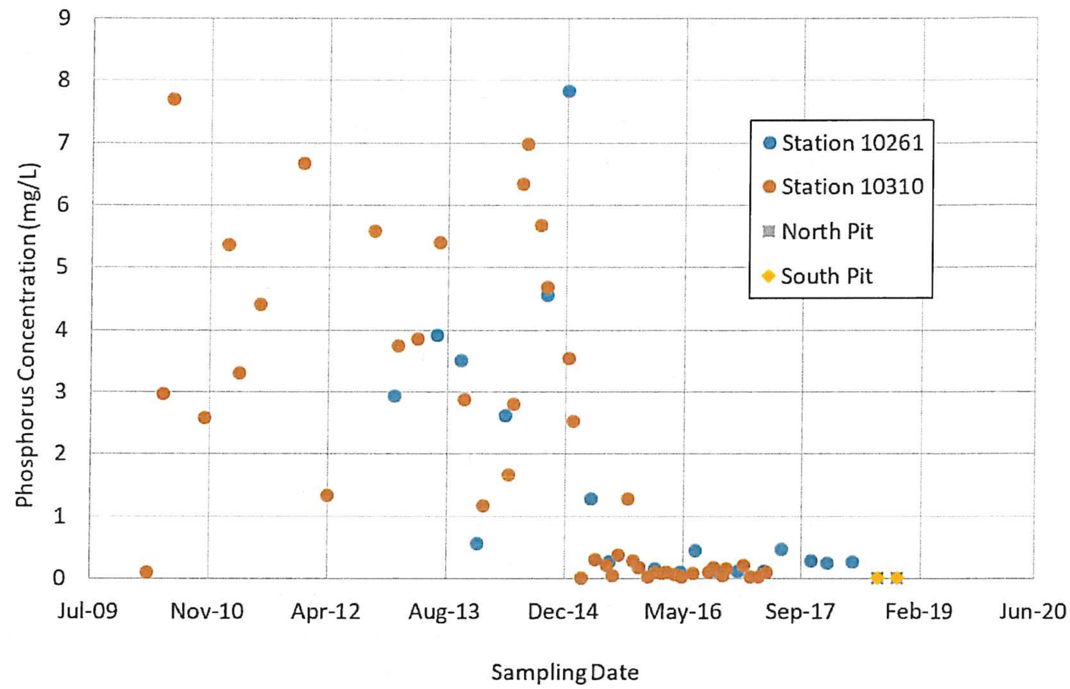


Figure 37 Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Phosphorus

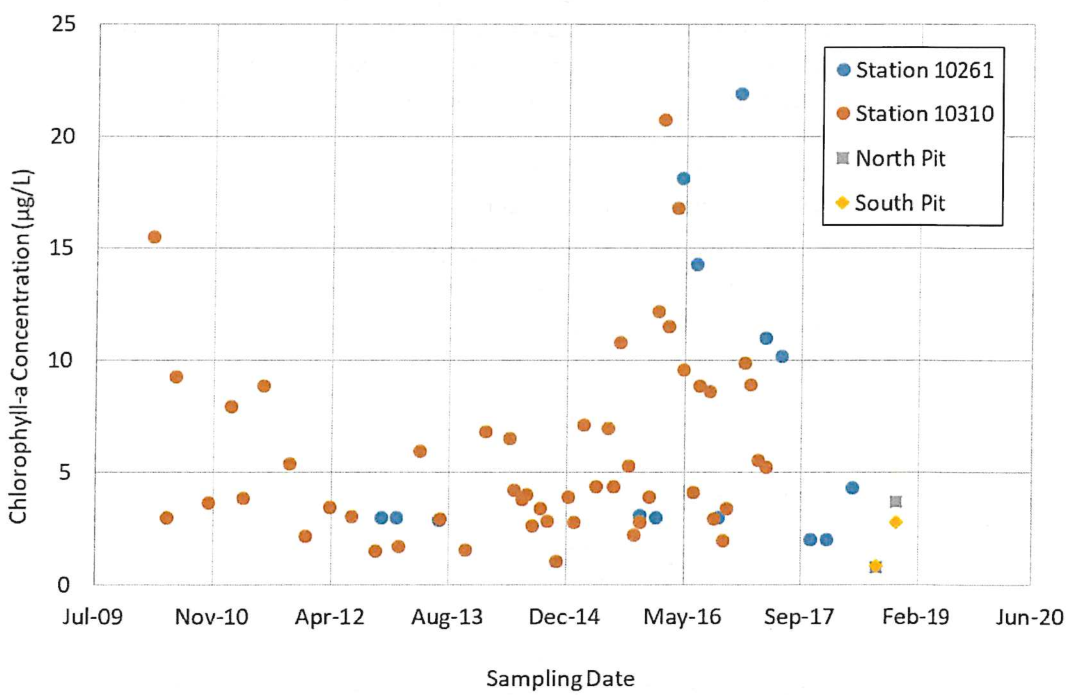


Figure 38 Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Chlorophyll α

TOC concentrations in the Luminant Mine Pit samples are also lower than the 8.7 mg/L average concentration in Tankersley Creek (Station 10261 SWQM data). Electrical conductivity, which can be correlated to TDS, was also lower in the Luminant Mine Pit samples (average of 277 µS/cm) than in Tankersley Creek (average of 887 µS/cm in 69 samples collected between 2009 and 2018).

Section 5

CONCLUSIONS AND RECOMMENDATIONS

Streamflow in the Cypress Creek Basin varies drastically by season with periods of extreme low flow and dry conditions occurring during the summer months. An assessment of the potential use of an existing Luminant lignite mining pit as storage indicates the pit can provide an adequate quantity of water to meet potential downstream environmental and supplemental supply uses. After closure, Pit G-129 is planned to have a storage capacity of 5,355 ac-ft. The firm yield of the pit was calculated using the Cypress Basin WAM and determined to be up to 480 ac ft/yr. The pit has the capability to discharge up to 236 ac-ft per month (3.9 cfs) during low flow periods with potential to provide up to 900 ac-ft/yr of additional firm yield in Lake O' The Pines.

Additional study would be necessary to determine the ecological benefits from the discharge amounts derived herein. Specifically, hydraulic and habitat modeling would be necessary to determine the extent to which the additional flow would impact mesohabitat conditions for critical biology, and the geomorphology and connectivity of the downstream watershed. That said, the results of this study are encouraging in the sense that additional water could be made available during critical low-flow, drought conditions that could provide both water supply and environmental downstream benefits.

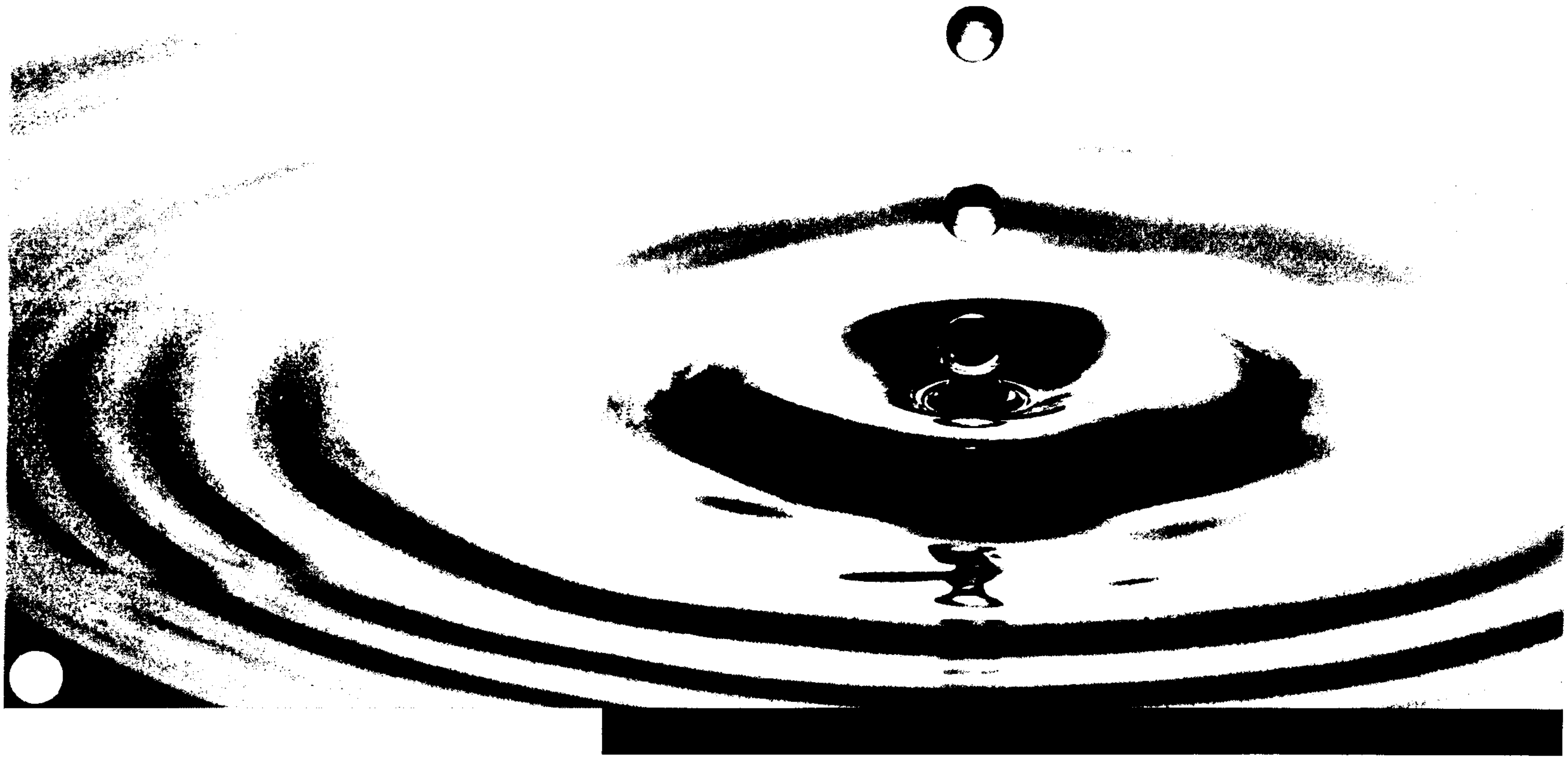
Based on this analysis of the historical water quality in the portion of the Cypress Creek Basin that would receive supplemental flow from the Luminant mine pit, i.e., Segments 0404 and 0403, the addition of flow from the pit is not expected to adversely impact water quality in the watershed.

Section 6

REFERENCES

Helsel, D.R. and R. M. Hirsch, 2002. Statistical Methods in Water Resources Techniques of Water Resources Investigations, Book 4, chapter A3. U.S. Geological Survey. 522 pages.

Wurbs, R.A., 2018. Water Rights Analysis Package (WRAP) Modeling System Users Manual, Technical Report No. 256, Texas Water Resources Institute, 12th Edition.



Northeast Texas Municipal Water District

Technical Memorandum 1
TANKERSLEY CREEK RESERVOIR STUDY - APPENDICES

FINAL | February 2019

carollo®

TBPE No. F-882

Northeast Texas Municipal Water District

Technical Memorandum 1
TANKERSLEY CREEK RESERVOIR STUDY - APPENDICES

FINAL | February 2019

STATE OF TEXAS
TONY L. SMITH
92620
LICENSED
PROFESSIONAL ENGINEER

Appendix A
RELEVANT PERMITS

CERTIFICATE OF ADJUDICATION

CERTIFICATE OF ADJUDICATION: 04-4590

OWNER: Northeast Texas Municipal Water District
P. O. Box 955
Hughes Springs, Texas 75656

COUNTY: Marion

PRIORITY DATE: September 16, 1957

WATERCOURSE: Johnson Creek, tributary of Cypress Creek and Cypress Creek (Lake O' the Pines)

BASIN: Cypress Creek

WHEREAS, by final decree of the 188th Judicial District Court of Gregg County, in Cause No. 86-257-A, In Re: The Adjudication of Water Rights in the Cypress Creek Basin dated June 9, 1986 a right was recognized under Permit 1897ABC authorizing the Northeast Texas Municipal Water District to appropriate waters of the State of Texas as set forth below;

NOW, THEREFORE, this certificate of adjudication to appropriate waters of the State of Texas in the Cypress Creek Basin is issued to the Northeast Texas Municipal Water District, subject to the following terms and conditions:

1. IMPOUNDMENT

Owner is authorized to store 251,000 acre feet of water in an existing dam and reservoir on Cypress Creek, known as Lake O' the Pines, which is owned by the United States of America and operated by the U.S. Corps of Engineers, between elevation 201 feet and elevation 228.5 feet above mean sea level. The dam is located in the A. Abram Survey, Abstract 3; the Joseph French Survey, Abstract 131; the Mrs. E.T. Jones Survey, Abstract 232; the T.B. Morton Survey, Abstract 283 and the David Chote Survey, Abstract 80, Marion County, Texas.

2. USE

A. Owner is authorized to divert and use not to exceed 42,000 acre-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin for municipal and domestic purposes of which not more than 1930 acre-feet of water per annum may be diverted from Lake Bob Sandlin by the City of Pittsburg in accordance with the trilateral agreement between the Titus County Fresh Water Supply District No. 1; the City of Pittsburg and the owner of this certificate.

B. Owner is authorized to divert and use not to exceed 161,800 acre-feet of water per annum from the aforesaid reservoir and

Lake Bob Sandlin for industrial purposes of which not more than 10,000 acre feet of water per annum may be diverted from Lake Bob Sandlin.

C. Owner is authorized to release sufficient amounts of industrial use water from Lake O' the Pines, to provide for the transwatershed diversion of 18,000 acre-feet of water per annum to the Sabine River Basin. Released water will be diverted from Cypress Creek and transported via pipeline for storage in Southwestern Electric Power Company's cooling Pond on Brady Branch, tributary of the Sabine River, Sabine River Basin.

D. Owner is also authorized to use the impounded water of the aforesaid reservoir for recreation purposes.

3. DIVERSION

A. Location:
At the perimeter of the aforesaid reservoir and from the perimeter of Lake Bob Sandlin under the Reservoir Operation Agreement.

B. Maximum rates are as shown:
(1) 1300.00 cfs (585,000 gpm) from Lake O' the Pines.

(2) 85.00 cfs (38,250 gpm) from Lake Bob Sandlin.

4. PRIORITY

The time priority of owner's right is September 16, 1957.

5. SPECIAL CONDITIONS

A. Owner shall maintain a suitable outlet in the aforesaid dam authorized herein to allow the free passage of water that owner is not entitled to divert or impound.

B. Owner is authorized to use the bed and banks of Cypress Creek, below the aforesaid dam, to convey and deliver water to be appropriated hereunder to downstream diversion points.

C. Owner's rights hereunder are subject to an agreement for reservoir operations on Cypress Creek between the Texas Water Development Board, the Titus County Fresh Water Supply District No. 1, the Franklin County Water District, the Northeast Texas Municipal Water District and the Lone Star Steel Company, dated January 1, 1973 and to subsequent amendments to that agreement or basin operation orders issued by the Commission.

Certificate of Adjudication 04-4590

The locations of pertinent features related to this certificate are shown on Page 6 of the Cypress Creek Basin Certificates of Adjudication Maps, copies of which are located in the offices of the Texas Water Commission, Austin, Texas and the office of the County Clerk of Morris and Marion Counties.

This certificate of adjudication is issued subject to all terms, conditions and provisions in the final decree of the 188th Judicial District Court of Gregg County, Texas, in Cause No. 86-257-A, In Re: The Adjudication of Water Rights in the Cypress Creek Basin dated June 9, 1986 and supersedes all rights of the owner asserted in that cause.

This certificate of adjudication is issued subject to senior and superior water rights in the Cypress Creek Basin.

This certificate of adjudication is issued subject to the obligations of the State of Texas pursuant to the terms of the Red River Compact.

This certificate of adjudication is issued subject to the Rules of the Texas Water Commission and its continuing right of supervision of State water resources consistent with the public policy of the State as set forth in the Texas Water Code.

TEXAS WATER COMMISSION

Paul Hopkins

Paul Hopkins, Chairman

DATE ISSUED:

OCT 13 1986

ATTEST:

Mary Ann Hefner

Mary Ann Hefner, Chief Clerk

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Lake O' the pines

AMENDMENT TO CERTIFICATE OF ADJUDICATION

CERTIFICATE NO. 04-4590A

Permittee	: Northeast Texas Municipal Water District	Address	: P.O. Box 955 Hughes Springs, Texas 75656
Filed	: August 22, 1995	Granted	: DEC 15 1995
Purpose	: Municipal, Domestic, Industrial And Recreation	County	: Marion
Watercourse	: Johnson Creek, tributary of Cypress Creek and Cypress Creek	Watershed	: Cypress Basin

WHEREAS, Certificate of Adjudication No. 04-4590 was issued to the Northeast Texas Municipal Water District on October 13, 1986 and authorized certificate owner to store 251,000 acre-feet of water in an existing dam and reservoir on Cypress Creek known as Lake O' the Pines; and

WHEREAS, owner is authorized: to divert and use not to exceed 42,000 acre-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin (immediately upstream of Lake O' the Pines) for municipal and domestic purposes; to divert and use not to exceed 161,800 care-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin for industrial purposes of which not more than 10,000 acre-feet of water per annum may be diverted from Lake Bob Sandlin and to use the impounded water of Lake O' the Pines for recreational purposes; and

WHEREAS, an application was received from Northeast Texas Municipal Water District wherein applicant seeks to amend the certificate by authorizing transwatershed diversion of an additional 20,000 acre-feet of water per annum from Lake O' the Pines into the Sabine River Basin for municipal and industrial use by the City of Longview; and

WHEREAS, the water will be diverted from the perimeter of the reservoir on the south shore of Lake O' the Pines at a rate of diversion not to exceed 100 cfs (44,883 gpm); and

WHEREAS, the Texas Natural Resource Conservation Commission finds that jurisdiction over the application is established; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Natural Resource Conservation Commission in issuing this amendment; and

NOW, THEREFORE, this amendment to Certificate No. 04-4590 is issued to Northeast Texas Municipal Water District, subject to the following terms and conditions:

1. USE

In addition to the uses contained in Certificate No. 04-4590, owner is authorized to provide for the transwatershed diversion of 20,000 acre-feet of water per annum for municipal and industrial uses from Lake O' the Pines to the Sabine River Basin for use by the City of Longview, Texas.

2. DIVERSION RATE

Water diverted from the perimeter of the reservoir at a maximum rate of 100 cfs (44,883 gpm)

3. WATER CONSERVATION

Owner shall maintain a water conservation plan that provides for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future use or alternative uses. Such plan shall include a requirement in every wholesale water supply contract entered into, on or after the effective date of this permit, including any contract extension or renewal, that each successive wholesale customer develop and implement water conservation measures. If the customer intends to resell the water, then the contract for the resale of the water must have water conservation requirements so that each successive wholesale customer in the resale of the water will be required to implement water conservation measures.

3. TIME PRIORITY

The time priority of this amendment is September 6, 1957.

This amendment is issued subject to all terms, conditions and provisions contained in Certificate No. 04-4590, excep as specifically amended herein.

This amendment is issued subject to all superior and senior water rights in the Cypress Basin.

Certificate owner agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Natural Resource Conservation Commission and to th right of continuing supervision of State water resources exercised by the Commission.

TEXAS NATURAL RESOURCE
CONSERVATION COMMISSION

For the Commission

Date Issued: DEC 15 1995

ATTEST:

Laurie Lancaster
for Gloria A. Vasquez, Chief Clerk

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 23, 2011

Joel Palin
Luminant Mining Company LLC
500 North Akard Street, LP12-080B
Dallas, Texas 75201

RE: Luminant Mining Company LLC
Permit No. WQ0002697000

This letter is your notice that the Texas Commission on Environmental Quality (TCEQ) executive director (ED) has issued final approval of the above-named application. According to 30 Texas Administrative Code (TAC) Section 50.135 the approval became effective on the date the ED signed the permit or other approval. A copy of the final approval is enclosed and cites the effective date.

You may file a **motion to overturn** with the chief clerk. A motion to overturn is a request for the commission to review the TCEQ executive director's approval of the application. Any motion must explain why the commission should review the TCEQ executive director's action. According to 30 TAC Section 50.139 an action by the ED is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

A motion to overturn must be received by the chief clerk within 23 days after the date of this letter. An original and 7 copies of a motion must be filed with the chief clerk in person or by mail. The Chief Clerk's mailing address is Office of the Chief Clerk (MC 105), TCEQ, P.O. Box 13087, Austin, Texas 78711-3087. On the same day the motion is transmitted to the chief clerk, please provide copies to Robert Martinez, Environmental Law Division Director (MC 173), and Blas Coy, Public Interest Counsel (MC 103), both at the same TCEQ address listed above. If a motion is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the ED's approval. According to Texas Water Code Section 5.351 a person affected by the ED's approval must file a petition appealing the ED's approval in Travis County district court within 30 days after the <u>effective date of the approval</u>. Even if you request judicial review, you still must exhaust your administrative remedies, which includes filing a motion to overturn in accordance with the previous paragraphs.

Individual members of the public may seek further information by calling the TCEQ Office of Public Assistance, toll free, at 1-800-687-4040.

Sincerely,

LaDonna Castañuela

LaDonna Castañuela
Chief Clerk

LDC/ka

cc: Blas Coy, TCEQ Public Interest Counsel (MC 103)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 23, 2011

Mr. Joel Palin
Luminant Mining Company LLC
500 North Akard Street, LP12-080B
Dallas, Texas 75201

Re: Luminant Mining Company LLC, TPDES Permit No. WQ0002697000
(RN102805900; CN603263773)

Dear Mr. Palin:

Enclosed is a copy of the above referenced permit for a wastewater treatment facility issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

If you are receiving a Texas Pollutant Discharge Elimination System (TPDES) discharge permit and your system is a new facility or an existing facility that has been reporting to the Texas Commission on Environmental Quality (TCEQ), you may comply with self-reporting requirements by submitting discharge monitoring reports (DMR) electronically over the Web through STEERS (see enclosed flyer). Information about the electronic DMR (NetDMR) system is available at www.tceq.state.tx.us/goto/NetDMR. We encourage electronic reporting. Discharge facilities that do not use the NetDMR system will receive paper DMR forms and instructions from the TCEQ Enforcement Division or from the U.S. Environmental Protection Agency (EPA) if the facility has been submitting DMRs to EPA.

If you are receiving a land application (no discharge) permit and are required to report monitoring results, self-reporting forms and instructions will be forwarded to you by the TCEQ Enforcement Division.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit. When the agency receives this form, the appropriate permit requirements will be activated in the compliance system database so that accurate monitoring and reporting can occur.

Should you have any questions, please contact Ms. Melinda Luxemburg, P.E. of the TCEQ's Wastewater Permitting Section at (512) 239-4671 or if by correspondence, include MC 148 in the letterhead address at the bottom of the previous page.

Sincerely,

Charles W. Maguire, Director
Water Quality Division
Texas Commission on Environmental Quality

CWM/ML/evm

Enclosures

cc: TCEQ, Region 5

NetDMR: Online Reporting of Discharge Monitoring Data

What is NetDMR?

NetDMR is a Web-based tool that allows you as a Texas Pollutant Discharge Elimination System (TPDES) permittee to electronically sign and submit your discharge monitoring reports (DMRs) to the Texas Commission on Environmental Quality. The data is then automatically submitted to the EPA's Integrated Compliance Information System (ICIS)-NPDES database.

NetDMR benefits for permittees:

- Offers an alternative to paper submissions, reducing your paperwork burden.
- Improves your data quality by automatically error checking and validating data prior to your submission to the TCEQ.
- Aids in the timeliness of your DMR data submissions.
- You can import DMR data for multiple outfalls at the same time.
- You can sign your DMRs electronically.
- You receive confirmation of your submission.
- You can access up to five years of electronic copies.
- You can submit attachments such as lab data, photographs, or other documentation relevant to the DMR.

There are several types of NetDMR users, and each user can be assigned one or more roles.

NetDMR Users

- **Permittee User**—you work for an organization that is required to submit DMRs under a TPDES permit.
- **Data Provider (e.g., analytical laboratory, consultant)**—you support an organization that is required to submit DMRs as part of a TPDES permit.

NetDMR Roles

- **Permittee Read-only:** able to view DMRs associated with the permit, but not allowed to update or modify DMR data.
- **Edit Access:** able to view and modify DMRs and DMR data.
- **Signatory:** has authority to sign and submit DMRs on behalf of your organization. A request for the signatory role requires submission of a subscriber agreement to the TCEQ.
- **Permit Administrator:** able to approve all DMR read-only and edit requests for a permit.

If you as a permittee so choose, one person can fulfill all the necessary roles in NetDMR—meaning, one person can both enter the data and have signatory authority to submit the data. In that case, that person would need to have the role of signatory.

Who can report?

TPDES permittees required to submit DMRs may use NetDMR after requesting and receiving permission from the TCEQ. After the TCEQ has approved your request, the NetDMR tool enables you to complete your DMRs via a secure Internet connection.

DMR data can be submitted electronically through NetDMR for the following TPDES permits:

- Industrial wastewater discharge individual permit
- Domestic wastewater discharge individual permit
- Authorizations under the TPDES Wastewater General Permit for discharges from concrete production facilities (TXG110000)
- Authorizations under the TPDES Wastewater General Permit for discharges of wastewater from concentrated aquatic-animal production facilities and certain related activities (TXG130000)
- Authorizations under the TPDES Wastewater General Permit for discharges contaminated with petroleum fuel or petroleum substances (TXG830000)
- Authorizations under the TPDES Wastewater General Permit for discharges of wastewater and contact storm water from petroleum bulk stations and terminals (TXG340000)

What reports cannot be submitted through NetDMR?

- **Monthly Effluent Reports**—If you are required to submit MERs, you must continue submitting paper forms to the TCEQ. MER data cannot be submitted through the NetDMR system.
- **Concentrated Animal Feeding Operation General Permit Reports**—Annual reports required by authorizations under the TPDES CAFO General Permit must continue to be submitted by paper.

- **Other required reports**—Individual and general permits with reporting requirements that you must continue to submit in paper form by mail include:
  - ☐ pretreatment semiannual and annual reports required in a permit or pretreatment program
  - ☐ biomonitoring quarterly, semiannual, and annual reports required in a permit
  - ☐ sludge beneficial-land-use quarterly and annual reports (domestic permits and sludge disposal)
  - ☐ multi-sector general permit benchmark testing
  - ☐ groundwater reports required in a permit
  - ☐ other reports that relate to compliance activities specified in your permit (for example, a construction schedule)
  - ☐ notices of noncompliance

Is NetDMR secure?

Yes. Communications with NetDMR are secured by your password, responses to security questions, and use of the Secure Sockets Layer protocol commonly used by online banking sites.

For more information:

Visit the NetDMR Web page at <**www.tceq.state.tx.us/goto/NetDMR**>.
Submit e-mails to <**NetDMR@tceq.state.tx.us**>.
Call **512-239-eDMR**.

Notification of Completion of Wastewater Treatment Facility

TCEQ

If you have questions about completing this form or about the Water Quality Permit program, please contact the Applications Review and Processing Team at 512/239-4671.

Permit Information

TCEQ Water Quality Permit No.: ____________________ EPA I.D. No.: TX____________________

Facility Information

Permitted Flow (MGD): ______________ Phase of Operation (*check one*): ☐ Interim ☐ Final

Estimated or Actual Date of Operation (Month/Day/Year): ______________________________

Operator Information

Name: ____

Class of Operator Certification: ______________ Operator Certification Number: ____________________

Employed By: ____

Responsible Official

Name: ______________________________ Title: ____________________

Phone: ______________ Fax: ______________ Email: ____________________

Street No. ______________ Street name: ______________________________

OR P.O. Box __________ City: ______________ State: __________ Zip code: ____________

Signature: ______________________________ Date: ____________________

This form should be completed when a facility is placed operational or goes into a new phase of operation. The completed form should be returned at least 45 days before you plan to bring the facility on line.

Mail completed form to: Texas Commission on Environmental Quality
Customer Information and Applications Processing Section
Applications Review and Processing Team (MC-148)
PO Box 13087
Austin TX 78711-3087

OR

Fax completed form to: 512/239-0884 "ATTENTION: APPLICATIONS REVIEW AND PROCESSING TEAM"

TPDES PERMIT NO. WQ0002697000
[For TCEQ office use only - EPA I.D. No. TX0068357]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O Box 13087
Austin, Texas 78711-3087

This is a renewal of TPDES Permit No. WQ0002697000, issued on, October 31, 2008.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Luminant Mining Company LLC

whose mailing address is

500 North Akard Street, LP12-080B
Dallas, Texas 75201

is authorized to treat and discharge wastes from the Monticello Lignite Mining Areas, a lignite surface mining facility (SIC 1221)

located north and south of Interstate Highway 30, between the City of Winfield and the City of Mount Pleasant, Titus and Franklin Counties, Texas

via Outfalls 001 and 101 to East Piney Creek, Piney Creek, Ripley Creek, Dorsey Creek, and their tributaries; thence to White Oak Creek; thence to the Sulphur/South Sulphur River in Segment No. 0303 of the Sulphur River Basin; via Outfalls 002 and 102 to Tankersley Creek (above Tankersley Lake); thence to Tankersley Lake; thence to Tankersley Creek (below Tankersley Lake); and via another Outfall 002 and 102 to Dragoo Creek, thence to Tankersley Creek (below Tankersley Lake); and via another Outfall 002 and 102 to Hayes Creek (above New City Lake); thence to New City Lake; thence to Hayes Creek (below New City Lake); thence to Hart Creek; thence from these Outfalls 002 and 102 discharge routes to Big Cypress Creek Below Lake Bob Sandlin in Segment No. 0404 of the Cypress Creek Basin; via Outfalls 003 and 103 to Smith Creek; thence to Blundell Creek; and via another Outfall 003 and 103 to Blundell Creek; thence from these Outfalls 003 and 103 discharge routes to Lake Bob Sandlin in Segment No. 0408 of the Cypress Creek Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight on January 1, 2016.

ISSUED DATE: February 16, 2011

For the Commission

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water, surface water runoff, and treated domestic wastewater from "active mining area" (*1) sedimentation ponds in the Sulphur/South Sulphur River (Segment No. 0303) watershed, subject to the following effluent limitations:

   Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow (million gallons per day, MGD)	(Report, MGD)	(Report, MGD)	N/A	1/week (*2)	Estimate
Total Suspended Solids	35	70	70 (*3)	1/week (*2)	Grab (*4)
Iron, Total	3.0	6.0	6.0 (*3)	1/week (*2)	Grab (*4)
Selenium, Total	N/A	0.036	0.036 (*3)	1/6 months (*2)	Grab (*4)

(*1) See Other Requirement Nos. 2, 3 and 4.
(*2) When discharging. See Other Requirements No. 7.
(*3) Applies to the discharge from each individual retention pond.
(*4) Since more than one source is associated with this particular waste category, individual samples from each source (See Other Requirement No. 14) shall be analyzed and then arithmetically flow-weighted for reporting compliance with the above effluent limitations. For pH, individual samples shall be analyzed separately and the highest and lowest pH shall be reported.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample (*4).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 001, where wastewater discharges from the active mining sedimentation ponds associated with this outfall (see Other Requirement No. 3), and prior to discharge to the Sulphur/South Sulphur watershed (Segment No. 0303).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water and surface runoff from "active mining area" (*1) sedimentation ponds in the Big Cypress Creek Below Lake Bob Sandlin (Segment No. 0404) watershed, subject to the following effluent limitations:

   Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow (million gallons per day, MGD)	(Report, MGD)	(Report, MGD)	N/A	1/week (*2)	Estimate
Total Suspended Solids	35	70	70 (*3)	1/week (*2)	Grab (*4)
Iron, Total	3.0	6.0	6.0 (*3)	1/week (*2)	Grab (*4)
Selenium, Total	N/A	0.036	0.036 (*3)	1/month (*2)	Grab (*4)

(*1) See Other Requirement Nos. 2, 3 and 4.
(*2) When discharging. See Other Requirements No. 7.
(*3) Applies to the discharge from each individual retention pond.
(*4) Since more than one source is associated with this particular waste category, individual samples from each source (See Other Requirement No. 14) shall be analyzed and then arithmetically flow-weighted for reporting compliance with the above effluent limitations. For pH, individual samples shall be analyzed separately and the highest and lowest pH shall be reported.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample (*4).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 002, where wastewater discharges from the active mining sedimentation ponds associated with this outfall (see Other Requirement No. 3), and prior to discharge to Big Cypress Creek Below Lake Bob Sandlin watershed (Segment No. 0404).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water and surface water runoff, and treated domestic wastewater from "active mining area" (*1) sedimentation ponds in the Lake Bob Sandlin (Segment No. 0408) watershed, subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow (million gallons per day, MGD)	(Report, MGD)	(Report, MGD)	N/A	1/week (*2)	Estimate
Total Suspended Solids	35	70	70 (*3)	1/week (*2)	Grab (*4)
Iron, Total	3.5	7.0	7.0 (*3)	1/week (*2)	Grab (*4)
Selenium, Total	N/A	Report	N/A	1/6 months (*2)	Grab (*4)
Aluminum, Total (Interim *5)	N/A	Report	N/A	1/month (*2)	Grab (*4)
Aluminum, Total (Final *6)	N/A	1.76	1.76	1/month (*2)	Grab (*4)

(*1) See Other Requirement Nos. 2, 3 and 4.
(*2) When discharging. See Other Requirements No. 7.
(*3) Applies to the discharge from each individual retention pond.
(*4) Since more than one source is associated with this particular waste category, individual samples from each source (See Other Requirement No. 14) shall be analyzed and then arithmetically flow-weighted for reporting compliance with the above effluent limitations. For pH, individual samples shall be analyzed separately and the highest and lowest pH shall be reported.
(*5) Beginning upon the permit issuance date and lasting three years from the permit issuance date (see Other Requirement No. 15).
(*6) Beginning three years from the permit issuance date and lasting through the date of permit expiration.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample (*4).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 003, where wastewater discharges from the active mining sedimentation ponds associated with this outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge "post mining area" (*1) runoff, wastewater from sedimentation (retention) ponds in the "post mining area" (*1) and previously monitored effluents (*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
				Measurement Frequency	Sample Type
Flow (million gallons per day, MGD)	(Report, MGD)	(Report, MGD)	N/A	1/week (*3)	Estimate
Settleable Solids (milliliters/liter, ml/l)	N/A	(0.5 ml/l) (*4)(*6)	(0.5 ml/l) (*4)(*6)	1/week (*3)	Grab (*5)

(*1) See Other Requirement Nos. 2, 3 and 4.
(*2) See Other Requirement No. 8.
(*3) When discharging.
(*4) This limit does not apply when the discharge is caused by a precipitation event (or series of storms or snowmelt equivalent volume) greater than the 10-year/24-hour precipitation event.
(*5) Since more than one source is associated with this particular waste category, individual samples from each source (See Other Requirement No. 14) shall be analyzed and then arithmetically flow-weighted for reporting compliance with the above effluent limitations. For pH, individual samples shall be analyzed separately and the highest and lowest pH shall be reported.
(*6) Applies to the discharge from each individual retention pond.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3), by grab sample (*5).
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location(s):

   At Outfall 101, where wastewater discharges from the post mining sedimentation (retention) ponds associated with this outfall (See Other Requirement No, 3) and prior to discharge to the Sulphur/South Sulphur River watershed (Segment No. 0303).

   At Outfall 102, where wastewater discharges from the post mining sedimentation (retention) ponds associated with this outfall (See Other Requirement No, 3) and prior to discharge to Big Cypress Creek Below Lake Bob Sandlin watershed (Segment No. 0404).

   At Outfall 103, where wastewater discharges from the post mining sedimentation (retention) ponds associated with this outfall (See Other Requirement No, 3) and prior to discharge to the Lake Bob Sandlin watershed (Segment No. 0408).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated domestic wastewater, subject to the following effluent limitations:

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/week (*1)	Estimate
Biochemical Oxygen Demand (5-day)	20	45	45	1/week (*1)	Grab
Total Suspended Solids	20	45	45	1/week (*1)	Grab
E. Coli (CFU or MPN/100 ml) (*2)	N/A	(Report)	N/A	1/month (*1)	Grab

(*1) When discharge occurs.
(*2) Colony forming units or most probable number per 100 ml (see Other Requirement No. 11).

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*1), by grab sample.

3. The effluent shall contain chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored 1/week (*1), by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location: At Outfall 201, at the outlet of the North Winfield sewage treatment plant and prior to mixing with any other waters discharged via Outfall 001.

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated domestic wastewater, subject to the following effluent limitations:

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/week (*1)	Estimate
Biochemical Oxygen Demand (5-day)	20	45	45	1/week (*1)	Grab
Total Suspended Solids	20	45	45	1/week (*1)	Grab

(*1) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*1), by grab sample.

3. The effluent shall contain chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored 1/week (*1), by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location: At Outfall 203, at the outlet of the South Winfield sewage treatment plant and prior to mixing with any other waters discharged via Outfall 003.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

      ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

   b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

   c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

   d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

      The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (Fecal coliform, E. coli, or Enterococci) – the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month.

The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes .

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TCW Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

   a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

   b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

   c. Records of monitoring activities shall include the following:

      i. date, time, and place of sample or measurement;
      ii. identity of individual who collected the sample or made the measurement.
      iii. date and time of analysis;
      iv. identity of the individual and laboratory who performed the analysis;
      v. the technique or method of analysis; and
      vi. the results of the analysis or measurement and quality assurance/quality control records.

   The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

   If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

   All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

   Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).
      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.
      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. One hundred micrograms per liter (100 μg/L);
ii. Two hundred micrograms per liter (200 μg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. Five hundred micrograms per liter (500 μg/L);
ii. One milligram per liter (1 mg/L) for antimony;
iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. For the purpose of this paragraph, adequate notice shall include information on:

i. The quality and quantity of effluent introduced into the POTW; and
ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

   i. Violation of any terms or conditions of this permit;
   ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
   iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission.

Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a)for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit.

Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

8. Property Rights - A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

i. the permittee;
ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee;
ii. the permit number(s);
iii. the bankruptcy court in which the petition for bankruptcy was filed; and
iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

b. The permittee shall submit a closure plan for review and approval to the Land Application Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information.

If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:

    a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

    b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

    c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

    d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.

    e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

    f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

        i. Volume of waste and date(s) generated from treatment process;
        ii. Volume of waste disposed of on-site or shipped off-site;
        iii. Date(s) of disposal;
        iv. Identity of hauler or transporter;
        v. Location of disposal site; and
        vi. Method of final disposal.

    The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 5, within 24 hours from the time the permittee becomes aware of the violation followed by a written report within five working days to TCEQ Region 5 and the Enforcement Division (MC 224):

POLLUTANT	MAL (mg/l)
Total Aluminum	0.030
Total Iron	1.0
Total Selenium	0.010
Settleable Solids	0.4 ml/l

Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the minimum analytical level (MAL) for the parameters specified above.

When an analysis of an effluent sample for any of the parameters listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero (0) shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero (0) based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form.

"The reported value(s) of zero (0) for [list parameter(s)] on the self-reporting form for [monitoring period date range] is based on the following conditions: 1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and 2) the analytical results contained no detectable levels above the specified MAL."

When an analysis of an effluent sample for a parameter indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that parameter, the level of detection achieved shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. A zero (0) may not be used.

2. DEFINITIONS:

A. The term "active mining area" is defined as the area, on and beneath land, used or disturbed in activity related to the extraction, removal, or recovery of coal from its natural deposits. This term excludes coal preparation plants, coal preparation plant associated areas, and post-mining areas.

B. The term "post-mining area" is defined as a reclamation area or the underground workings of an underground coal mine after the extraction, removal, or recovery of coal from its natural deposit has ceased and prior to bond release.

C. The term "reclamation area" is defined as the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced.

D. The term "bond release" is defined as the time at which the appropriate regulatory authority returns a reclamation or performance bond based upon its determination that reclamation work (including, in the case of an underground mine, mine sealing and abandonment procedures) has been satisfactorily completed in accordance with Phase II as defined by 16 Texas Administrative Code (TAC) §12.313(a)(2).

E. The term "10-year, 24-hour precipitation events" is defined as the maximum 24-hour precipitation event with a probable recurrence interval of once in ten years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed therefrom.

F. The term "settleable solids" is that matter measured by the volumetric method specified in 40 CFR §434.64 and as follows: Fill an Imhoff cone to the one-liter mark with a thoroughly mixed sample. Allow to settle undisturbed for 45 minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for 15 minutes longer. Record the volume of settled material in the cone as milliliters per liter. Where a separation of settleable and floating materials occurs, do not include the floating material in the reading. Notwithstanding any provision of 40 CFR Part 136, the method detection limit for measuring settleable solids under this part shall be 0.4 ml/l.

G. The term "mine drainage" means any drainage, and any water pumped or siphoned, from an active mining area or a post-mining area.

H. The term "alkaline mine drainage" means mine drainage which, before any treatment, has a pH equal to or greater than 6.0 and total iron concentration of less than 10 mg/l.

3. Location Information: The following table shows the mine area, operational phase, related outfalls, receiving waters and tributaries:

Outfall No.	Mine Phase	Pond Identification No.	Receiving Water	Segment No.
001	Active	J-2, L-1, L-2, L-4 M-1 A-15 A-2, A-19, B-2	Piney Creek and/or tributaries East Piney Creek and/or tributaries Ripley Creek and/or tributaries Dorsey Creek and/or tributaries	0303
002	Active	J-10 G-14 GR-15, G-13 J-1	Tankersley Creek above Tankersley Lake and/or tributaries Tankersley Creek below Tankersley Lake and/or tributaries Dragoo Creek and/or tributaries Hayes Creek and/or tributaries	0404
003	Active	F-10, G-6 F-2, F-11 F-12 G-7, G-11	Smith Creek and/or tributaries Blundell Creek and/or tributaries Lake Monticello and/or tributaries Lake Bob Sandlin and/or tributaries	0408

Outfall No.	Mine Phase	Pond Identification No.	Receiving Water	Segment No.
101	Post	A-3	Ripley Creek and/or tributaries	0303
102	Post	J-3, J-4 K-2 C-20	Tankersley Creek above Tankersley Lake and/or tributaries Tankersley Lake and/or tributaries Dragoo Creek and/or tributaries Hayes Creek and/or tributaries	0404
103	Post	A-28, G-24A, G-1, F2R3 H-1, H-3, and H-4	Smith Creek and/or tributaries Blundell Creek and/or tributaries	0408

Pond locations may be revised by the permittee if it becomes necessary to eliminate or establish new holding ponds.

All retention ponds shall be constructed prior to disturbing the natural soils in preparation for mining activity. As each discharge point is developed, TCEQ, Industrial Team, Wastewater Permitting Section (MC-148) and Region 5 Offices shall be notified.

Discharges from the retention ponds shall be monitored in accordance with this permit from the time the natural soils are disturbed until reclamation of the disturbed soils is complete and until the performance bond (Phase Two) issued by the appropriate authority has been released. At least 10 days prior to any such action, the TCEQ, Water Quality Applications Review & Processing Team (MC-148) and Region 5 Offices shall be notified in writing of the permittee's intent to close any retention pond or to discontinue monitoring.

The notification shall include a list of all ponds and a map of the mine site which shows the location and drainage area of all ponds in the "active mining areas" and "post-mining areas." Pond locations may be revised by the permittee if it becomes necessary to eliminate or establish new holding ponds. The design dimensions and construction information for each pond shall be maintained at the mine site and be made available to TCEQ personnel upon request.

4. Miscellaneous Provisions - based on 40 CFR 434, Subpart F (provisions concerning acid or ferruginous drainage is not applicable as the Lignite Mining Areas exhibit alkaline drainage as defined by 40 CFR § 434.11 (c)). Any discharge or increase in the volume of a discharge caused by precipitation or during precipitation shall be analyzed and reported as a single grab sample for compliance with the following effluent limitations.

   a. Outfalls 001, 002 and 003 (Alkaline Mine Drainage – Active Mining Area):

      i. Effluent discharges from an active mining area caused by precipitation within any 24-hour period **less than or equal to the 10-year, 24-hour precipitation event**, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
Settleable Solids	0.5 ml/l maximum not to be exceeded
pH, standard units, SU	6.0 SU minimum to 9.0 SU maximum at all times

ii. Effluent discharges from an active mining area caused by precipitation within any 24-hour period **greater than the 10-year, 24-hour precipitation event**, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
pH, standard units, SU	6.0 SU minimum to 9.0 SU maximum at all times

b. Outfalls 101, 102 and 103 (Post Mining Area):

Effluent discharges from Post-Mining Areas, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
pH, standard units, SU	6.0 SU minimum to 9.0 SU maximum at all times

c. The permittee bears the burden of proof in establishing the volume of a precipitation event.

5. This provision applies to the treatment and disposal of domestic wastewater at internal Outfalls 201 and 203.

On-site disposal of sewage sludge is not authorized. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335 of this title) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312 of this title. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335 of this title) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 335 of this title. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

a) Volume (dry weight basis) of sludge disposed.
b) Date of disposal.
c) Identity and registration number of hauler.
d) Location and registration or permit number of disposal site.
e) Method of final disposal.

The above records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

6. This provision supersedes and replaces (Provision 1) MONITORING AND REPORTING REQUIREMENTS, (Paragraph 1) 1. Self-Reporting, as defined on Page 4 of this permit.

Monitoring results shall be provided at intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the location(s) specified on the reporting form or the instruction sheet, by the 25th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on the approved TPDES self-reporting form, Discharge Monitoring Report (DMR) Form EPA No. 3320-1, signed and certified as required by Monitoring and Reporting Requirements No. 10.

7. Monitoring results shall be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports shall be submitted in September of each year.

For pollutants which are monitored twice per year, the first effluent report shall be submitted six months after the date of permit issuance and subsequent reports every six months thereafter. For a pollutant which is required to be monitored 1/6 months, the six-month periods are defined as January through June and July through December. A minimum of one discharge shall be monitored for the pollutant(s) during each six month period, provided there is a discharge via the outfall during said period. For pollutants which are monitored four times per year, the first effluent report shall be submitted three months after the date of permit issuance and subsequent reports every three months thereafter.

8. PREVIOUSLY MONITORED EFFLUENTS

The permittee may discharge "active mining area" effluent to "post mining area" retention ponds, provided that the discharge meets the following requirements:

a. "Active mining area" effluent must meet the limitations specified on Pages 2, 2a and 2b of this permit prior to being discharge to the "post mining area" retention ponds.

b. Dikes and berms must be in place to prevent storm water draining from the "active mining area" to the "post mining area" retention ponds.

c. The drainage area of the post mining retention pond must be a reclamation area as defined in 40 CFR Part 434 - Coal Mining Point Source Category.

9. All discharges from Outfalls 001, 002, 003, 101, 102, and 103 shall comply with the limitations for hazardous metals as regulated under Title 30, Texas Administrative Code (TAC) Chapter 319, Subchapter B "Hazardous Metals."

10. The following mixing zone definition applies to Outfalls 001, 101, 002, 102, 003, and 103: There is no mixing zone established for discharges to an intermittent stream. Acute toxic criteria apply at the point of discharge.

11. Within 180 days from the date of issuance of the permit, the permittee is required to initiate and complete an investigation to determine the cause of elevated bacteria levels in discharges via Outfall 101. Bacteria levels shall be evaluated by analyzing for E. Coli at Outfall 101. Additionally, the permittee is required to perform a corrective action if necessary, and ensure that future discharges do not contain elevated levels of E.Coli. The investigation and any corrective action report shall be submitted to the Industrial Permits Team, Wastewater Permitting Section (MC-148) within 180 days from the date of issuance of the permit. This permit may be reopened by staff to include additional requirements or effluent limitations based on the review of the report(s) submitted.

Table 1 shall be completed with the analytical results for Outfall 101 and sent to the TCEQ, Wastewater Permitting Section (MC 148), for a minimum of four (4) separate sampling events which are a minimum of one (1) week apart. Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations and/or monitoring requirements. Test methods utilized to determine compliance with the permit monitoring and reporting requirements and/or limitations shall be according to EPA methodology and sensitive enough to detect the parameters listed below at the minimum analytical level (MAL).

TABLE 1

Outfall No.	□C □G	**Effluent Concentration (µg/l)**					
Pollutants		**Samp.**	**Samp.**	**Samp.**	**Samp.**	**Averag**	**MAL**
E. Coli (CFU or MPN/100							N/A

* Colony forming units or most probable number per 100 ml. The average bacteria concentration is a geometric mean of the values for the effluent samples collected.

12. DUST SUPPRESSION

The permittee is authorized to utilize effluent from "active mining area" and "post mining area" sedimentation ponds for dust suppression. With respect to utilization of effluent for dust suppression, the permittee shall comply with the following requirements.

a. Dust suppression practices shall be designed and managed so as to prevent runoff, ponding of effluent, or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area.

b. Application of effluent for dust suppression shall be accomplished only when the area specified is in use. Dust suppression with effluent shall not occur during times when the ground has standing water, the ground is saturated, or within 24 hours of a rainfall event of 0.5 inches or greater during a 24-hour duration.

c. Spray fixtures for the dust suppression systems shall be of such design that they cannot be operated by unauthorized personnel.

13. The permittee is hereby placed on notice that this permit may be reviewed by the TCEQ after the completion of any new intensive water quality survey on Segment No. 0303 of the Sulphur River Basin and Segment Nos. 0404 and 0408 of the Cypress Creek Basin and any subsequent updating of the water quality model for Segment Nos. 0303, 0404 and 0408, in order to determine if the limitations and conditions contained herein are consistent with any such revised model. The permit may be amended pursuant to 30 TAC Sections 305.62(d), as a result of such review.

14. Additional Monitoring and Reporting Requirements for Retention Ponds Regulated by 40 CFR Part 434.

a. Sampling Requirements: In addition to the reporting required under this permit at pages 2, 2a, 2b and 2c, the permittee shall sample and analyze each effluent discharge at a once per two week basis for active mining area ponds and once per month for post mining areas. Analysis shall be conducted for effluent discharged from each retention pond constructed and operated under this permit, except for:

i. effluent discharge from retention ponds in a series, which shall be sampled at a point from the last pond in the series; and

ii. effluent discharges from multiple retention ponds commingled in a pipe or a man-made conveyance structure before discharging into waters in the state, which shall be sampled at a point prior to mixing with other waters.

Sampling is not required for those retention ponds which had no effluent discharge during the two week period for active and monthly period for post mining areas. The analytical results from the routine monitoring required on pages 2 through 2c may be used to fulfill the requirements of this provision provided the results are obtained from each individual pond discharge as required by this provision.

b. Effluent Limitations for Acid or Ferruginous Active Mining Areas: (N/A)

c. Effluent Limitations for Alkaline Active Mining Areas: (40 CFR Part 434, Subparts D and F)

i. Effluent discharges from an active mining area **not caused by precipitation** within any 24-hour period, shall not exceed the following limitations:

POLLUTANT	DAILY AVERAGE	DAILY MAXIMUM
Total Iron (Outfalls 001 and 002)	3.0 mg/l	6.0 mg/l
Total Iron (Outfall 003)	3.5 mg/l	7.0 mg/l
Total Suspended Solids	35 mg/l	70 mg/l
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)	

ii. Effluent discharges from an active mining area caused by precipitation within any 24-hour period **less than or equal to the 10-year, 24-hour precipitation event**, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
Settleable Solids	0.5 ml/l maximum not to be exceeded
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)

iii. Effluent discharges from an active mining area caused by precipitation within any 24-hour period **greater than the 10-year, 24-hour precipitation event**, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)

d. Effluent Limitations for Post Mining Areas: (40 CFR Part 434, Subparts E and F)

i. Effluent discharges from Post-Mining Areas **not caused by precipitation**, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
Settleable Solids	0.5 ml/l maximum not to be exceeded
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)

ii. Effluent discharges from Post-Mining Areas within any 24-hour period **greater than the 10-year, 24-hour precipitation event**, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)

e. The permittee bears the burden of proof in establishing the volume of a precipitation event.

f. Retention Pond Sampling Plan: The permittee shall prepare and maintain onsite, readily available for inspection by TCEQ staff, a Retention Pond Sampling Plan that shows all of the retention pond effluent discharge sampling locations along with the designated outfall number associated with each sampling location. This sampling plan shall be updated as necessary to show retention ponds that come in and out of service.

g. Annual Reporting: On or before the end of January, April, July, and October; the permittee shall submit the effluent discharge monitoring data collected for the prior calendar quarter pursuant to this monitoring and reporting requirement to the TCEQ Enforcement Division (MC-224) and the Region 5 Office. The effluent discharge monitoring data reported the preceding two years shall be submitted by the permittee as an attachment to all permit renewal and amendment applications.

15. SCHEDULE OF COMPLIANCE FOR WATER QUALITY BASED EFFLUENT LIMITS

The permittee shall comply with the following schedule of activities for the attainment of water quality-based final effluent limitations for total aluminum at Outfall 003:

A. Determine exceedance cause(s);
B. Develop control options;
C. Evaluate and select control mechanisms;
D. Implement corrective action; and
E. Attain final effluent limitations no later than three years from this permit issuance date.

The permittee shall submit quarterly progress reports in accordance with the following schedule. The requirement to submit quarterly progress reports shall expire three years from this permit issuance date.

<u>PROGRESS REPORT DATE</u>
January 1
April 1
July 1
October 1

The quarterly progress reports shall include a discussion of the interim requirements that have been completed at the time of the report and shall address the progress towards attaining the water quality-based final effluent limitations for total aluminum at Outfall 003 no later than three years from this permit issuance date.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

All reports shall be submitted to the Region 5 Office and to the Enforcement Division (MC 224) of the TCEQ.

TPDES PERMIT NO. WQ0003017000
*[For TCEQ office use only -
EPA I.D. No. TX0062936]*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P. O. Box 13087
Austin, Texas 78711-3087

This permit supersedes and replaces NPDES Permit No. TX0062936 issued July 22, 1993, and TNRCC Permit No. 03017 issued May 7, 1991.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Pilgrim's Pride Corporation

whose mailing address is

P. O. Box 93
Pittsburg, Texas 75686

is authorized to treat and discharge wastes from Pilgrim's Pride Corporation Southwest Wastewater Plant (SIC 2015)

located at 664 Farm-to-Market Road 127 West, Mt. Pleasant, Titus County, Texas

to Tankersley Creek; thence to Big Cypress Creek Below Lake Bob Sandlin in Segment No. 0404 of the Cypress Creek Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight three years after the date of permit issuance.

ISSUED DATE: May 25, 2012

For the Commission

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge treated process wastewater and treated domestic wastewater subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 3.5 million gallons per day (MGD). The daily maximum flow shall not exceed 5.0 MGD.

Effluent Characteristics	Discharge Limitations					Minimum Self-Monitoring Requirements	
	Daily Average		Daily Maximum		Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L	mg/L	Measurement Frequency	Sample Type
Flow (MGD)	(3.5)		(5.0)		N/A	Continuous	Record
Carbonaceous Biochemical Oxygen Demand (5-day) (*1)	225	N/A	450	N/A	30	3/week	Composite
Carbonaceous Biochemical Oxygen Demand (5-day) (*2)	146	5	292	10	10	3/week	Composite
Total Suspended Solids	376	15	751	30	30	3/week	Composite
Biochemical Oxygen Demand (5-day)	454	16	738	26	26	3/week	Composite
Ammonia (as N)							
April – October	29	1	58	2	2	3/week	Composite
November – March (*1)	113	4	227	8	8	3/week	Composite
November – March (*2)	113	4	170	6	6	3/week	Composite
Total Nitrogen	2,922	103	4,171	147	147	3/week	Composite
Chloride	Report	Report	Report	Report	N/A	1/week	Composite
Sulfate (*10)	Report	Report	Report	Report	N/A	1/week	Composite
Sulfate (*15)	9,815	323	20,766	683	683	1/week	Composite
Total Dissolved Solids	Report	Report	Report	Report	N/A	1/week	Composite
Conductivity (mmhos/cm)	(Report)		(Report)		N/A	3/week	Grab
Oil and Grease (*12)	227	8	376	14	14	3/week	Grab
Total Residual Chlorine (*3)	N/A	N/A	N/A	1.0	1.0	1/day	Grab
Total Phosphorus (*10)	Report	Report	Report	Report	N/A	1/week	Composite
Total Phosphorus (*11)	144.89	Report	Report	Report	N/A	1/week	Composite
Total Phosphorus – Monthly (*4)	N/A	N/A	Report (lbs/month)		N/A	1/month	Calculation
Total Phosphorus – Annual (*5)(*10)	N/A	N/A	Report	N/A	N/A	1/month	Summation
Total Phosphorus – Annual (*5)(*11)	N/A	N/A	44,650	N/A	N/A	1/month	Summation
E. coli (*6)	(126)		(394)		(394)	3/week	Grab
Fecal Coliform (*6)	N/A		(200)		(200)	1/month	Grab

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Lethal Whole Effluent Toxicity (WET) Limit 98% (PCS /STORET 22414) (*7)					
Ceriodaphnia dubia (7-day chronic NOEC) (*8)	98% (*9)	98% (*9)	N/A	1/quarter	Composite
Pimephales promelas (7-day chronic NOEC) (*8)	98% (*9)	98% (*9)	N/A	1/quarter	Composite
Sublethal WET Limit (Parameter 22414) (*13)					
Ceriodaphnia dubia (7-day chronic NOEC)(*8)	Report	Report	N/A	1/quarter	Composite
Sublethal WET limit 80% (Parameter 22414) (*14)					
Ceriodaphnia dubia (7-day chronic NOEC)(*8)	80%	80%	N/A	1/quarter	Composite

(*1) Effective beginning on date of permit issuance and lasting 364 days.
(*2) Effective beginning 365 days after the date of issuance and lasting through the expiration date.
(*3) The effluent shall contain a chlorine residual of at least 1.0 mg/L after a detention time of at least 20 minutes (based on peak flow) and shall be monitored 1/day by grab sample prior to dechlorination. The permittee shall dechlorinate the chlorinated effluent to less than 0.1 mg/L chlorine residual. An equivalent method of disinfection may be substituted only with prior approval from the Executive Director of the TCEQ.
(*4) Total lbs of total phosphorus discharged during the calendar month (lbs/month).
(*5) Total lbs of total phosphorus discharged during the previous twelve months (annual rolling mass limit).
(*6) Colony forming units (CFU) / 100 ml or most probable number (MPN) / 100 ml.
(*7) The lethal WET limit No Observable Effect Concentration (NOEC) of not less than 98% is effective at the permit issue date.
(*8) The NOEC is defined as the greatest effluent dilution at which a significant effect is not demonstrated. A significant effect is defined as a statistically significant difference between a specified effluent dilution and the control for toxicity (lethal or sublethal effects, whichever is specified).

(*9) Report the NOEC value for survival.
(*10) Effective beginning on date of permit issuance and lasting 2 years 363 days. See Other Requirement No. 11.
(*11) Effective beginning 2 years 364 days after the date of issuance and lasting through the expiration date. See Other Requirement No. 10.
(*12) Total recoverable oil and grease measured as n-hexane extractable material.
(*13) Report the sublethal NOEC.
(*14) The sublethal WET limit NOEC of not less than 80% becomes effective thirty-four months from the permit issue date, or one day before the permit expiration date, whichever comes first.
(*15) Effective beginning 2 years 364 days after the date of issuance and lasting through the expiration date.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day by grab sample.

3. The effluent shall contain a minimum dissolved oxygen level of at least 6.0 mg/L and shall be monitored 3/week by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location: At Outfall 001(N 33° 08' 21.4" / W 94° 59' 51"), following the final treatment unit and prior to discharging to Tankersley Creek.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

      ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

   b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

   c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

   d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

      The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

   e. Bacteria concentration (Fecal coliform, E. coli, or Enterococci) – the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements of made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes .

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TWC Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time, and place of sample or measurement;
ii. identity of individual who collected the sample or made the measurement,
iii. date and time of analysis;
iv. identity of the individual and laboratory who performed the analysis;
v. the technique or method of analysis; and
vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

i. Unauthorized discharges as defined in Permit Condition 2(g).
ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.
iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

   a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

      i. One hundred micrograms per liter (100 μg/L);
      ii. Two hundred micrograms per liter (200 μg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
      iv. The level established by the TCEQ.

   b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

      i. Five hundred micrograms per liter (500 μg/L);
      ii. One milligram per liter (1 mg/L) for antimony;
      iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
      iv. The level established by the TCEQ.

10. Signatories to Reports

    All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:

    a. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;

    b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

    c. For the purpose of this paragraph, adequate notice shall include information on:

       i. The quality and quantity of effluent introduced into the POTW; and
       ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

   a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

   b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

      i. Violation of any terms or conditions of this permit;
      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a)for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

    a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

       i. the permittee;
       ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
       iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

    b. This notification must indicate:
       i. the name of the permittee;
       ii. the permit number(s);
       iii. the bankruptcy court in which the petition for bankruptcy was filed; and
       iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

   c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:

    a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

   i. Volume of waste and date(s) generated from treatment process;
   ii. Volume of waste disposed of on-site or shipped off-site;
   iii. Date(s) of disposal;
   iv. Identity of hauler or transporter;
   v. Location of disposal site; and
   vi. Method of final disposal.

   The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

TCEQ Revision 08/2008

OTHER REQUIREMENTS

1. A plant operator holding a valid Class B certificate of competency or higher, issued pursuant to 30 TAC Chapter 30, shall be on-site at the Southwest Plant whenever wastewater from the poultry processing plant is received. The certified operator shall conduct a daily visual inspection of the treatment facility. Records of these inspections shall be maintained on a weekly basis and be available at the plant site for inspection by authorized representatives of the Texas Commission on Environmental Quality (TCEQ) for a minimum period of three years.

2. The permittee shall maintain at all times a minimum of 24-inches of freeboard in the sludge lagoon.

3. The permittee shall maintain a measuring device in the sludge lagoon. The permittee shall monitor and record the level of the sludge lagoon daily, beginning upon date of issuance of the permit and continuing for at least one year after date of issuance. The records shall be maintained weekly and be available to at the plant site for at least three years for inspection by authorized representatives of the TCEQ.

4. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point where the discharge reaches Tankersley Creek.

5. A wastewater treatment plant unit may not be located within the 100-year floodplain unless the plant is protected from inundation and damage that may occur during such flood event.

6. The discharge shall not contain feathers, hair, stringers, animal parts, or paunch manure in the effluent.

7. Best Management Practices (BMPs):

   a. An operation and maintenance manual shall be available at the facility, and shall cover the recommended routine operation procedures and maintenance practices for the entire wastewater treatment facility. In addition to covering routine operation procedures and maintenance practices, the manual shall include, but is not limited to, the following:

      i. Procedures which will maximize wastewater treatment in a way which optimizes effluent quality.

      ii. Recommendations for specific operational adjustments to wastewater processing which would be necessary as a result of significant changes in production or influent wastewater loading.

      iii. Operation or maintenance procedures which account for storm water contributions that may affect the wastewater treatment facility or may affect on-site solid waste management.

      iv. Operations procedures for the on-site management of residuals or solid waste generated from wastewater treatment, which will prevent the creation of nuisances and ensure that unintentional releases do not occur which could pose adverse impacts to surface water or could cause contamination of soil or groundwater resources.

      v. Procedures which will prevent the creation of nuisances to the greatest extent practicable from wastewater treatment units while being operated, undergoing maintenance, or while out of service.

   b. The permittee shall operate and maintain the wastewater treatment facility according to the operation procedures and maintenance practices manual.

   c. A licensed professional engineer shall prepare an implementation plan for the selected sludge management method.

i. The plan shall be developed within six months of permit issuance and shall be implemented with one year after permit issuance.

ii. The plan may be amended at any time during the life of the permit with a 90 day notification to the Wastewater Permitting Section, Industrial Permits Team, (MC 148) of the TCEQ, and the TCEQ Region 5 Office.

iii. The permittee shall furnish a copy of the plan to authorized representatives of the TCEQ upon request.

8. Nutrients from the permitted discharge via Outfall 001 or other controllable sources shall not cause excessive growth of aquatic vegetation which impairs an existing, attainable, or designated use.

9. The sludge from the treatment process shall be digested, dewatered and disposed of in accordance with all the applicable rules of the TCEQ. The permittee shall ensure that the disposal of sludge does not cause any contamination of the ground or surface waters in the state. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

   a. Volume of sludge disposed
   b. Date of disposal
   c. Identity of hauler
   d. Location of disposal site
   e. Method of final disposal

   The above records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least three (3) years.

10. The annual maximum load of total phosphorus discharged via Outfall 001 shall not exceed 44,650 lbs/year. This limit is consistent with the required phosphorus load reductions identified in the TCEQ document *Implementation Plan for One Total Maximum Daily Load for Dissolved Oxygen in Lake O' the Pines Segment 0403,* approved July 9, 2009 (I-Plan) to ensure compliance with the TMDL for Dissolved Oxygen in Lake O' the Pines Segment No. 0403.

    Annual maximum load is defined as the total of all total phosphorus determinations taken within a period of 12 consecutive preceding months. It is calculated by adding the individual measurements together and taken during the previous 365 day period. The first load is calculated based on the number of measurements taken during the first month the permit goes into effect. The second reported load is calculated based on the number of measurements taken during the first and second month the permit is in effect. This calculation procedure will continue for a total of 12 months. When the permittee has a total of 13 months of data, then the first month of data will be dropped from the calculation and the 13th month of data will be included. This procedure will be followed for the life of the permit.

11. The permittee shall comply with the following schedule of activities for the attainment of water quality-based final effluent limitations for total phosphorus and sulfate at Outfall 001:

    (a) Determine exceedence cause(s);
    (b) Develop control options;
    (c) Evaluate and select control mechanisms;
    (d) Implement corrective action; and
    (e) Attain final effluent limitations no later than three years from the date of permit issuance.

The permittee shall submit quarterly progress reports in accordance with the following schedule. The requirement to submit quarterly progress reports shall expire two years 364 days from the date of permit issuance.

<u>PROGRESS REPORT DATE</u>
January 1
April 1
July 1
October 1

The quarterly progress reports shall include a discussion of the interim requirements that have been completed at the time of the report and shall address the progress towards attaining the water quality-based final effluent limitations for total phosphorus at Outfall 001 no later than three years from the date of permit issuance.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

All reports shall be submitted to the Region 5 Office and to the Enforcement Division (MC 224) of the TCEQ.

12. The permittee shall comply with the following schedule of activities for the attainment of the Whole Effluent Toxicity (WET) Limitation(s) on Page 2a for Outfall 001:

    A. Within 90 days of permit issuance- The permittee shall develop a WET compliance schedule plan (Plan) to initiate a toxicity identification strategy based upon: knowledge of their treatment system, influent/effluent characterization, Significant Industrial Users (SIUs), source waters, housekeeping practices, etc. The permittee shall submit the Plan to the TCEQ Standards Implementation Team (MC 150).

    B. Addition of Plan Milestones- The permittee shall submit an addendum to the Plan which includes milestones as pending studies dictate. The milestones below are provided as an example. Actual Plan milestones shall be based upon the previously prepared toxicity identification strategy and include the estimated date of completion.

       <u>Example</u>
       1. The permittee shall perform characterization studies to identify the possible cause of toxicity. Multiple studies may be necessary to correctly identify and confirm the cause.
       2. The permittee shall select and evaluate corrective action(s).
       3. The permittee shall implement the selected corrective action(s). Subsequent failures will require the permittee to re-evaluate the effectiveness of the correct action(s) or the possibility of an additional source of toxicity.

       The Plan addendum shall be submitted to the TCEQ Standards Implementation Team (MC 150) with a quarterly progress report indicated below.

    C. The permittee shall comply with the final WET limit(s) within 34 months from the date of permit issuance or one day before the permit expires, whichever comes first.

D. If the toxicant or a best management practice is identified prior to the effective date of the permit, the permittee may submit a major amendment application requesting the addition of a chemical-specific limit or best management practice.

E. The permittee shall submit quarterly progress reports in accordance with the following compliance schedule. The requirement to submit quarterly progress reports shall expire 34 months from the date of permit issuance.

PROGRESS REPORT DATES
January 1
April 1
July 1
October 1

The quarterly progress reports shall include a discussion of the milestones completed at the time of the report and shall address the progress towards attaining the final WET limit(s) at Outfall 001 no later than 34 months from the date of permit issuance or one day before the permit expires, whichever comes first.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each scheduled due date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled milestone identified within the submitted plan.

All progress reports shall be submitted to the TCEQ Standards Implementation Team (MC 150). Copies of all progress reports and related documents shall be submitted to the Whole Effluent Toxicity Coordinator (6WQ-P), U.S. Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202.

CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency and Methodology

a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.

b. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures and quality assurance requirements specified in this Part of the permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition (EPA-821-R-02-013), or its most recent update:

1) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1001.0 or the most recent update). This test should be terminated when 60% of the surviving adults in the control produce three broods or at the end of eight days, whichever comes first. This test shall be conducted once per quarter.

2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0 or the most recent update). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations are 31%, 41%, 55%, 80%, and 98% effluent. The critical dilution, defined as 98% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

d. This permit may be amended to require a WET limit, a Chemical-Specific (CS) limit, a Best Management Practice (BMP), or other appropriate actions to address toxicity to the fathead minnow. The permittee may be required to conduct a sublethal Toxicity Reduction Evaluation (TRE) after multiple toxic events.

e. At the permit issue date, the lethal (survival) No Observed Effect Concentration (NOEC) effluent limitation of not less than 98% (see the EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS section) for both test species is effective.

f. At the permit issue date, if a test for either test species fails to pass the lethal endpoint at the 98% effluent dilution, the testing frequency will increase to monthly for that test species until such time compliance with the NOEC effluent limitation is demonstrated for a period of three consecutive months, at which time a quarterly testing frequency may be resumed.

g. Thirty-four months from the permit issue date, the sublethal (reproduction) No Observed Effect Concentration (NOEC) effluent limitation of not less than 80% (see the EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS section) for the water flea becomes effective.

h. Thirty-four months from the permit issue date, if a water flea test fails to pass the sublethal endpoint at the 80% effluent dilution, the testing frequency will increase to monthly until such time compliance with the NOEC effluent limitation is demonstrated for a period of three consecutive months, at which time the quarterly testing frequency may be resumed.

i. Testing Frequency Reduction

1) If none of the first four consecutive quarterly fathead minnow tests demonstrates significant toxicity, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per year.

2) If one or more of the first four consecutive quarterly fathead minnow tests demonstrates significant toxicity, the permittee shall continue quarterly testing until the permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant toxicity, the permittee will resume a quarterly testing frequency until the permit is reissued.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fail to meet the following criteria:

1) a control mean survival of 80% or greater;

2) a control mean number of water flea neonates per surviving adult of 15 or greater;

3) a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;

4) a control Coefficient of Variation percent (CV%) of 40 or less between replicates for the young of surviving females in the water flea test; and the growth and survival endpoints in the fathead minnow test.

5) a critical dilution CV% of 40 or less for young of surviving females in the water flea test; and the growth and survival endpoints for the fathead minnow test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test.

6) a Percent Minimum Significant Difference of 47 or less for water flea reproduction;

7) a Percent Minimum Significant Difference of 30 or less for fathead minnow growth.

b. Statistical Interpretation

1) For the water flea survival test, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced above, or its most recent update.

2) For the water flea reproduction test and the fathead minnow larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced above, or its most recent update.

3) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The EPA manual, "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.

4) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.

5) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. A significant effect is herein defined as a statistically significant difference at the 95% confidence level between the survival, reproduction, or growth of the test organism(s) in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism(s) in the control (0% effluent).

6) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 3 above.

7) Pursuant to the responsibility assigned to the permittee in Part 2.b.3), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The above-referenced guidance manual will be used when making a determination of test acceptability.

c. Dilution Water

1) Dilution water used in the toxicity tests shall be the receiving water collected at a point upstream of the discharge as close as possible to the discharge point,

but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall; (a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge, or (b) utilize the closest downstream perennial water unaffected by the discharge.

2) Where the receiving water proves unsatisfactory as a result of pre-existing instream toxicity (i.e. fails to fulfill the test acceptance criteria of item 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of item 2.a;

b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days);

c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3 of this Section.

3) The synthetic dilution water shall consist of standard, moderately hard, reconstituted water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

1) The permittee shall collect a minimum of three composite samples from Outfall 001. The second and third composite samples will be used for the renewal of the dilution concentrations for each toxicity test.

2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for any subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum numbers of effluent portions, and the sample holding time, are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with

renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests in accordance with the above-referenced method manual, or the most recent update, for every valid and invalid toxicity test initiated whether carried to completion or not.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit.

1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12 month period.

2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6 month period.

3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th, for biomonitoring conducted during the previous calendar quarter.

4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TLP3B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For the water flea, Parameter TOP3B, report the NOEC for survival.

3) For the water flea, Parameter TXP3B, report the LOEC for survival.

4) For the water flea, Parameter TWP3B, enter a "1" if the NOEC for reproduction is less than the critical dilution; otherwise, enter a "0."

5) For the water flea, Parameter TPP3B, report the NOEC for reproduction.

6) For the water flea, Parameter TYP3B, report the LOEC for reproduction.

7) For the fathead minnow, Parameter TLP6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

8) For the fathead minnow, Parameter TOP6C, report the NOEC for survival.

9) For the fathead minnow, Parameter TXP6C, report the LOEC for survival.

10) For the fathead minnow, Parameter TWP6C, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

11) For the fathead minnow, Parameter TPP6C, report the NOEC for growth.

12) For the fathead minnow, Parameter TYP6C, report the LOEC for growth.

d. Enter the following codes for fathead minnow retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

e. The permittee shall report the sublethal (reproduction) WET values for the 30-day average and the 7-day minimum under Parameter No. 22414 for the appropriate reporting period for both test species. If more than one valid test was performed during the reporting period, the NOECs will be averaged arithmetically and reported as the daily average NOEC. The data submitted should reflect the lowest lethal or sublethal results during the reporting period.

4. Persistent Toxicity

The requirements of this Part apply only when a test demonstrates a significant sublethal effect at the critical dilution and only for the fathead minnow. A significant sublethal effect is defined as a statistically significant difference between the growth of the test organism in a specified effluent dilution when compared to the growth of the test organism in the control.

a. The permittee shall conduct a total of 2 additional tests (retests) for any test that demonstrates a significant sublethal effect at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion (the last day of the test).

b. No more than one retest per month is required.

5. Toxicity Reduction Evaluation

a. Within 45 days of being so instructed due to multiple toxic events, the permittee shall submit a General Outline for initiating a sublethal TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, and a sampling and analytical schedule.

b. Within 90 days of being so instructed due to multiple toxic events, the permittee shall submit a TRE Action Plan and Schedule for conducting a sublethal TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant sublethality at the critical dilution. The TRE Action Plan should lead to the successful elimination of significant sublethality. As a minimum, the TRE Action Plan shall include the following:

1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee should perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003), or alternate procedures. The permittee should perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant sublethality. Where the permittee has identified or suspects specific pollutant(s) and source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant(s) and source(s) of effluent toxicity;

3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant(s) performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation

tests performed during the quarter;

3) any data and substantiating documentation which identifies the pollutant(s) and source(s) of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing.

f. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the date of being instructed to perform the sublethal TRE. The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant sublethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

g. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, to specify a sublethal WET limit, to specify a BMP, and to specify CS limits.

TABLE 1 (SHEET 1 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

		Date Time		Date Time
Dates and Times Composites Collected	No. 1 FROM:	______________	TO:	______________
	No. 2 FROM:	______________	TO:	______________
	No. 3 FROM:	______________	TO:	______________

Test initiated: ______________________am/pm ______________________date

Dilution water used: ________ Receiving Water ________ Synthetic Dilution Water

NUMBER OF YOUNG PRODUCED PER ADULT AT END OF TEST

	Percent effluent					
REP	0%	31%	41%	55%	80%	98%
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
Survival Mean						
Total Mean						
CV%*						
PMSD						

*Coefficient of Variation = standard deviation x 100/mean (calculation based on young of the surviving adults) Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

TABLE 1 (SHEET 2 OF 4)

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean number of young produced per adult significantly less than the number of young per adult in the control for the % effluent corresponding to significant nonlethal effects?

   CRITICAL DILUTION (98%): _______ YES _______ NO

PERCENT SURVIVAL

	Percent effluent					
Time of Reading	0%	31%	41%	55%	80%	98%
24h						
48h						
End of Test						

2. Fisher's Exact Test:

Is the mean survival at test end significantly less than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (98%): _______ YES _______ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

   a.) NOEC survival = __________% effluent

   b.) LOEC survival = __________% effluent

   c.) NOEC reproduction = __________% effluent

   d.) LOEC reproduction = __________% effluent

TABLE 1 (SHEET 3 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

		Date Time		Date Time
Dates and Times Composites Collected	No. 1 FROM:	______________	TO:	______________
	No. 2 FROM:	______________	TO:	______________
	No. 3 FROM:	______________	TO:	______________

Test initiated: ____________________am/pm ____________________date

Dilution water used: ________ Receiving Water ________ Synthetic Dilution Water

FATHEAD MINNOW GROWTH DATA

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight	CV%*
	A	B	C	D	E		
0%							
31%							
41%							
55%							
80%							
98%							
PMSD							

* Coefficient of Variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean dry weight (growth) at 7 days significantly less than the control's dry weight (growth) for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (98%): _______ YES _______ NO

TABLE 1 (SHEET 4 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW GROWTH AND SURVIVAL TEST

FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV%*
	A	B	C	D	E	24h	48h	7 day	
0%									
31%									
41%									
55%									
80%									
98%									

* Coefficient of Variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (98%): _______ YES _______ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a.) NOEC survival = ___________% effluent

b.) LOEC survival = ___________% effluent

c.) NOEC growth = ___________% effluent

d.) LOEC growth = ___________% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency and Methodology

a. The permittee shall test the effluent for lethality in accordance with the provisions in this Section. Such testing will determine compliance with the Surface Water Quality Standard, 307.6(e)(2)(B), of greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.

b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof:

1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

d. This permit may be amended to require a WET limit, a Best Management Practice (BMP), Chemical-Specific (CS) limits, or other appropriate actions to address toxicity. The permittee may be required to conduct a TRE after multiple toxic events.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

b. Dilution Water - In accordance with item 1.c., the control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

c. Samples and Composites

1) The permittee shall collect one composite sample from Outfall 001.

2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4). If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of the manual referenced above, or its most recent update, for every valid and invalid toxicity test initiated.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit.

1) Semiannual biomonitoring test results are due on or before January 20th and July 20th for biomonitoring conducted during the previous 6 month period.

2) Quarterly biomonitoring test results are due on or before January 20th, April 20th, July 20th, and October 20th, for biomonitoring conducted during the previous calendar quarter.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or

equal to 50%, enter "1."

4. <u>Persistent Mortality</u>

The requirements of this Part apply when a toxicity test demonstrates significant lethality, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 24-hours.

a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These additional effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour.

b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

5. <u>Toxicity Reduction Evaluation</u>

a. Within 91 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a Toxicity Reduction Evaluation (TRE). The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:

1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant(s) and source(s) of effluent toxicity;

3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant(s) performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation which identifies the pollutant(s) and source(s) of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

   This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

   The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall specify the control mechanism(s) that will, when implemented, reduce effluent toxicity as specified in item 5.g. The report will also specify a corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 307.6.(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.

   The requirement to comply with 307.6.(e)(2)(B) may be exempted upon proof that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g. metals) form a salt compound. Following the exemption, the permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and to specify a CS limit.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN*						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _______% effluent

TABLE 2 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _______% effluent

Appendix B

POND G-129 AREA AND CAPACITY DATA

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	12/18/2003	1000	7	1	1.664						
MO - Winfield Mine	003	G-7	12/18/2003	1000	7	1	1.664						
MO - Winfield Mine	003	G-7	1/24/2004	1500	7.1	8	0.479						
MO - Winfield Mine	003	G-7	1/24/2004	1500	7.1	8	0.479						
MO - Winfield Mine	003	G-7	2/6/2004	1000	7.2	7	0.281		0.009				
MO - Winfield Mine	003	G-7	2/6/2004	1000	7.2	7	0.281		0.009				
MO - Winfield Mine	003	G-7	2/13/2004	4000	6.9	1	1.384						
MO - Winfield Mine	003	G-7	2/13/2004	4000	6.9	1	1.384						
MO - Winfield Mine	003	G-7	2/20/2004	4000	7	2	0.282						
MO - Winfield Mine	003	G-7	2/20/2004	4000	7	2	0.282						
MO - Winfield Mine	003	G-7	2/27/2004	3000	6.9	1	0.143						
MO - Winfield Mine	003	G-7	3/5/2004	8000	7.6	1	0.301						
MO - Winfield Mine	003	G-7	3/5/2004	8000	7.6	1	0.301						
MO - Winfield Mine	003	G-7	3/12/2004	3000	7.5	6	0.926						
MO - Winfield Mine	003	G-7	3/12/2004	3000	7.5	6	0.926						
MO - Winfield Mine	003	G-7	3/19/2004	2000	7	1	0.43						
MO - Winfield Mine	003	G-7	3/19/2004	2000	7	1	0.43						
MO - Winfield Mine	003	G-7	4/24/2004	4000	7	6	0.36						
MO - Winfield Mine	003	G-7	4/24/2004	4000	7	6	0.36						
MO - Winfield Mine	003	G-7	4/29/2004	2000	6.7	2	1.942						
MO - Winfield Mine	003	G-7	4/29/2004	2000	6.7	2	1.942						
MO - Winfield Mine	003	G-7	5/7/2004	3000	7.2	3	1.754						
MO - Winfield Mine	003	G-7	5/7/2004	3000	7.2	3	1.754						
MO - Winfield Mine	003	G-7	5/14/2004	2000	7	1	0.885						
MO - Winfield Mine	003	G-7	6/11/2004	3000	7	3	0.443		0.001				
MO - Winfield Mine	003	G-7	6/11/2004	3000	7	3	0.443		0.001				
MO - Winfield Mine	003	G-7	6/18/2004	3000	7.1	3	0.766						
MO - Winfield Mine	003	G-7	6/18/2004	3000	7.1	3	0.766						
MO - Winfield Mine	003	G-7	6/30/2004	2000	7.1	1	0.163						
MO - Winfield Mine	003	G-7	6/30/2004	2000	7.1	1	0.163						
MO - Winfield Mine	002	G-13	12/23/2004	1000	7.1						<0.1		
MO - Winfield Mine	003	G-7	12/23/2004	3000	7.2	1	0.411						
MO - Winfield Mine	003	G-7	12/23/2004	3000	7.2	1	0.411						
MO - Winfield Mine	002	G-13	1/7/2005	5000	7.3						<0.1		
MO - Winfield Mine	003	G-7	1/7/2005	5000	7.2	4	0.3						
MO - Winfield Mine	003	G-7	1/7/2005	5000	7.2	4	0.3						
MO - Winfield Mine	003	G-7	1/14/2005	3500	7.1	5	0.126						
MO - Winfield Mine	003	G-7	1/14/2005	3500	7.1	5	0.126						
MO - Winfield Mine	003	G-7	1/21/2005	2000	7.2	2	0.31						
MO - Winfield Mine	003	G-7	1/21/2005	2000	7.2	2	0.31						

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	002	G-13	2/4/2005	1000	7	3	0.238						
MO - Winfield Mine	003	G-7	2/4/2005	1500	7.1	3	0.153						
MO - Winfield Mine	002	G-13	2/4/2005	1000	7	3	0.238						
MO - Winfield Mine	003	G-7	2/4/2005	1500	7.1	3	0.153						
MO - Winfield Mine	002	G-13	6/23/2005	2000	7.9	2	0.081						
MO - Winfield Mine	002	G-13	6/23/2005	2000	7.9	2	0.081						
MO - Winfield Mine	002	G-13	9/24/2005	4000	7.3	6	0.216						
MO - Winfield Mine	002	G-13	9/24/2005	4000	7.3	6	0.216						
MO - Winfield Mine	002	G-13	2/18/2006	2000	6.3	1	0.294						
MO - Winfield Mine	002	G-13	2/18/2006	2000	6.3	1	0.294						
MO - Winfield Mine	003	G-7	3/24/2006	20000	7.2	8	0.998						
MO - Winfield Mine	003	G-7	3/24/2006	20000	7.2	8	0.998						
MO - Winfield Mine	002	G-13	3/24/2006	4000	7.1	2	0.389						
MO - Winfield Mine	002	G-13	3/24/2006	4000	7.1	2	0.389						
MO - Winfield Mine	002	G-13	5/13/2006	4000	8.5	4	0.128						
MO - Winfield Mine	002	G-13	5/13/2006	4000	8.5	4	0.128						
MO - Winfield Mine	002	G-13	5/20/2006	4000	8.2	3	0.327						
MO - Winfield Mine	002	G-13	5/20/2006	4000	8.2	3	0.327						
MO - Winfield Mine	002	G-13	12/30/2006	4000	6.9	2	0.55						
MO - Winfield Mine	002	G-13	12/30/2006	4000	6.9	4	0.55						
MO - Winfield Mine	002	G-13	12/30/2006	4000	6.9	4	0.55						
MO - Winfield Mine	002	G-13	1/6/2007	4000	6.9	<1	0.399	0	0				
MO - Winfield Mine	002	G-13	1/6/2007	4000	6.9	1	0.399						
MO - Winfield Mine	002	G-13	1/13/2007	4000	7.1	6	0.416						
MO - Winfield Mine	002	G-13	1/13/2007	4000	7.1	6	0.416	0	0				
MO - Winfield Mine	002	G-13	1/19/2007	4000	7	3	0.534						
MO - Winfield Mine	003	G-7	1/19/2007	8000	6.8	11	0.659						
MO - Winfield Mine	002	G-13	1/19/2007	4000	7	3	0.534	0	0				
MO - Winfield Mine	003	G-7	1/19/2007	8000	6.8	11	0.659	0	0				
MO - Winfield Mine	003	G-11	1/20/2007	2000	7.7	0	0	0	0		< 0.1		
MO - Winfield Mine	002	G-13	1/26/2007	4000	6.9	12	0.564						
MO - Winfield Mine	002	G-13	1/26/2007	4000	6.9	12	0.564	0	0				
MO - Winfield Mine	003	G-7	2/16/2007	1500	7.2	5	0.639						
MO - Winfield Mine	003	G-7	2/16/2007	1500	7.2	5	0.639	0	0				
MO - Winfield Mine	003	G-7	2/23/2007	1500	7.2	1	0.273						
MO - Winfield Mine	003	G-7	2/23/2007	1500	7.2	<1	0.273	0	0				
MO - Winfield Mine	002	G-13	5/12/2007	2000	7.9	3	1.19						
MO - Winfield Mine	002	G-13	5/12/2007	2000	7.9	3	1.19						
MO - Winfield Mine	003	G-7	5/14/2007	2000	7	1	0.885						
MO - Winfield Mine	002	G-13	6/2/2007	4000	8.5	2	0.45						

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	6/2/2007	2000	7.1	6	0.319						
MO - Winfield Mine	002	G-13	6/2/2007	4000	8.5	2	0.45						
MO - Winfield Mine	003	G-7	6/2/2007	2000	7.1	6	0.319						
MO - Winfield Mine	003	G-11	6/21/2007	1500	6.4						<0.1		
MO - Winfield Mine	003	G-11	6/21/2007	1500	6.4						<0.1		
MO - Winfield Mine	003	G-7	6/22/2007	20000	6.7	<1	0.455						
MO - Winfield Mine	003	G-7	6/22/2007	20000	6.7	1	0.455						
MO - Winfield Mine	002	G-13	6/23/2007	4000	8.6	1	0.221						
MO - Winfield Mine	002	G-13	6/23/2007	4000	8.6	<1	0.221						
MO - Winfield Mine	003	G-11	6/28/2007	1500	6.4						<0.1		
MO - Winfield Mine	003	G-7	6/28/2007	20000	6.5	2	0.403						
MO - Winfield Mine	003	G-7	6/28/2007	20000	6.5	2	0.403						
MO - Winfield Mine	002	G-13	7/7/2007	4000	7.9	3	0.319						
MO - Winfield Mine	003	G-7	7/7/2007	4000	7.8	4	0.728	0	0				
MO - Winfield Mine	003	G-11	7/7/2007	1500	6.4						<0.1		
MO - Winfield Mine	002	G-13	7/7/2007	4000	7.9	3	0.319						
MO - Winfield Mine	003	G-11	7/7/2007	1500	6.4						< 0.1		
MO - Winfield Mine	003	G-7	7/7/2007	4000	7.8	4	0.728						
MO - Winfield Mine		G-11	7/7/2007	1500	6.4	0	0	0	0		0.1		
MO - Winfield Mine	002	G-13	7/7/2007	4000	7.9	3	0.319	0	0				
MO - Winfield Mine	003	G-7	7/7/2007	4000	7.8	4	0.728						
MO - Winfield Mine	003	G-7	7/13/2007	4000	7.9	6	0.423						
MO - Winfield Mine	003	G-7	7/13/2007	4000	7.9	6	0.423	0	0				
MO - Winfield Mine		G-11	7/13/2007	500	6.4	0	0	0	0		0.1		
MO - Winfield Mine	002	G-13	7/13/2007	4000	6.7	11	0.334						
MO - Winfield Mine	003	G-11	7/13/2007	500	6.4						< 0.1		
MO - Winfield Mine	003	G-7	7/13/2007	4000	7.9	6	0.423						
MO - Winfield Mine	002	G-13	7/13/2007	4000	6.7	11	0.334						
MO - Winfield Mine	003	G-11	7/13/2007	500	6.4						<0.1		
MO - Winfield Mine	002	G-13	7/13/2007	4000	6.7	11	0.334	0	0				
MO - Winfield Mine		G-11	7/20/2007	200	6.3	0	0	0	0		0.1		
MO - Winfield Mine	003	G-11	7/20/2007	200	6.3						<0.1		
MO - Winfield Mine	003	G-11	7/20/2007	200	6.3						< 0.1		
MO - Winfield Mine	003	G-7	7/21/2007	2000	7.4	3	0.287						
MO - Winfield Mine	003	G-7	7/21/2007	2000	7.4	3	0.287	0	0				
MO - Winfield Mine	002	G-13	7/21/2007	4000	6.8	13	0.436	0	0				
MO - Winfield Mine	002	G-13	7/21/2007	4000	6.8	13	0.436						
MO - Winfield Mine	002	G-13	7/21/2007	4000	6.8	13	0.436						
MO - Winfield Mine	003	G-7	7/21/2007	2000	7.4	3	0.287						
MO - Winfield Mine	003	G-7	8/3/2007	3000	7	1	0.922						

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-11	8/3/2007	500	6.7						< 0.1		
MO - Winfield Mine	003	G-7	8/3/2007	3000	7	<1	0.922						
MO - Winfield Mine	003	G-11	8/3/2007	500	6.7	0	0	0	0		0.1		
MO - Winfield Mine	003	G-7	8/3/2007	3000	7	<1	0.922	0	0				
MO - Winfield Mine	002	G-13	8/4/2007	4000	8.5	1	0.261						
MO - Winfield Mine	002	G-13	8/4/2007	4000	8.5	<1	0.261						
MO - Winfield Mine	002	G-13	8/4/2007	4000	8.5	<1	0.261	0	0				
MO - Winfield Mine	003	G-11	9/6/2007	500	7.1						< 0.1		
MO - Winfield Mine		G-11	9/6/2007	500	7.1	0	0	0	0		0.1		
MO - Winfield Mine	002	G-13	9/8/2007	2000	6.5	8	0.306		<0.005				
MO - Winfield Mine	003	G-7	9/8/2007	4000	7	7	0.42	0	0				
MO - Winfield Mine	003	G-7	9/8/2007	4000	7	7	0.42						
MO - Winfield Mine	003	G-7	9/8/2007	4000	7	7	0.42						
MO - Winfield Mine	002	G-13	9/8/2007	2000	6.5	8	0.306		0.005				
MO - Winfield Mine	002	G-13	9/8/2007	2000	6.5	8	0.306	0	0.005				
MO - Winfield Mine	003	G-7	12/15/2007	2000	6.6	5	0.57		0.006				
MO - Winfield Mine	003	G-7	12/15/2007	2000	6.6	5	0.57		<0.006				
MO - Winfield Mine	002	G-13	12/27/2007	2000	6.8	3	0.204		<0.006				
MO - Winfield Mine	002	G-13	12/27/2007	2000	6.8	3	0.204		0.006				
MO - Winfield Mine	002	G-13	2/9/2008	2000	6.4	3	0.347		<0.006				
MO - Winfield Mine	002	G-13	2/9/2008	2000	6.4	3	0.347		0.006				
MO - Winfield Mine	003	G-7	2/16/2008	3000	7	1	0.146		<0.006				
MO - Winfield Mine	002	G-13	2/16/2008	4000	7.3	16	0.52						
MO - Winfield Mine	003	G-7	2/16/2008	3000	7	1	0.146		0.006				
MO - Winfield Mine	002	G-13	2/16/2008	4000	7.3	16	0.52						
MO - Winfield Mine	003	G-7	3/7/2008	5000	7.2	20	0.851						
MO - Winfield Mine	003	G-7	3/7/2008	5000	7.2	20	0.851						
MO - Winfield Mine	002	G-13	3/7/2008	4000	7.1	6	0.062		0.006				
MO - Winfield Mine	003	G-11	3/7/2008	1000	6.9						<0.1		
MO - Winfield Mine	003	G-11	3/7/2008	1000	6.9						< 0.1		
MO - Winfield Mine	002	G-13	3/7/2008	4000	7.1	6	0.062		<0.006				
MO - Winfield Mine	002	G-13	3/13/2008	4000	7.9	1	0.073		0.006				
MO - Winfield Mine	002	G-13	3/13/2008	4000	7.9	<1	0.073		<0.006				
MO - Winfield Mine	003	G-11	3/20/2008	500	7						< 0.1		
MO - Winfield Mine	003	G-7	3/20/2008	500	7.5						<0.1		
MO - Winfield Mine	003	G-7	3/20/2008	500	7.5						< 0.1		
MO - Winfield Mine	003	G-11	3/20/2008	500	7						<0.1		
MO - Winfield Mine	002	G-13	3/22/2008	4000	8	5	0.086						
MO - Winfield Mine	002	G-13	3/22/2008	4000	8	5	0.086						
MO - Winfield Mine	003	G-7	4/5/2008	2000	7.1						< 0.1		

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-11	4/5/2008	500	6.6						< 0.1		
MO - Winfield Mine	002	G-13	4/5/2008	4000	7.7	4	0.163		<0.006				
MO - Winfield Mine	003	G-7	4/5/2008	2000	7.1						<0.1		
MO - Winfield Mine	002	G-13	4/5/2008	4000	7.7	4	0.163		0.006				
MO - Winfield Mine	003	G-11	4/5/2008	500	6.6						<0.1		
MO - Winfield Mine	003	G-7	4/12/2008	1000	7.1						< 0.1		
MO - Winfield Mine	003	G-11	4/12/2008	1000	6.8						< 0.1		
MO - Winfield Mine	002	G-13	4/12/2008	4000	8.1	3	0.259						
MO - Winfield Mine	003	G-7	4/12/2008	1000	7.1						<0.1		
MO - Winfield Mine	002	G-13	4/12/2008	4000	8.1	3	0.259						
MO - Winfield Mine	003	G-11	4/12/2008	1000	6.8						<0.1		
MO - Winfield Mine	003	G-11	4/18/2008	1000	7						< 0.1		
MO - Winfield Mine	003	G-11	4/18/2008	1000	7						<0.1		
MO - Winfield Mine	002	G-13	4/19/2008	4000	8	1	0.21						
MO - Winfield Mine	002	G-13	4/19/2008	4000	8	1	0.21						
MO - Winfield Mine	002	G-13	5/3/2008	4000	7.1	3	0.299		0.006				
MO - Winfield Mine	002	G-13	5/3/2008	4000	7.1	3	0.299		<0.006				
MO - Winfield Mine	002	G-13	5/8/2008	4000	6.6	3	0.274						
MO - Winfield Mine	002	G-13	5/8/2008	4000	6.6	3	0.274						
MO - Winfield Mine	002	G-13	5/16/2008	4000	7.9	11	0.447						
MO - Winfield Mine	003	G-7	5/16/2008	2000	8.1						<0.1		
MO - Winfield Mine	002	G-13	5/16/2008	4000	7.9	11	0.447						
MO - Winfield Mine	003	G-11	5/16/2008	1500	7.8						< 0.1		
MO - Winfield Mine	003	G-7	5/16/2008	2000	8.1						< 0.1		
MO - Winfield Mine	003	G-11	5/24/2008	500	7.9						< 0.1		
MO - Winfield Mine	002	G-13	5/24/2008	4000	8.5	1	0.148						
MO - Winfield Mine	002	G-13	5/24/2008	4000	8.5	1	0.148						
MO - Winfield Mine	002	G-13	5/30/2008	2000	8	2	0.137						
MO - Winfield Mine	002	G-13	5/30/2008	2000	8	2	0.137						
MO - Winfield Mine	002	G-13	6/14/2008	2000	6.8	1	0.14						
MO - Winfield Mine	002	G-13	6/14/2008	2000	6.8	1	0.14						
MO - Winfield Mine	003	G-7	6/20/2008	2000	7.9						< 0.1		
MO - Winfield Mine	003	G-11	6/20/2008	500	7.6						< 0.1		
MO - Winfield Mine	003	G-7	6/20/2008	2000	7.9						<0.1		
MO - Winfield Mine	002	G-13	6/21/2008	2000	7.7	2	0.137						
MO - Winfield Mine	002	G-13	6/21/2008	2000	7.7	2	0.137						
MO - Winfield Mine	002	G-13	6/27/2008	2000	7.8	5	0.213						
MO - Winfield Mine	002	G-13	6/27/2008	2000	7.8	5	0.213						
MO - Winfield Mine	002	G-13	9/13/2008	2000	7.3	2	0.062		0.006				
MO - Winfield Mine	002	G-13	9/13/2008	2000	7.3	2	0.062		<0.006				

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	l (mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	002	G-13	9/13/2008	2000	7.3	2	0.062		<0.006				
MO - Winfield Mine	003	G-7	9/18/2008	2000	7.6	5	0.202						
MO - Winfield Mine	003	G-7	9/18/2008	2000	7.6	5	0.202						
MO - Winfield Mine	003	G-7	9/18/2008	2000	7.6	5	0.202						
MO - Winfield Mine	002	G-13	10/16/2008	2000	7.9	7	0.188		0.006				
MO - Winfield Mine	002	G-13	11/7/2008	4000	7	7	0.226						
MO - Winfield Mine	003	G-7	12/5/2008	1500	7.2	6	0.59						
MO - Winfield Mine	002	G-13	12/12/2008	2000	7.2	1	1.04		0.006				
MO - Winfield Mine	003	G-7	12/19/2008	500	7.1						<0.1		
MO - Winfield Mine	002	G-13	12/29/2008	2000	6.9	5	0.195						
MO - Winfield Mine	003	G-7	1/7/2009	1000	8.5						<0.1		
MO - Winfield Mine	002	G-13	1/7/2009	1500	7.8	4	0.183		<0.006		< 0.1		
MO - Winfield Mine	002	G-13	1/7/2009	1500	7.8	4	0.183		0.006		<0.1		
MO - Winfield Mine	003	G-7	1/7/2009	1000	8.5						< 0.1		
MO - Winfield Mine	002	G-13	2/13/2009	2000	7.5	4	0.174		0.006				
MO - Winfield Mine	002	G-13	2/13/2009	2000	7.5	4	0.174		<0.006				
MO - Winfield Mine	002	G-13	3/14/2009	2000	7.1	3	0.121		0.006				
MO - Winfield Mine	003	G-7	3/14/2009	4000	7.2	7	0.235		<0.006				
MO - Winfield Mine	002	G-13	3/14/2009	2000	7.1	3	0.121		<0.006				
MO - Winfield Mine	003	G-7	3/14/2009	4000	7.2	7	0.235		0.006				
MO - Winfield Mine	002	G-13	3/21/2009	200	6.8	1	0.004						
MO - Winfield Mine	003	G-7	3/21/2009	2000	7.4	4	0.171						
MO - Winfield Mine	003	G-7	3/21/2009	2000	7.4	4	0.171						
MO - Winfield Mine	002	G-13	3/21/2009	200	6.8	1	0.004						
MO - Winfield Mine	003	G-11	3/26/2009	1000	6.5						< 0.1		
MO - Winfield Mine	003	G-11	3/26/2009	1000	6.5						<0.1		
MO - Winfield Mine	002	G-13	3/27/2009	2000	7.3	2	0.015						
MO - Winfield Mine	003	G-7	3/27/2009	3000	7						< 0.1		
MO - Winfield Mine	002	G-13	3/27/2009	2000	7.3	2	0.015						
MO - Winfield Mine	003	G-7	3/27/2009	3000	7						<0.1		
MO - Winfield Mine	003	G-7	4/4/2009	2000	7.5						<0.1		
MO - Winfield Mine	002	G-13	4/17/2009	2000	7	1	0.001		0.006				
MO - Winfield Mine	003	G-7	4/18/2009	10000	7.3						<0.1		
MO - Winfield Mine	002	G-13	4/25/2009	2000	6.7	3	0.084						
MO - Winfield Mine	003	G-7	4/25/2009	2000	7.9						<0.1		
MO - Winfield Mine	003	G-7	5/1/2009	2000	7.6						<0.1		
MO - Winfield Mine	003	G-7	5/6/2009	5000	7.8						<0.1		
MO - Winfield Mine	003	G-11	5/6/2009	2000	6.5						<0.1		
MO - Winfield Mine	003	G-11	5/15/2009	1000	6.8						<0.1		
MO - Winfield Mine	003	G-7	5/15/2009	2000	7.5						<0.1		

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-11	5/22/2009	1000	7.3						<0.1		
MO - Winfield Mine	003	G-7	5/22/2009	2500	7.8						<0.1		
MO - Winfield Mine	003	G-7	5/29/2009	2000	7.9						<0.1		
MO - Winfield Mine	003	G-7	6/6/2009	2000	7.7						<0.1		
MO - Winfield Mine	003	G-7	6/12/2009	2000	7.9						<0.1		
MO - Winfield Mine	003	G-7	6/20/2009	2000	8.1						<0.1		
MO - Winfield Mine	003	G-7	6/26/2009	1000	7.9						<0.1		
MO - Winfield Mine	003	G-7	7/18/2009	1000	7.9						< 0.1		
MO - Winfield Mine	002	G-13	7/18/2009	2000	6.7	5	0.055		0.006				
MO - Winfield Mine	002	G-13	7/18/2009	2000	6.7	5	0.055		< 0.006				
MO - Winfield Mine	003	G-7	7/18/2009	1000	7.9						<0.1		
MO - Winfield Mine	002	G-13	7/25/2009	2000	6.7	10	0.204						
MO - Winfield Mine	002	G-13	7/25/2009	2000	6.7	10	0.204						
MO - Winfield Mine	003	G-7	7/31/2009	2000	7.6						<0.1		
MO - Winfield Mine	003	G-11	7/31/2009	500	6.6						<0.1		
MO - Winfield Mine	003	G-7	7/31/2009	2000	7.6						< 0.1		
MO - Winfield Mine	002	G-13	8/1/2009	2500	6.5	4	0.102		< 0.006				
MO - Winfield Mine	002	G-13	8/8/2009	2000	6.8	3	0.043						
MO - Winfield Mine	003	G-7	8/8/2009	200	8						< 0.1		
MO - Winfield Mine	002	G-13	8/15/2009	1500	6.8	3	0.108						
MO - Winfield Mine	003	G-7	8/21/2009	2000	8.1						< 0.1		
MO - Winfield Mine	002	G-13	8/29/2009	2000	7.9	3	0.055						
MO - Winfield Mine	003	G-7	8/29/2009	500	7.7						< 0.1		
MO - Winfield Mine	003	G-7	9/5/2009	1000	7.4						< 0.1		
MO - Winfield Mine	003	G-7	9/11/2009	1000	7.1						< 0.1		
MO - Winfield Mine	003	G-7	9/19/2009	2000	7	4	0.177		< 0.006				
MO - Winfield Mine	002	G-13	9/19/2009	2000	6.9	10	0.305		< 0.006				
MO - Winfield Mine	003	G-7	9/26/2009	2000	7.2	2	0.258						
MO - Winfield Mine	002	G-13	9/26/2009	2000	7	2	0.176						
MO - Winfield Mine	003	G-7	10/3/2009	2000	6.9	4	0.227						
MO - Winfield Mine	003	G-7	10/3/2009	2000	6.9	4	0.227						
MO - Winfield Mine	002	G-13	10/10/2009	4000	7.3	8	0.288		0.04				
MO - Winfield Mine	003	G-7	10/10/2009	3000	6.5	4	0.171						
MO - Winfield Mine	002	G-13	10/10/2009	4000	7.3	8	0.288		< 0.04				
MO - Winfield Mine	003	G-7	10/10/2009	3000	6.5	4	0.171						
MO - Winfield Mine	003	G-7	10/17/2009	6000	7.2	6	0.16						
MO - Winfield Mine	002	G-13	10/17/2009	4000	7	1	0.025						
MO - Winfield Mine	003	G-7	10/17/2009	6000	7.2	6	0.16						
MO - Winfield Mine	002	G-13	10/17/2009	4000	7	1	< 0.025						
MO - Winfield Mine	002	G-13	10/24/2009	4000	7.2	3	< 0.025						

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	10/24/2009	6000	6.6	14	0.231						
MO - Winfield Mine	002	G-13	10/24/2009	4000	7.2	3	0.025						
MO - Winfield Mine	003	G-7	10/24/2009	6000	6.6	14	0.231						
MO - Winfield Mine	002	G-13	10/31/2009	4000	7.1	3	0.238						
MO - Winfield Mine	002	G-13	10/31/2009	4000	7.1	3	0.238						
MO - Winfield Mine	003	G-7	10/31/2009	4000	6.9	4	0.422						
MO - Winfield Mine	003	G-7	10/31/2009	4000	6.9	4	0.422						
MO - Winfield Mine	002	G-13	11/7/2009	4000	7	11	0.289		0.02				
MO - Winfield Mine	003	G-7	11/7/2009	4000	6.9	4	0.138						
MO - Winfield Mine	002	G-13	11/7/2009	4000	7	11	0.289		< 0.02				
MO - Winfield Mine	003	G-7	11/7/2009	4000	6.9	4	0.138						
MO - Winfield Mine	002	G-13	11/14/2009	4000	7.2	11	0.345						
MO - Winfield Mine	003	G-7	11/14/2009	3000	7.3	10	0.233						
MO - Winfield Mine	003	G-7	11/14/2009	3000	7.3	10	0.233						
MO - Winfield Mine	002	G-13	11/14/2009	4000	7.2	11	0.345						
MO - Winfield Mine	002	G-13	11/21/2009	4000	6.9	1	0.156						
MO - Winfield Mine	003	G-7	11/21/2009	3000	6.6	5	0.24						
MO - Winfield Mine	002	G-13	11/21/2009	4000	6.9	1	0.156						
MO - Winfield Mine	003	G-7	11/21/2009	3000	6.6	5	0.24						
MO - Winfield Mine	002	G-13	11/28/2009	2000	6.5	12	0.523						
MO - Winfield Mine	003	G-7	11/28/2009	3000	6.7	7	0.474						
MO - Winfield Mine	003	G-7	11/28/2009	3000	6.7	7	0.474						
MO - Winfield Mine	002	G-13	11/28/2009	2000	6.5	12	0.523						
MO - Winfield Mine	002	G-13	12/5/2009	3500	6.8	5	0.453		0.02				
MO - Winfield Mine	002	G-13	12/5/2009	3500	6.8	5	0.453		< 0.02				
MO - Winfield Mine	003	G-7	12/5/2009	3000	6.9	14	0.322		< 0.02				
MO - Winfield Mine	003	G-7	12/5/2009	3000	6.9	14	0.322		0.02				
MO - Winfield Mine	003	G-7	12/5/2009	4000	6.9	14	0.322		< 0.020				
MO - Winfield Mine	003	G-7	12/12/2009	3000	7.3	5	0.19						
MO - Winfield Mine	003	G-7	12/12/2009	3000	6.6	5	0.19						
MO - Winfield Mine	003	G-7	12/12/2009	3000	6.6	5	0.19						
MO - Winfield Mine	003	G-7	12/18/2009	3000	7.2	15	0.152		0.02				
MO - Winfield Mine	002	G-13	12/18/2009	2000	7.3	7	0.101						
MO - Winfield Mine	002	G-13	12/18/2009	2000	7.3	7	0.101						
MO - Winfield Mine	003	G-7	12/18/2009	3000	6.6	15	0.152		< 0.020				
MO - Winfield Mine	003	G-7	12/18/2009	3000	7.2	15	0.152		< 0.02				
MO - Winfield Mine	003	G-11	12/24/2009	1200	6.8						< 0.1		
MO - Winfield Mine	003	G-7	12/26/2009	3000	6.9	7	0.209						
MO - Winfield Mine	002	G-13	12/26/2009	2000	6.8	9	0.309						
MO - Winfield Mine	003	G-7	12/26/2009	3000	6.7	7	0.209						

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	002	G-13	12/26/2009	2000	6.8	9	0.309						
MO - Winfield Mine	003	G-7	12/26/2009	3000	6.9	7	0.209						
MO - Winfield Mine	003	G-7	1/2/2010	2000	7.3	7	0.494		0.02				
MO - Winfield Mine	003	G-7	1/2/2010	2000	7.3	7	0.494		< 0.020				
MO - Winfield Mine	003	G-11	1/2/2010	1000	6.9						< 0.1		
MO - Winfield Mine	003	G-7	1/8/2010	100	7						<0.1		
MO - Winfield Mine	003	G-7	1/8/2010	100	7						< 0.1		
MO - Winfield Mine	003	G-7	1/15/2010	50	6.8						< 0.1		
MO - Winfield Mine	003	G-7	1/15/2010	50	6.8						<0.1		
MO - Winfield Mine	003	G-7	1/23/2010	25	7						< 0.1		
MO - Winfield Mine	003	G-7	1/30/2010	500	6.8						<0.1		
MO - Winfield Mine	002	G-13	1/30/2010	4000	6.5	7	0.156		0.02				
MO - Winfield Mine	002	G-13	1/30/2010	4000	6.5	7	0.156		< 0.020				
MO - Winfield Mine	003	G-7	1/30/2010	500	6.8						< 0.1		
MO - Winfield Mine	003	G-7	2/5/2010	1500	7.1						<0.1		
MO - Winfield Mine	003	G-11	2/5/2010	1500	7						< 0.1		
MO - Winfield Mine	003	G-7	2/5/2010	1500	7.1						< 0.1		
MO - Winfield Mine	002	G-13	2/6/2010	4000	7	8	0.125		0.02				
MO - Winfield Mine	002	G-13	2/6/2010	4000	7	8	0.125		< 0.020				
MO - Winfield Mine	003	G-11	2/12/2010	1500	7						< 0.1		
MO - Winfield Mine	002	G-13	2/12/2010	4000	6.7	7	0.036						
MO - Winfield Mine	003	G-7	2/12/2010	500	6.8						< 0.1		
MO - Winfield Mine	003	G-7	2/12/2010	500	6.8						<0.1		
MO - Winfield Mine	002	G-13	2/12/2010	4000	6.7	7	0.036						
MO - Winfield Mine	003	G-11	2/20/2010	1000	7						< 0.1		
MO - Winfield Mine	002	G-13	2/20/2010	2000	6.9	8	0.163						
MO - Winfield Mine	003	G-7	2/20/2010	100	7						< 0.1		
MO - Winfield Mine	003	G-7	2/20/2010	100	7						<0.1		
MO - Winfield Mine	002	G-13	2/20/2010	2000	6.9	8	0.163						
MO - Winfield Mine	002	G-13	2/27/2010	2000	6.8	9	0.161						
MO - Winfield Mine	002	G-13	2/27/2010	2000	6.8	9	0.161						
MO - Winfield Mine	003	G-7	2/27/2010	25	7						< 0.1		
MO - Winfield Mine	003	G-7	2/27/2010	25	7						<0.1		
MO - Winfield Mine	003	G-7	3/6/2010	50	7.1						< 0.1		
MO - Winfield Mine	003	G-7	3/6/2010	50	7.1						<0.1		
MO - Winfield Mine	003	G-7	3/13/2010	2000	6.5	6	0.07						
MO - Winfield Mine	003	G-11	3/13/2010	1000	7						< 0.1		
MO - Winfield Mine	003	G-7	3/13/2010	2000	6.5	6	0.07						
MO - Winfield Mine	003	G-11	3/20/2010	1000	7.1						< 0.1		
MO - Winfield Mine	003	G-7	3/20/2010	4000	6.7	8	0.358						

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	l (mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	3/20/2010	4000	6.7	8	0.358						
MO - Winfield Mine	003	G-7	3/27/2010	4000	7.2	3	0.335		0.02				
MO - Winfield Mine	003	G-7	3/27/2010	4000	7.2	3	0.335		< 0.02				
MO - Winfield Mine	002	G-13	3/27/2010	2000	6.7	2	0.301		< 0.02				
MO - Winfield Mine	002	G-13	3/27/2010	2000	6.7	2	0.301		0.02				
MO - Winfield Mine	003	G-11	3/27/2010	1000	7.1						< 0.1		
MO - Winfield Mine	003	G-7	4/3/2010	4000	6.8	3	0.376						
MO - Winfield Mine	003	G-7	4/3/2010	4000	6.8	3	0.376						
MO - Winfield Mine	003	G-7	4/10/2010	100	7.2						< 0.1		
MO - Winfield Mine	003	G-7	4/10/2010	100	7.2						< 0.1		
MO - Winfield Mine	003	G-7	4/10/2010	100	7.2						<0.1		
MO - Winfield Mine	003	G-7	4/24/2010	500	6.9						< 0.1		
MO - Winfield Mine	003	G-7	4/24/2010	500	6.9						<0.1		
MO - Winfield Mine	002	G-13	5/22/2010	3000	6.8	7	0.707		0.02				
MO - Winfield Mine	002	G-13	5/22/2010	3000	6.8	7	0.707		< 0.020				
MO - Winfield Mine	002	G-13	5/28/2010	2000	7	4	0.601						
MO - Winfield Mine	002	G-13	5/28/2010	2000	7	4	0.601						
MO - Winfield Mine	003	G-7	6/12/2010	500	6.9						< 0.1		
MO - Winfield Mine	002	G-13	6/12/2010	2000	7	5	0.162		< 0.02				
MO - Winfield Mine	002	G-13	6/12/2010	2000	7	5	0.162		0.02				
MO - Winfield Mine	003	G-7	6/12/2010	500	6.9						<0.1		
MO - Winfield Mine	002	G-13	6/19/2010	2000	6.6	5	0.144						
MO - Winfield Mine	002	G-13	6/19/2010	2000	6.6	5	0.144						
MO - Winfield Mine	002	G-13	6/25/2010	2000	6.8	7	0.82						
MO - Winfield Mine	002	G-13	6/25/2010	2000	6.8	7	0.82						
MO - Winfield Mine	002	G-13	7/2/2010	2000	6.9	6	0.163		< 0.010				
MO - Winfield Mine	002	G-13	7/2/2010	2000	6.9	6	0.163		0.001				
MO - Winfield Mine	003	G-7	7/10/2010	2000	8.5	5	0.181		0.01				
MO - Winfield Mine	003	G-7	7/10/2010	2000	8.5	5	0.181		< 0.010				
MO - Winfield Mine	002	G-13	7/10/2010	2000	8	10	0.21						
MO - Winfield Mine	002	G-13	7/10/2010	2000	8	10	0.21						
MO - Winfield Mine	003	G-7	7/16/2010	2000	8.5	9	0.157						
MO - Winfield Mine	002	G-13	7/16/2010	2000	8.4	3	0.155						
MO - Winfield Mine	002	G-13	7/16/2010	2000	8.4	3	0.155						
MO - Winfield Mine	003	G-7	7/16/2010	2000	8.5	9	0.157						
MO - Winfield Mine	002	G-13	9/24/2010	1000	7.1	8	0.084		< 0.010				
MO - Winfield Mine	002	G-13	9/24/2010	1000	7.1	8	0.084		0.01				
MO - Winfield Mine	002	G-13	12/10/2010	2000	6.8	2	0.076		0.01				
MO - Winfield Mine	002	G-13	12/10/2010	2000	6.8	2	0.076		< 0.010				
MO - Winfield Mine	002	G-13	12/18/2010	2000	6.7	2	0.466		0.01				

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	002	G-13	12/18/2010	2000	6.7	2	0.466		< 0.010				
MO - Winfield Mine	002	G-13	1/22/2011	2000	6.3	6	0.086		0.01				
MO - Winfield Mine	002	G-13	1/22/2011	2000	6.3	6	0.086		< 0.010				
MO - Winfield Mine	002	G-13	2/19/2011	2500	6.4	2	0.092		0.018				
MO - Winfield Mine	002	G-13	2/19/2011	2500	6.4	2	0.092		0.018				
MO - Winfield Mine	002	G-13	2/26/2011	500	6.5	11	0.338						
MO - Winfield Mine	002	G-13	2/26/2011	500	6.5	11	0.338						
MO - Winfield Mine	002	G-13	3/5/2011	1000	6.7	5	0.093		0.01				
MO - Winfield Mine	002	G-13	3/5/2011	1000	6.7	5	0.093		< 0.010				
MO - Winfield Mine	002	G-13	4/22/2011	1000	6.4	2	0.52		< 0.010				
MO - Winfield Mine	002	G-13	4/22/2011	1000	6.4	2	0.52		0.01				
MO - Winfield Mine	002	G-13	4/30/2011	1500	6.4	1	0.216						
MO - Winfield Mine	002	G-13	4/30/2011	1500	6.4	1	0.216						
MO - Winfield Mine	003	G-13	5/6/2011	1000	6.4	8	0.054	< 0.010					
MO - Winfield Mine	002	G-13	5/6/2011	1000	6.4	8	0.054		0.01				
MO - Winfield Mine	002	G-13	12/1/2011	1000	6.8	1	0.092		< 0.010				
MO - Winfield Mine	002	G-13	12/19/2011		6.8	1	0.092		<0.010				
MO - Winfield Mine	002	G-13	1/5/2012	500	6.6	4	0.131		0.016				
MO - Winfield Mine	002	G-13	1/14/2012	500	6.7	2	0.07						
MO - Winfield Mine	002	G-13	1/20/2012	1000	6.8	3	0.082						
MO - Winfield Mine	002	G-13	1/28/2012	1500	6.9	3	0.07						
MO - Winfield Mine	002	G-13	2/4/2012	500	6.6	4	0.112		0.011				
MO - Winfield Mine	003	G-7	2/10/2012	100	6.6						< 0.1		
MO - Winfield Mine	002	G-13	2/11/2012	500	6.7	7	0.115						
MO - Winfield Mine	003	G-7	2/18/2012	200	6.9						< 0.1		
MO - Winfield Mine	002	G-13	2/18/2012	1000	6.8	8	0.409						
MO - Winfield Mine	003	G-7	2/25/2012	200	7.1						< 0.1		
MO - Winfield Mine	002	G-13	2/25/2012	1500	6.9	< 1	0.048						
MO - Winfield Mine	003	G-7	3/1/2012	50	7.3						< 0.1		
MO - Winfield Mine	003	G-7	3/2/2012	200	7.2						< 0.1		
MO - Winfield Mine	003	G-7	3/17/2012	1000	7						< 0.1		
MO - Winfield Mine	003	G-11	3/17/2012	1200	6.6						< 0.1		
MO - Winfield Mine	002	G-13	3/17/2012	1000	6.7						< 0.1		
MO - Winfield Mine	002	G-13	3/27/2012	1500	6.8						< 0.1		
MO - Winfield Mine	003	G-7	3/29/2012	1000	7.2						< 0.1		
MO - Winfield Mine	003	G-11	3/29/2012	1500	7.1						< 0.1		
MO - Winfield Mine	002	G-13	3/31/2012	1500	6.5						< 0.1		
MO - Winfield Mine	003	G-7	3/31/2012	100	7						< 0.1		
MO - Winfield Mine	003	G-7	4/6/2012	1000	6.9						< 0.1		
MO - Winfield Mine	002	G-13	4/7/2012	1500	6.5	5	0.179		< 0.010				

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	4/13/2012	50	6.8						< 0.1		
MO - Winfield Mine	002	G-13	4/14/2012	1000	6.7	3	0.038						
MO - Winfield Mine	003	G-7	5/11/2012	100	7						< 0.1		
MO - Winfield Mine	002	G-13	5/12/2012	1000	6.9	6	0.794		0.013				
MO - Winfield Mine	003	G-11	6/15/2012	1000	7.1						< 0.1		
MO - Winfield Mine	002	G-13	7/1/2012	1500	7.7	4	0.194		0.013				
MO - Winfield Mine	002	G-13	8/25/2012	1000	6.5	2	0.094		< 0.010				
MO - Winfield Mine	003	G-11	9/8/2012	1000	6.7						< 0.1		
MO - Winfield Mine	002	G-13	9/29/2012	1000	6.8	2	0.247		< 0.010				
MO - Winfield Mine	002	G-13	11/17/2012	1000	7	2	0.17		< 0.010				
MO - Winfield Mine	002	G-13	1/5/2013	1500	6.9	3	0.579		< 0.010				
MO - Winfield Mine	002	G-13	1/12/2013	1500	6.5	13	0.637						
MO - Winfield Mine	002	G-13	1/18/2013	1000	6.8	4	0.452						
MO - Winfield Mine	002	G-13	2/16/2013	2000	6.6	2	0.03		< 0.010				
MO - Winfield Mine	002	G-13	4/5/2013	1000	7.7	4	0.236		< 0.010				
MO - Winfield Mine	002	G-13	6/7/2013	1000	7.3	16	3		< 0.010				
MO - Winfield Mine	003	G-7	6/14/2013	1000	7.6						< 0.1		
MO - Winfield Mine	002	G-13	6/15/2013	1000	7.2	6	0.212						
MO - Winfield Mine	003	G-7	9/20/2013	2000	8						< 0.1		
MO - Winfield Mine	003	G-7	9/27/2013	50	6.9						< 0.1		
MO - Winfield Mine	003	G-7	10/18/2013	100	6.3						< 0.1		
MO - Winfield Mine	003	G-11	11/1/2013	NO DISCHARGE									
MO - Winfield Mine	003	G-7	11/8/2013	500	7.8						< 0.1		
MO - Winfield Mine	002	G-13	11/9/2013	1000	7.2	3.1	0.1		< 0.010				
MO - Winfield Mine	003	G-7	11/15/2013	100	7.5						< 0.1		
MO - Winfield Mine	002	G-13	11/23/2013	1000	7.1	1.4	0.08						
MO - Winfield Mine	003	G-7	11/23/2013	1000	7.3						< 0.1		
MO - Winfield Mine	003	G-7	11/29/2013	100	7.4						< 0.1		
MO - Winfield Mine	002	G-13	11/30/2013	1000	7.1	4	0.156		< 0.010				
MO - Winfield Mine	003	G-11	12/6/2013	400	8.2						< 0.1		
MO - Winfield Mine	003	G-7	12/6/2013	2000	7.3						< 0.1		
MO - Winfield Mine	002	G-13	12/7/2013	1000	6.9	2.5	0.133		< 0.010				
MO - Winfield Mine	003	G-11	12/13/2013	200	7.9						< 0.1		
MO - Winfield Mine	003	G-7	12/13/2013	2000	7						< 0.1		
MO - Winfield Mine	002	G-13	12/14/2013	2000	7	2.8	0.148						
MO - Winfield Mine	003	G-7	12/20/2013	500	6.8						< 0.1		
MO - Winfield Mine	003	G-11	12/20/2013	200	6.7						< 0.1		
MO - Winfield Mine	002	G-13	12/21/2013	2000	7.5	4.4	0.105						

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	12/27/2013	100	7						< 0.1		
MO - Winfield Mine	003	G-11	12/27/2013	100	6.9						< 0.1		
MO - Winfield Mine	002	G-13	12/28/2013	1500	7.4	2	0.105						
MO - Winfield Mine	003	G-7	1/3/2014	50	7.1						< 0.1		
MO - Winfield Mine	003	G-11	1/3/2014	20	7						< 0.1		
MO - Winfield Mine	002	G-13	1/11/2014	1000	7.2	3.2	0.264		< 0.010				
MO - Winfield Mine	003	G-7	1/17/2014	1000	7.3						< 0.1		
MO - Winfield Mine	003	G-11	1/17/2014	50	7.2						< 0.1		
MO - Winfield Mine	002	G-13	1/18/2014	1000	7.6	3.4	0.114						
MO - Winfield Mine	002	G-13	2/1/2014	1000	7.1	5.2	0.103						
MO - Winfield Mine	003	G-11	2/7/2014	100	7.2						< 0.1		
MO - Winfield Mine	003	G-7	2/7/2014	1000	7.5						< 0.1		
MO - Winfield Mine	002	G-13	2/14/2014	1000	6.8	25	0.271						
MO - Winfield Mine	003	G-11	2/14/2014	100	7						< 0.1		
MO - Winfield Mine	003	G-7	2/14/2014	500	7.7						< 0.1		
MO - Winfield Mine	003	G-7	2/21/2014	100	7.9						< 0.1		
MO - Winfield Mine	002	G-13	2/22/2014	1000	7	3.8	0.178						
MO - Winfield Mine	003	G-7	3/7/2014	500	7.3						< 0.1		
MO - Winfield Mine	003	G-11	3/7/2014	20	7.4						< 0.1		
MO - Winfield Mine	002	G-13	3/8/2014	1000	7.5	5	0.128		< 0.010				
MO - Winfield Mine	003	G-11	3/14/2014	20	7.6						< 0.1		
MO - Winfield Mine	002	G-13	3/15/2014	1000	7	6	0.236						
MO - Winfield Mine	003	G-11	3/21/2014	20	7.9						< 0.1		
MO - Winfield Mine	003	G-7	3/21/2014	500	7.8						< 0.1		
MO - Winfield Mine	002	G-13	3/22/2014	1500	8.1	11	0.14						
MO - Winfield Mine	003	G-7	3/28/2014	100	7.9						< 0.1		
MO - Winfield Mine	003	G-11	3/28/2014	20	8.1						< 0.1		
MO - Winfield Mine	003	G-11	4/11/2014	50	7.6						< 0.1		
MO - Winfield Mine	003	G-7	4/11/2014	2000	7.9						< 0.1		
MO - Winfield Mine	002	G-13	4/12/2014	1,000	8	4.5	0.144		< 0.010				
MO - Winfield Mine	003	G-11	4/17/2014	25	7.8						< 0.1		
MO - Winfield Mine	003	G-7	4/17/2014	100	8.2						< 0.1		
MO - Winfield Mine	002	G-13	4/18/2014	1,000	8.4	5.2	0.193						
MO - Winfield Mine	003	G-11	5/9/2014	20	7.4						< 0.1		
MO - Winfield Mine	003	G-7	5/9/2014	500	8						< 0.1		
MO - Winfield Mine	003	G-11	5/16/2014	200	7						< 0.1		
MO - Winfield Mine	003	G-7	5/16/2014	2000	7.9						< 0.1		
MO - Winfield Mine	002	G-13	5/17/2014	1,000	8.1	3	0.192						
MO - Winfield Mine	003	G-7	5/23/2014	50	8.1						< 0.1		
MO - Winfield Mine	003	G-11	5/23/2014	20	7.5						< 0.1		

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	002	G-13	5/23/2014	1,000	7.6	2	0.109		0.015				
MO - Winfield Mine	002	G-13	5/30/2014	1,000	8	1.7	0.086						
MO - Winfield Mine	003	G-7	6/1/2014	No Flow									
MO - Winfield Mine	003	G-11	6/1/2014	No Flow									
MO - Winfield Mine	002	G-13	6/13/2014	1,000	8.1	5.2	0.097		0.012				
MO - Winfield Mine	002	G-13	6/19/2014	1,000	7.6	2.2	0.121						
MO - Winfield Mine	002	G-13	7/1/2014	No Flow									
MO - Winfield Mine	003	G-7	7/1/2014	No Flow									
MO - Winfield Mine	003	G-11	7/1/2014	No Flow									
MO - Winfield Mine	002	G-13	8/1/2014	No Flow									
MO - Winfield Mine	003	G-7	8/1/2014	No Flow									
MO - Winfield Mine	003	G-11	8/1/2014	No Flow									
MO - Winfield Mine	002	G-13	9/1/2014	No Flow									
MO - Winfield Mine	003	G-11	9/1/2014	No Flow									
MO - Winfield Mine	003	G-7	9/1/2014	No Flow									
MO - Winfield Mine	002	G-13	10/1/2014	No Flow									
MO - Winfield Mine	002	G-13	11/1/2014	No Flow									
MO - Winfield Mine	003	G-7	11/1/2014	No Flow									
MO - Winfield Mine	003	G-11	11/1/2014	No Flow									
Monticello Winfield	003	G-11	1/9/2015	100	7.1						< 0.1		
Monticello Winfield	003	G-7	1/9/2015	2000	7.3						< 0.1		
Monticello Winfield	002	G-13	1/17/2015	1000	7.4						< 0.1		
Monticello Winfield	003	G-7	1/17/2015	100	7.2						< 0.1		
Monticello Winfield	002	G-13	1/20/2015	1000	7						< 0.1		
Monticello Winfield	002	G-13	1/23/2015	1000	7						< 0.1		
Monticello Winfield	003	G-7	1/30/2015	50	7.1						< 0.1		
Monticello Winfield		G-13	2/14/2015	1000	7.1						<0.1		
Monticello Winfield		G-11	2/27/2015	200	6.8						<0.1		
Monticello Winfield		G-11	2/27/2015	200	6.8						<0.1		
Monticello Winfield		G-13	2/27/2015	1000	7.6						<0.1		
Monticello Winfield		G-13	2/27/2015	1000	7.6						<0.1		
Monticello Winfield		G-7	2/27/2015	1000	6.7						<0.1		
Monticello Winfield		G-7	2/27/2015	1000	6.7						<0.1		
Monticello Winfield		G-11	3/6/2015	100	6.9						<0.1		
Monticello Winfield		G-11	3/6/2015	100	6.9						<0.1		
Monticello Winfield		G-13	3/6/2015	1000	7.2						<0.1		
Monticello Winfield		G-13	3/6/2015	1000	7.2						<0.1		
Monticello Winfield		G-7	3/6/2015	1000	6.9						<0.1		
Monticello Winfield		G-7	3/6/2015	1000	6.9						<0.1		
Monticello Winfield		G-11	3/13/2015	1000	7.0						<0.1		

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
Monticello Winfield		G-11	3/13/2015	1000	7.0						<0.1		
Monticello Winfield		G-13	3/13/2015	1500	7.0						<0.1		
Monticello Winfield		G-13	3/13/2015	1500	7.0						<0.1		
Monticello Winfield		G-7	3/13/2015	6000	7.1						<0.1		
Monticello Winfield		G-7	3/13/2015	6000	7.1						<0.1		
Monticello Winfield		G-11	3/20/2015	1000	7.1						<0.1		
Monticello Winfield		G-11	3/20/2015	1000	7.1						<0.1		
Monticello Winfield		G-13	3/20/2015	1500	7.2						<0.1		
Monticello Winfield		G-13	3/20/2015	1500	7.2						<0.1		
Monticello Winfield		G-11	3/27/2015	200	6.9						<0.1		
Monticello Winfield		G-11	3/27/2015	200	6.9						<0.1		
Monticello Winfield	002	G-13	3/27/2015	1500	7.1						<0.1		
Monticello Winfield	002	G-13	3/27/2015	1500	7.1						<0.1		
Monticello Winfield	003	G-7	3/27/2015	1000	7.0						<0.1		
Monticello Winfield		G-7	3/27/2015	1000	7.0						<0.1		
Monticello Winfield		G-11	4/3/2015	50	7.0						<0.1		
Monticello Winfield		G-13	4/3/2015	1500	7.0						<0.1		
Monticello Winfield		G-7	4/3/2015	500	6.9						<0.1		
Monticello Winfield		G-7	4/10/2015	1000	7.6						<0.1		
Monticello Winfield		G-13	4/11/2015	1000	7.2						<0.1		
Monticello Winfield		G-11	4/17/2015	50	7.0						<0.1		
Monticello Winfield		G-13	4/17/2015	1000	7.4						<0.1		
Monticello Winfield		G-7	4/17/2015	1000	7.6						<0.1		
Monticello Winfield		G-11	4/24/2015	100	7.4						<0.1		
Monticello Winfield		G-7	4/24/2015	2000	7.7						<0.1		
Monticello Winfield		G-13	4/25/2015	1000	7.4						<0.1		
Monticello Winfield		G-11	5/1/2015	20	6.9						<0.1		19
Monticello Winfield		G-13	5/1/2015	1000	7.6						<0.1		19
Monticello Winfield		G-7	5/1/2015	1000	7.2						<0.1		20
Monticello Winfield		G-7	5/8/2015	500	7.4						<0.1		21
Monticello Winfield		G-11	5/15/2015	1000	6.9						<0.1	54	23
Monticello Winfield		G-13	5/15/2015	1000	7.3						<0.1	70	23
Monticello Winfield		G-7	5/15/2015	4000	7.2						<0.1	196	23
Monticello Winfield		G-11	5/22/2015	1000	7.2						<0.1		24
Monticello Winfield		G-13	5/22/2015	1000	7.0						<0.1		24
Monticello Winfield		G-7	5/22/2015	2000	7.1						<0.1		24
Monticello Winfield		G-11	5/29/2015	500	7.4						<0.1		24
Monticello Winfield		G-7	5/29/2015	2000	7.3						<0.1		24
Monticello Winfield		G-13	5/30/2015	1500	7.5						<0.1		23
Monticello Winfield		G-11	6/5/2015	100	7.7						<0.1		

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
Monticello Winfield		G-13	6/5/2015	1000	7.7						<0.1		
Monticello Winfield		G-7	6/5/2015	500	7.1						<0.1		
Monticello Winfield		G-11	6/19/2015	200	7.3						<0.1		
Monticello Winfield		G-7	6/19/2015	1000	7.9						<0.1		
Monticello Winfield		G-13	6/20/2015	1000	7.9						<0.1		
Monticello Winfield		G-11	6/26/2015	25	7.5						<0.1		
Monticello Winfield		G-7	6/26/2015	100	7.8						<0.1		
Monticello Winfield		G-11	9/30/2015	No Flow									
Monticello Winfield		G-13	9/30/2015	No Flow									
Monticello Winfield		G-7	9/30/2015	No Flow									
Monticello Winfield		G-13	10/24/2015	1000	7.1						<0.1	70	20
Monticello Winfield		G-11	10/31/2015	500	7.2						<0.1		20
Monticello Winfield		G-13	10/31/2015	1000	6.9						<0.1		19
Monticello Winfield		G-7	10/31/2015	10000	7.2						<0.1		21
Monticello Winfield		G-11	11/6/2015	400	7.0						<0.1		
Monticello Winfield		G-13	11/6/2015	1500	7.1						<0.1		
Monticello Winfield		G-7	11/6/2015	4000	7.4						<0.1		
Monticello Winfield		G-11	11/14/2015	200	7.2						<0.1		
Monticello Winfield		G-13	11/14/2015	1000	7.2						<0.1		
Monticello Winfield		G-7	11/14/2015	1000	7.5						<0.1		
Monticello Winfield		G-11	11/20/2015	2000	7.3						<0.1		
Monticello Winfield		G-13	11/20/2015	1000	7.0						<0.1		
Monticello Winfield		G-7	11/20/2015	1000	7.0						<0.1		
Monticello Winfield		G-11	11/27/2015	2000	7.0						<0.1		
Monticello Winfield		G-13	11/27/2015	1500	7.4						<0.1		
Monticello Winfield		G-7	11/27/2015	10000	7.3						<0.1		
Monticello Winfield		G-11	12/4/2015	500	7.6						<0.1		
Monticello Winfield		G-13	12/4/2015	1000	7.6						<0.1		
Monticello Winfield		G-7	12/4/2015	1000	7.2						<0.1		
Monticello Winfield		G-11	12/11/2015	200	7.8						<0.1		
Monticello Winfield		G-13	12/11/2015	1000	7.9						<0.1		
Monticello Winfield		G-7	12/11/2015	500	7.6						<0.1		
Monticello Winfield		G-11	12/18/2015	500	7.8						<0.1		
Monticello Winfield		G-7	12/18/2015	4000	7.9						<0.1		
Monticello Winfield		G-11	12/23/2015	500	7.5						<0.1		
Monticello Winfield		G-7	12/23/2015	1000	7.5						<0.1		
Monticello Winfield		G-11	12/31/2015	2000	7.0						<0.1		
Monticello Winfield		G-7	12/31/2015	10000	7.1						<0.1		
Monticello Winfield	103	G-11	1/8/2016	1000	6.9						<0.1		
Monticello Winfield	003	G-7	1/8/2016	1000	7.3						<0.1		

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
Monticello Winfield	103	G-11	1/15/2016	200	7.4						<0.1	184	12
Monticello Winfield	003	G-7	1/15/2016	500	7.2						<0.1	132	11
Monticello Winfield	103	G-11	1/22/2016	100	7.2						<0.1		
Monticello Winfield	003	G-7	1/22/2016	500	7.0						<0.1		
Monticello Winfield	103	G-11	1/29/2016	50	7.1						<0.1		
Monticello Winfield	003	G-7	1/29/2016	100	7.5						<0.1		
Monticello Winfield	003	G-11	2/5/2016	50	7.0						<0.1		
Monticello Winfield	002	G-13	2/6/2016	1000	7.4						<0.1	86	11
Monticello Winfield	003	G-11	2/12/2016	50	7.5						<0.1		
Monticello Winfield	003	G-11	2/19/2016	100	7.3						<0.1		
Monticello Winfield	003	G-7	2/19/2016	1000	7.1						<0.1		
Monticello Winfield	003	G-11	2/26/2016	200	7.0						<0.1		
Monticello Winfield	003	G-7	2/26/2016	2000	7.4						<0.1		
Monticello Winfield		G-11	3/4/2016	100	7.6						<0.1		
Monticello Winfield		G-7	3/4/2016	500	7.7						<0.1		
Monticello Winfield		G-11	3/11/2016	9000	7.9						<0.1		
Monticello Winfield		G-13	3/11/2016	1000	7.9						<0.1		
Monticello Winfield		G-7	3/11/2016	20000	7.6						<0.1		
Monticello Winfield		G-11	3/18/2016	200	7.8						<0.1		
Monticello Winfield		G-7	3/18/2016	500	7.1						<0.1		
Monticello Winfield		G-11	3/25/2016	100	7.7						<0.1		
Monticello Winfield		G-7	3/25/2016	500	7.4						<0.1		
Monticello Winfield		G-11	4/1/2016	200	7.4						<0.1		18
Monticello Winfield		G-7	4/1/2016	2000	7.8						<0.1		19
Monticello Winfield		G-11	4/8/2016	100	7.8						<0.1		20
Monticello Winfield		G-7	4/8/2016	100	8						<0.1		21
Monticello Winfield		G-11	4/15/2016	100	7.6						<0.1		21
Monticello Winfield		G-7	4/15/2016	100	8.1						<0.1		22
Monticello Winfield	103	G-11	4/20/2016	6000	7.6						0.1	86	22
Monticello Winfield	003	G-7	4/20/2016	6000	6.9						0.1	128	22
Monticello Winfield		G-11	4/30/2016	10000	7.4						<0.1		21
Monticello Winfield		G-7	4/30/2016	40000	7						<0.1		20
Monticello Winfield		G-11	5/6/2016	200	7.2						<0.1		21
Monticello Winfield		G-7	5/6/2016	500	6.9						<0.1		21
Monticello Winfield		G-11	5/13/2016	100	7.5						<0.1		21
Monticello Winfield		G-7	5/13/2016	100	7.1						<0.1		21
Monticello Winfield		G-11	6/3/2016	25	6.8						<0.1		24
Monticello Winfield		G-7	6/3/2016	100	7.6						<0.1		25
Monticello Winfield	103	G-11	9/30/2016	No Flow									
Monticello Winfield	002	G-13	9/30/2016	No Flow									

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
Monticello Winfield	003	G-7	9/30/2016	No Flow									
Monticello Winfield	103	G-11	12/29/2016	100	6.90						<0.1	90	16
Monticello Winfield	003	G-7	12/30/2016	2000	6.80						<0.1	116	15
Monticello Winfield	003	G-7	1/6/2017	500	7						<0.1	134	
Monticello Winfield	003	G-7	1/13/2017	100	7.4						<0.1		
Monticello Winfield	103	G-11	1/20/2017	100	6.7						<0.1	166	
Monticello Winfield	103	G-11	1/27/2017	20	7.1						<0.1		
Monticello Winfield	003	G-7	1/27/2017	500	7						<0.1		
Monticello Winfield	103	G-11	2/3/2017	50	7.3						<0.1		
Monticello Winfield	003	G-7	2/3/2017	200	7.1						<0.1		
Monticello Winfield	103	G-11	2/10/2017	20	7.1						<0.1		
Monticello Winfield	003	G-7	2/10/2017	100	7.3						<0.1		
Monticello Winfield	103	G-11	2/17/2017	20	7.4						<0.1		
Monticello Winfield	003	G-7	2/17/2017	100	7.6						<0.1		
Monticello Winfield	103	G-11	2/24/2017	20	7.5						<0.1		
Monticello Winfield	003	G-7	2/24/2017	500	7.5						<0.1		
Monticello Winfield	103	G-11	3/3/2017	20	7.7						<0.1		
Monticello Winfield	003	G-7	3/3/2017	200	7.3						<0.1		
Monticello Winfield	003	G-7	3/10/2017	100	7						<0.1		
Monticello Winfield		G-11	3/30/2017	1000	7.9						<0.1		18
Monticello Winfield	103	G-11	3/31/2017	50	7.5						<0.1		
Monticello Winfield	103	G-11	4/8/2017	20	7.3						<0.1		22
Monticello Winfield	103	G-11	4/13/2017	1000	6.9						<0.1		24
Monticello Winfield	003	G-7	4/13/2017	10000	6.9						<0.1		22
Monticello Winfield	103	G-11	4/21/2017	50	7						<0.1	48	22
Monticello Winfield	003	G-7	4/21/2017	1000	7.6						<0.1	96	24
Monticello Winfield	103	G-11	4/28/2017	20	7.3						<0.1		24
Monticello Winfield	003	G-7	4/29/2017	500	6.9						<0.1		22
Monticello Winfield	003	G-7	5/5/2017	50	7.3						<0.1		25
Monticello Winfield	103	G-11	6/1/2017	50	7.6						<0.1		26
Monticello Winfield	003	G-7	6/2/2017	1000	7						<0.1		25
Monticello Winfield	103	G-11	6/9/2017	50	7.8						<0.1		26
Monticello Winfield	003	G-7	6/9/2017	1000	7.5						<0.1		26
Monticello Winfield	003	G-7	6/16/2017	100	7.9						<0.1		27
Monticello Winfield		G-11	7/7/2017	50	7.8						<0.1		30
Monticello Winfield		G-7	7/7/2017	500	7.9						<0.1		30
Monticello Winfield	003	G-7	7/15/2017	100	7						<0.1	272	31
Monticello Winfield		G-7	8/11/2017	100	7.8						<0.1		31
Monticello Winfield	103	G-11	8/19/2017	100	7.6						<0.1	114	32
Monticello Winfield		G-11	8/19/2017	100	7.6						<0.1		32

FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
Monticello Winfield		G-7	8/19/2017	500	7.9						<0.1		32
Monticello Winfield		G-11	8/25/2017	20	7.4						<0.1		31
Monticello Winfield		G-7	8/25/2017	50	8.1						<0.1		31
Monticello Winfield		G-11	12/31/2017	No Flow									
Monticello Winfield		G-7	12/31/2017	No Flow									
Monticello Winfield	003	G-7	1/26/2018	500	7.4						<0.1	150	11
Monticello Winfield		G-7	2/16/2018	500	7.8						<0.1		11
Monticello Winfield	103	G-11	2/24/2018	8000	7.3						<0.1	52	13
Monticello Winfield		G-11	3/2/2018	8000	7.5						<0.1		15
Monticello Winfield		G-7	3/2/2018	20000	7.9						<0.1		15
Monticello Winfield		G-11	3/10/2018	500	7.2						<0.1		15
Monticello Winfield		G-7	3/10/2018	100	7.7						<0.1		13
Monticello Winfield		G-11	3/14/2018	100	7.5						<0.1		17
Monticello Winfield		G-7	3/14/2018	50	7.9						<0.1		16
Monticello Winfield		G-11	3/23/2018	50	7.8						<0.1		19

TABLE 1 for Outfall No. 012 - Pond G - 7

Samples are (check one): Composites ☐ Grabs ■

Pollutants	Sample 1 (mg/l)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	<2	<2	2.0	<2	2.0
CBOD (5-day)	<2	<2	<2	<2	<2
Chemical Oxygen Demand	<6	7	10	<6	7.25
Total Organic Carbon	5.0	9.3	6.8	6.3	6.9
Dissolved Oxygen	3.07	8.72	7.53	6.17	6.37
Ammonia Nitrogen	<0.200	<0.200	<0.200	<0.200	<0.200
Total Suspended Solids	11.0	10	12	11	11
Nitrate Nitrogen	<0.09	<0.09	<0.09	<0.09	<0.09
Total Organic Nitrogen	0.80	0.52	0.48	0.55	0.59
Total Phosphorus	0.03	0.05	0.05	0.06	0.05
Oil and Grease	<5	<5	<5	<5	<5
Total Residual Chlorine	0.1	0.0	0.0	0.0	0.04
Total Dissolved Solids	140	156	170	4	118
Sulfate	58	48	60	64	58
Chloride	9	9	6	7	8
Fluoride	<0.4	<0.4	<0.4	<0.4	<0.4
Total Alkalinity (mg/L as $CaCO_3$)	<1.00	<1.00	<1.00	<1.00	<1.00
Temperature (° F)	70.16	68.18	69.80	73.40	70.39
pH (standard Units)	7.90	7.58	7.06	7.21	7.44

TABLE 2 for Outfall No. 012 - Pond G - 7

Samples are (check one): Composites ☐ Grabs ■

Pollutants	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)	MAL (mg/L)
Aluminum, total	0.420	0.381	0.510	0.372	0.421	2.5
Antimony, total	<0.010	<0.010	<0.010	<0.010	<0.010	5
Arsenic, total	<0.001	<0.010	<0.010	<0.010	<0.010	0.05
Barium, total	0.063	0.064	0.068	0.067	0.066	3
Beryllium, total	<0.010	<0.010	<0.010	<0.010	<0.010	0.5
Cadmium, total	0.001	<0.001	<0.001	<0.001	0.001	1
Chromium, total	<0.003	<0.003	<0.003	<0.003	<0.003	3
Chromium, hexavalent	<0.003	<0.003	<0.003	<0.003	<0.003	3
Chromium, trivalent	<0.002	0.010	<0.002	<0.002	0.004	N/A
Copper, total	<0.010	<0.010	<0.010	<0.010	<0.010	2
Cyanide, available	<0.002	<0.002	<0.002	<0.002	<0.002	10
Lead, total	<0.005	<0.005	<0.005	<0.005	<0.005	5
Mercury, total	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.005/0.0005
Nickel, total	<0.010	<0.010	<0.010	<0.010	<0.010	2
Selenium, total	<0.010	<0.010	<0.010	<0.010	<0.010	5
Silver, total	<0.002	<0.002	<0.002	<0.002	<0.002	0.5
Thallium, total	<0.010	<0.010	<0.010	<0.010	<0.010	0.5
Zinc, total	<0.005	<0.005	<0.005	<0.005	<0.005	5

TABLE 3

Completion of Table 3 **is required** for all external outfalls which discharge process wastewater. Partial completion of Table 3 is required for all external outfalls with nonprocess wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed (Instructions, Pages 56-57).

TABLE 3 for Outfall No. 012 - Pond G - 7

Samples are (check one): Composites ☐ Grabs ■

Pollutants	**Samp. 1 (µg/l)***	**Samp. 2 (µg/l)***	**Samp. 3 (µg/l)***	**Samp. 4 (µg/l)***	**Avg. (µg/l)***	**MAL (µg/L)***
Acrylonitrile						50
Anthracene						10
Benzene	<0.917	<0.917	<0.917	<0.917	<0.917	10
Benzidine	<0.509	<0.509	<0.509	<0.509	<0.509	50
Benzo(a)anthracene	<0.316	<0.316	<0.316	<0.316	<0.316	5
Benzo(a)pyrene	<0.332	<0.332	<0.332	<0.332	<0.332	5
Bis(2-chloroethyle)ether						10
Bis(2-ethylhexyl)phthalate						10
Bromodichloromethane [Dibromochloromethane]	<0.250	<0.250	<0.250	<0.250	<0.250	10
Bromoform						10
Carbon tetrachloride	<0.246	<0.246	<0.246	<0.246	<0.246	2
Chlorobenzene	<0.218	<0.218	<0.218	<0.218	<0.218	10
Chlorodibromomethande						10
Chloroform	<0.508	<0.508	<0.508	<0.508	<0.508	10
Chrysene	<0.297	<0.297	<0.297	<0.297	<0.297	5
m-Cresol [3-Methylphenol]	<0.938	<0.938	<0.938	<0.938	<0.938	10
o-Cresol [2-Methylphenol]	<0.938	<0.938	<0.938	<0.938	<0.938	10
p-Cresol [4-Methylphenol]	<0.938	<0.938	<0.938	<0.938	<0.938	10
1,2-Dibromoethane	<0.418	<0.418	<0.418	<0.418	<0.418	10
m-Dichlorobenzene [1,3-Dichlorobenzene]						10
o-Dichlorobenzene [1,2-Dichlorobenzene]						10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.252	<0.252	<0.252	<0.252	<0.252	10
3,3'-Dichlorobenzidine						5
1,2-Dichloroethane	<0.214	<0.214	<0.214	<0.214	<0.214	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<0.232	<0.232	<0.232	<0.232	<0.232	10
Dichloromethane [Methylene chloride]						20

Pollutants (Outfall 012)	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
1,2-Dichloropropane						10
1,3-Dichloropropene [1,3-Dichloropropylene]						10
2,4-Dimethylphenol						10
Di-*n*-Butyl phthalate						10
Ethylbenzene						10
Fluoride						500
Hexachlorobenzene	<0.128	<0.128	<0.128	<0.128	<0.128	5
Hexachlorobutadiene	<0.097	<0.097	<0.097	<0.097	<0.097	10
Hexachlorocyclopentadiene						10
Hexachloroethane	<0.194	<0.194	<0.194	<0.194	<0.194	20
Methyl ethyl ketone	<0.396	<0.396	<0.396	<0.396	<0.396	50
Nitrobenzene	<0.234	<0.234	<0.234	<0.234	<0.234	10
N-Nitrosodiethylamine	<1.020	<1.020	<1.020	<1.020	<1.020	20
N-Nitroso-di-*n*-butylamine	<1.040	<1.040	<1.040	<1.040	<1.040	20
Nonylphenol						333
Pentachlorobenzene	<1.610	<1.610	<1.610	<1.610	<1.610	20
Pentachlorophenol	<0.203	<0.203	<0.203	<0.203	<0.203	5
Phenathrene	<0.171	<0.171	<0.171	<0.171	<0.171	10
Polychlorinated biphenyls (PCBs)(**)						0.2
Pyridine	<1.650	<1.650	<1.650	<1.650	<1.650	20
1,2,4,5-Tetrachlorobenzene	<1.930	<1.930	<1.930	<1.930	<1.930	20
1,1,2,2-Tetrachloroethane						10
Tetrachloroethene [Tetrachloroethylene]	<0.890	<0.890	<0.890	<0.890	<0.890	10
Toluene						10
1,1,1-Trichloroethane	<0.150	<0.150	<0.150	<0.150	<0.150	10
1,1,2-Trichloroethane						10
Trichloroethene [Trichloroethylene]	<0.458	<0.458	<0.458	<0.458	<0.458	10
2,4,5-Trichlorophenol	<0.818	<0.818	<0.818	<0.818	<0.818	50
TTHM (Total Trihalomethanes)	<2.458	<2.458	<2.458	<2.458	<2.458	10
Vinyl Chloride	<0.326	<0.326	<0.326	<0.326	<0.326	10

(*) Indicate units if different from µg/L.
(**) Total of PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016.

TABLE 4

Partial Completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls. (Instructions, Pages 57-58)

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Parathion (ethyl)						50
Toxaphene						10
2,4,5-TP [Silvex]						10

* Indicate units if different from µ/L.

TABLE 6

Completion of Table 6 **is required** for all external outfalls but is not required for internal outfalls. (instructions, Page 58)

TABLE 6 for Outfall No. 012 - Pond G - 7

Samples are (check one): Composites ☐ Grabs ■

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide		X	<0.20	<0.20	1	400
Color (PCU)	X		17.9	17.9	1	--
Nitrate-Nitrite(as N)	X		3.74	3.74	1	--
Sulfide(as S)		X	<0.025	<0.025	1	--
Sulfite(as SO_3)		X	<0.0610	<0.0610	1	--
Surfactants		X	<1.00	<1.00	1	--
Boron, total	X		0.096	0.096	1	20
Cobalt, total		X	<0.010	<0.010	1	0.3
Iron, total	X		0.588	0.588	1	7
Magnesium, total	X		7.935	7.935	1	20
Manganese, total	X		0.020	0.020	1	0.5
Molybdenum, total		X	<0.010	<0.010	1	1
Tin, total		X	<0.010	<0.010	1	5
Titanium, total		X	<0.010	<0.010	1	30

* Indicate units if different from µ/L.

Appendix C
WAM MODIFICATIONS

WAM modifications

Addition of new Control Point watershed parameters to the DIS file.

- Proposed impoundment Pit129

FD585100 A10000 0
WP585100 1.26875

- Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

FDTCUSBC A10000 0
WPTCUSBC 35.3043

- Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

FDPPDISC A10000 0
WPPPDISC 21.8636

Modifications to Cypress Run3 DAT file.

Addition of new Control Points:

- Proposed impoundment Pit129

CP585100 585005 7 513

- Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

CPTCUSBC A10000 7 NONE

- Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

CPPPDISC TCUSBC 7 NONE

- Additional control point modifications to maintain the stream network.

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000    7    513
**CP585007  A10000    7    NONE
**CP585006  A10000    7    NONE
CP585031  PPDISC    7    513
CP585007  PPDISC    7    NONE
CP585006  PPDISC    7    NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000    7    NONE
**CP585004  A10000    7    NONE
**CP585003  A10000    7    NONE
**CP585002  A10000    7    NONE
**CP585001  A10000    7    NONE
CP585005  PPDISC    7    NONE
CP585004  TCUSBC    7    NONE
CP585003  TCUSBC    7    NONE
CP585002  TCUSBC    7    NONE
CP585001  TCUSBC    7    NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000    7    513
**CPA10100  A10000    7    513
**CPA10090  A10000    7    513
CPA10120  TCUSBC    7    513
```

CPA10100 TCUSBC 7 513
CPA10090 TCUSBC 7 513

Modeling of Pit 129.

```
SVPIT129        0       94      161      251      359      479     1054
1410     2079     3759     4090     5355
SAPIT129        0       12       16       20       23       25       33
39       50       62       72       98
```

Modeled Diversion of Pit129

WR585100 236 XMONTH20181231 1 1 1.0 104000PT129 PT129
WSPIT129 5355

Optional flow switches controlling timing of pit129 water discharges.

```
FS  1  1  A10000   0.0   1.0   0600    1     0  1  1    1
FS  2  1  A10000   0.0   1.0   0600    1     0  2  2    1
FS  3  1  A10000   0.0   1.0   0600    1     0  3  3    1
FS  4  1  A10000   0.0   1.0   0600    1     0  4  4    1
FS  5  1  A10000   0.0   1.0   0600    1     0  5  5    1
FS  6  1  A10000   0.0   1.0   0600    1     0  6  6    1
FS  7  1  A10000   0.0   1.0   0.1     1     0  7  7    1
FS  8  1  A10000   0.0   1.0   0.1     1     0  8  8    1
FS  9  1  A10000   0.0   1.0   0.1     1     0  9  9    1
FS 10  1  A10000   0.0   1.0   0.1     1     0 10 10    1
FS 11  1  A10000   0.0   1.0   0600    1     0 11 11    1
FS 12  1  A10000   0.0   1.0   0600    1     0 12 12    1
```

Modeled additional water right simulating a proposed junior water right authorizing impoundment of additional water in LOTP.

WRB10040 0 IND20181231 1 JrFill 4590
WSLKOPNS 251000

Modifications for Discharge Model.
Current Discharge Scenario:

- Copy CI record from Run8 Cypress WAM dated 1/13/2010.

```
CIB10310  50.42  47.26  53.28  49.72  44.71  41.43
CI        40.91  39.96  36.83  38.05  41.43  50.42
```

- Add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP

```
CIPPDISC   146   184   162   143   155   151
CI         146   173   142   146   202   178
```

- Add return flow parameters and return flow control points from Run8 for Water rights upstream of the Big Cypress Creek arm of Lake O The Pines.

```
WRA10340   1392   MUN19700720  1  2  0.600            60404560301   4560
CYPRESS
WRA10340      0   IND19700720  1  2  0.700  A10020    60404560304   4560
CYPRESS
WRA10200   7000   MUN19711220  1  2  0.600  A10020    60404564301   4564
BOB
WRA10200   4693   IND19711220  1  2  0.700            60404564303   4564   BOB
```

WRA10200   1449   MUN19711220 1 2 0.600 B10310   2MEMBERSFRMBOB
4590   BOB LOTPBOB
WRA10120   642   MUN19550822 1 2 0.600 A10020   60404565301   4565
WRA10120   0   IND19550822 1 2 0.700   60404565302   4565
WRA10070   400   MUN19380317 1 2 0.600 A10020   60404569301   4569
WRA10060   0   MUN19750120 1 2 0.600 A10020   60404570301   4570

Permitted Discharge Scenario:

- Copy CI record from Run8 Cypress WAM dated 1/13/2010.

CIB10310 50.42 47.26 53.28 49.72 44.71 41.43
CI   40.91 39.96 36.83 38.05 41.43 50.42

- Add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP

CIPPDISC   271   255   278   314   318   306
CI   427   427   408   329   286   302

- Add return flow parameters and return flow control points from Run8 for Water rights upstream of the Big Cypress Creek arm of Lake O The Pines. The modification from the run8 scenario is the full permitted diversion target.

WRA10340   10500   MUN19700720 1 2 0.600   60404560301   4560
CYPRESS
WRA10340   3590   IND19700720 1 2 0.700 A10020   60404560304   4560
CYPRESS
WRA10200   10000   MUN19711220 1 2 0.600 A10020   60404564301   4564
BOB
WRA10200   10900   IND19711220 1 2 0.700   60404564303   4564   BOB
WRA10200   1930   MUN19711220 1 2 0.600 B10310   2MEMBERSFRMBOB
4590   BOB LOTPBOB
WRA10120   1680   MUN19550822 1 2 0.600 A10020   60404565301   4565
WRA10120   550   IND19550822 1 2 0.700   60404565302   4565
WRA10070   400   MUN19380317 1 2 0.600 A10020   60404569301   4569
WRA10060   144   MUN19750120 1 2 0.600 A10020   60404570301   4570

Appendix D

REPORT ON WATER QUALITY SAMPLING FROM WATER MONITORING SOLUTIONS, INC.

Water Monitoring Solutions.

November 19, 2018

Carollo Engineers, Inc.
Tony Smith, PE
5316 Hwy. 290 W., Ste. 330
Austin, TX 78735

RE: Luminant Mine Pit Sampling

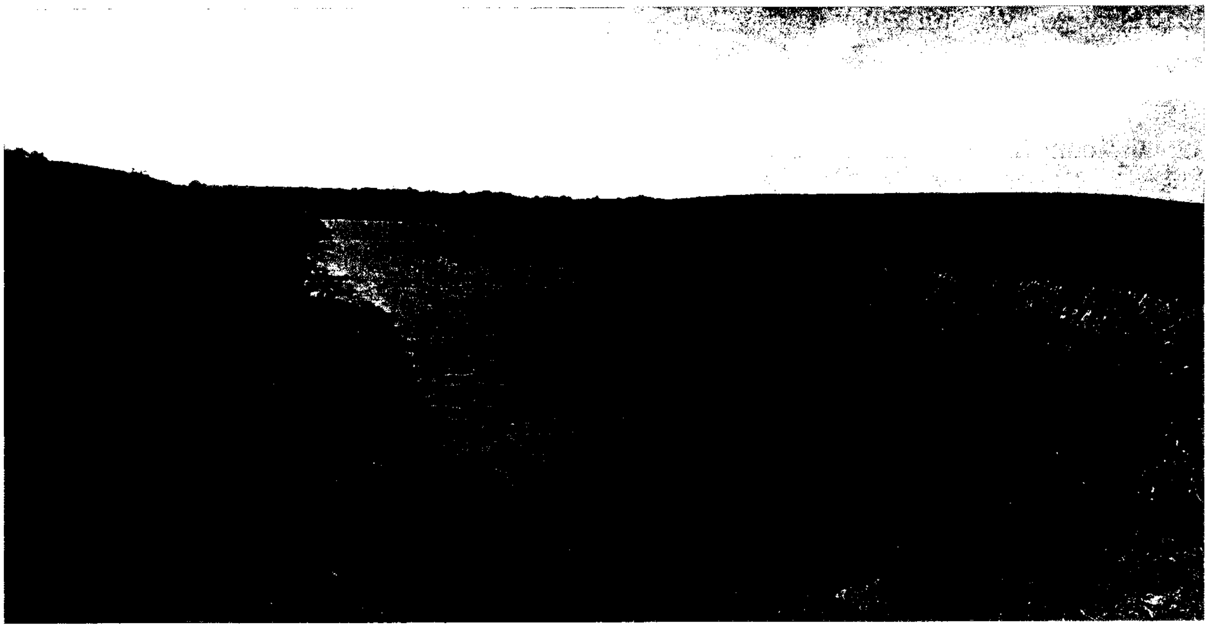
Mr. Smith,

On August 7 and October 30, 2018, Water Monitoring Solutions, Inc. (WMS) collected water quality data and laboratory samples in the Luminant Mine Pit near Mount Pleasant, Texas. For both events, sampling was conducted near the North and South ends of the water body. Water quality profiles were recorded at each meter using a YSI, Inc. EXO1 sonde with optical dissolved oxygen, pH, conductivity, and temperature sensors. Laboratory samples were collected at approximately 0.3 meter below the surface and between one and two meters from the bottom. Total depth, air temperature, and secchi transparency was measured at each station and general field observations were recorded.

During the August 7th site visit, the mine pit was stratified with a thermocline located between five and six meters at each station. The area had experienced a drought through most of the summer and the water was very clear with a mean secchi transparency of 2.25 meters. Laboratory samples were collected between 8:30 and 9:05 AM, and the air temperature was relatively warm at 27.5°C. A light to moderate southerly breeze created small waves on the surface which made keeping the boat in position relatively difficult. Water quality profiles were recorded at two locations at the southern end of the pit. The depth was relatively shallow at 10 meters for southernmost site which is reported as South A. Another profile was conducted farther into the pit where the total depth was 13.2 meters deep. Laboratory samples were collected at this location. After making several attempts to find deep water near the northern end, samples were collected at a station that was 7.5 meters deep.

Ambient conditions were much different for the October 30th site visit. The region had received several inches of rain over the previous weeks, and the mine pit was no longer stratified. The water was turbid with a mean secchi transparency of 0.6 meters. Laboratory samples were collected between 8:55 and 9:25 AM, and the air temperature averaged 20°C. A moderate to gusty southerly breeze produced wave activity which made keeping the boat in position difficult. Water quality profiles were recorded for both ends of the pit. During this visit, the

North site was collected farther away from the shore and was deeper at 14.0 meters. The total depth for each station was between 13 and 14 meters. Laboratory samples were collected approximately 0.3 meter below the surface and about 1 meter above the bottom of the water body.



Luminant mine pit facing south

The results of the water quality profiles showed that the mine pit would meet Texas Surface Water Quality Standards (TSWQS). Dissolved oxygen averaged 7.4 mg/L in the mixed surface layer during the August visit and was 7.3 mg/L in October. The pH was slightly basic with a mean of 8.0 s.u. in the summer and slightly lower at 7.6 s.u. in the fall. Recent rainfall and lake turnover likely contributed to the lower pH in October. The mean specific conductance was 277 µS/cm for both sampling events. Although specific conductance was not high, it should be noted that conductance is typically in the range of 150 - 160 µS/cm in Lake Bob Sandlin and in Lake Cypress Springs.

In general, there was little variation in the results across all samples. Regardless of stratification, temperature, and weather variability, most parameters had similar results. Laboratory analysis showed that nutrients were limited in the mine pit with a mean of 0.04 mg/L of Total Phosphorus and 0.08 mg/L Nitrate-Nitrogen. Both Ammonia and Nitrite-Nitrogen were below detection limits for all samples, and Total Kjedahl Nitrogen was low with a mean of 0.51 mg/L. As a result of limited nutrients, chlorophyll-*a* and pheophytin were very low in the surface samples with a mean of 2.02 µg/L and less than detection limits, respectively. Alkalinity is typically low in the region and the mine pit was no different with a mean of 55.6 mg/L.

E. coli bacteria was collected with the surface samples and was below detection limits in the summer. Bacteria were present in the October samples and in a much higher concentration at the South station as compared with the North. Waterfowl were observed upon arrival at the mine pit, and are one possible source of the bacteria. Although present, the *E. coli* results were well below Texas Surface Water Quality Standards and likely pose no human contact recreation risk.

The only laboratory result that should be noted is sulfate. Big Cypress Creek, the receiving water for the mine pit, is impaired and shown on the Texas 303(d) List for sulfate. The mean sulfate result for the mine pit samples was 63.7 mg/L with a range of 5 mg/L. The TSWQS standard for reservoirs is 50 mg/L and 100 mg/L for streams and rivers. Since there are no apparent sources contributing sulfate to the water, the source of sulfate is most likely from the soils that had been exposed during mining operations.

Parameter	Units	Mean	Max	Min	Range
Phosphorus, Total (As P)	mg/L	0.0404	0.0544	0.0264	0.028
Nitrate (as N)	mg/L	0.0804	0.18	0.0188	0.1612
Nitrite (as N)	mg/L	Non-Detect			
Nitrogen, Ammonia (as N)	mg/L	Non-Detect			
Total Kjeldahl Nitrogen (as N)	mg/L	0.51	0.78	0.19	0.59
Total Suspended Solids	mg/L	7	12	1	11
Sulfate	mg/L	63.7	67	62	5
Chloride	mg/L	5.41	5.62	5.07	0.55
Total Organic Carbon	mg/L	2.89	3.38	2.54	0.84
Total Alkalinity (CaCO3)	mg/L	55.6	58.1	54.2	3.9
Chlorophyll-*a*	ug/L	2.017	3.68	0.764	2.916
Pheophytin-*a*	ug/L	Non-Detect			
E. coli	MPN/100mL	15.02	25.9	4.13	21.77

Results of Laboratory Analysis

The complete results of the laboratory analysis and water quality profiles are included as an attachment in an Excel spreadsheet along with the LCRA Laboratory Reports in PDF format. Please review and contact me with any questions.

Thank you for the opportunity to partner with you on this project.

Regards,

Randy Rushin

WAM modifications

Addition of new Control Point watershed parameters to the DIS file.

- Proposed impoundment Pit129

FD585100 A10000 0
WP585100 1.26875

- Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

FDTCUSBC A10000 0
WPTCUSBC 35.3043

- Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

FDPPDISC A10000 0
WPPPDISC 21.8636

Modifications to Cypress Run3 DAT file.

Addition of new Control Points:

- Proposed impoundment Pit129

CP585100 585005 7 513

- Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

CPTCUSBC A10000 7 NONE

- Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

CPPPDISC TCUSBC 7 NONE

- Additional control point modifications to maintain the stream network.

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000        7        513
**CP585007  A10000        7        NONE
**CP585006  A10000        7        NONE
CP585031  PPDISC        7        513
CP585007  PPDISC        7        NONE
CP585006  PPDISC        7        NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000        7        NONE
**CP585004  A10000        7        NONE
**CP585003  A10000        7        NONE
**CP585002  A10000        7        NONE
**CP585001  A10000        7        NONE
CP585005  PPDISC        7        NONE
CP585004  TCUSBC        7        NONE
CP585003  TCUSBC        7        NONE
CP585002  TCUSBC        7        NONE
CP585001  TCUSBC        7        NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000        7        513
**CPA10100  A10000        7        513
**CPA10090  A10000        7        513
CPA10120  TCUSBC        7        513
```

CPA10100 TCUSBC 7 513
CPA10090 TCUSBC 7 513

Modeling of Pit 129.

```
SVPIT129        0       94      161      251      359      479      1054
1410     2079     3759     4090     5355
SAPIT129        0       12       16       20       23       25        33
39       50       62       72       98
```

Modeled Diversion of Pit129

WR585100 236 XMONTH20181231 1 1 1.0 104000PT129 PT129
WSPIT129 5355

Optional flow switches controlling timing of pit129 water discharges.

```
FS  1  1  A10000   0.0   1.0   0600    1     0  1  1    1
FS  2  1  A10000   0.0   1.0   0600    1     0  2  2    1
FS  3  1  A10000   0.0   1.0   0600    1     0  3  3    1
FS  4  1  A10000   0.0   1.0   0600    1     0  4  4    1
FS  5  1  A10000   0.0   1.0   0600    1     0  5  5    1
FS  6  1  A10000   0.0   1.0   0600    1     0  6  6    1
FS  7  1  A10000   0.0   1.0   0.1     1     0  7  7    1
FS  8  1  A10000   0.0   1.0   0.1     1     0  8  8    1
FS  9  1  A10000   0.0   1.0   0.1     1     0  9  9    1
FS 10  1  A10000   0.0   1.0   0.1     1     0 10 10    1
FS 11  1  A10000   0.0   1.0   0600    1     0 11 11    1
FS 12  1  A10000   0.0   1.0   0600    1     0 12 12    1
```

Modeled additional water right simulating a proposed junior water right authorizing impoundment of additional water in LOTP.

WRB10040 0 IND20181231 1 JrFill 4590
WSLKOPNS 251000

Modifications for Discharge Model.

Current Discharge Scenario:

- Copy CI record from Run8 Cypress WAM dated 1/13/2010.

CIB10310 50.42 47.26 53.28 49.72 44.71 41.43
CI 40.91 39.96 36.83 38.05 41.43 50.42

- Add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP

CIPPDISC 146 184 162 143 155 151
CI 146 173 142 146 202 178

- Add return flow parameters and return flow control points from Run8 for Water rights upstream of the Big Cypress Creek arm of Lake O The Pines.

WRA10340 1392 MUN19700720 1 2 0.600 60404560301 4560
CYPRESS
WRA10340 0 IND19700720 1 2 0.700 A10020 60404560304 4560
CYPRESS
WRA10200 7000 MUN19711220 1 2 0.600 A10020 60404564301 4564
BOB
WRA10200 4693 IND19711220 1 2 0.700 60404564303 4564 BOB

WRA10200 1449 MUN19711220 1 2 0.600 B10310 2MEMBERSFRMBOB
4590 BOB LOTPBOB
WRA10120 642 MUN19550822 1 2 0.600 A10020 60404565301 4565
WRA10120 0 IND19550822 1 2 0.700 60404565302 4565
WRA10070 400 MUN19380317 1 2 0.600 A10020 60404569301 4569
WRA10060 0 MUN19750120 1 2 0.600 A10020 60404570301 4570

Permitted Discharge Scenario:

- Copy CI record from Run8 Cypress WAM dated 1/13/2010.

CIB10310 50.42 47.26 53.28 49.72 44.71 41.43
CI 40.91 39.96 36.83 38.05 41.43 50.42

- Add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP

CIPPDISC 271 255 278 314 318 306
CI 427 427 408 329 286 302

- Add return flow parameters and return flow control points from Run8 for Water rights upstream of the Big Cypress Creek arm of Lake O The Pines. The modification from the run8 scenario is the full permitted diversion target.

WRA10340 10500 MUN19700720 1 2 0.600 60404560301 4560
CYPRESS
WRA10340 3590 IND19700720 1 2 0.700 A10020 60404560304 4560
CYPRESS
WRA10200 10000 MUN19711220 1 2 0.600 A10020 60404564301 4564
BOB
WRA10200 10900 IND19711220 1 2 0.700 60404564303 4564 BOB
WRA10200 1930 MUN19711220 1 2 0.600 B10310 2MEMBERSFRMBOB
4590 BOB LOTPBOB
WRA10120 1680 MUN19550822 1 2 0.600 A10020 60404565301 4565
WRA10120 550 IND19550822 1 2 0.700 60404565302 4565
WRA10070 400 MUN19380317 1 2 0.600 A10020 60404569301 4569
WRA10060 144 MUN19750120 1 2 0.600 A10020 60404570301 4570

cyp_DischargeScenarios

cyp_CurrentDischarges_woPit129-Base

cyp_CurrentDischarges_woPit129-Base

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ===============================================
JD    51    1948      1      -1      -1       0       5       0       0       3       0       0       0
** ===============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10     104000PT129
**FY   1.0  241800    1000     100                          FYLOTP
**FY   1.0   48500    1000     100      10                     BOB
**FY     1   10000    1000     100      10     10405850307
**FY     1   10000    1000     100      10     10405850301
**FY     1   10000    1000     100      10     10405850306
**FY     1   10000    1000     100      10     10405850304
**FY     1   10000    1000     100      10     10405850303
**FY     1   10000    1000     100      10     10405850305
**FY     1   10000    1000     100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
```

```
UC          0.080   0.084   0.088   0.090   0.090   0.087
UC    REC   0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                      7             NONE
CPPPDISC  TCUSBC                      7             NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                      7              513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                      7             NONE
CP585037  A10120                      7              513
CP585009  A10120                      7             NONE
CP585010  A10120                      7             NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                      7              513
**CP585007  A10000                      7             NONE
**CP585006  A10000                      7             NONE
CP585031  PPDISC                      7              513
CP585007  PPDISC                      7             NONE
CP585006  PPDISC                      7             NONE
CP585036  585034                      7              513
CP585034  585033                      7              513
CP585033  585032                      7              513
CP585035  585032                      7              513
CP585032  585005                      7              513
```

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                     7         NONE
**CP585004  A10000                     7         NONE
**CP585003  A10000                     7         NONE
**CP585002  A10000                     7         NONE
**CP585001  A10000                     7         NONE
CP585005  PPDISC                     7         NONE
CP585004  TCUSBC                     7         NONE
CP585003  TCUSBC                     7         NONE
CP585002  TCUSBC                     7         NONE
CP585001  TCUSBC                     7         NONE
CP585011  A10070                     7         NONE
CP585012  A10010                     7         NONE
CP585013  A10010                     7         NONE
** add control points for A5814
CP581431  581432                     7       QAD413
CP581432  A10260                     7       QAD413
CP581433  A10240                     7       QAD413
** add control points for A5813
CP581301  D10000                     7         NONE
CP581302  D10000                     7         NONE
CP581303  D10000                     7         NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                     7       B10170
CP458237  B10170                     7       B10170
**
CPA10370  A10340                     7       QAD413
CPA10350  A10340                     7       QAD413
CPA10340  A10300                     7
**CPA10300  A10000                     7         NONE
CPA10300  A10200                     7         NONE
**
CPA10290  A10200                     7         NONE
CPA10280  A10240                     7       QAD413
CPA10260  A10240                     7       QAD413
```

```
**CPA10240  A10000                       7
CPA10240  A10200                       7
CPA10200  A10000                       7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                       7              513
**CPA10100  A10000                       7              513
**CPA10090  A10000                       7              513
CPA10120  TCUSBC                       7              513
CPA10100  TCUSBC                       7              513
CPA10090  TCUSBC                       7              513
CPA10070  A10010                       7              513
CPA10060  A10010                       7              513
CPA10050  A10010                       7              513
CPA10040  A10010                       7              513
CPA10030  A10010                       7           QAD413
CPA10020  A10010                       7             NONE
CPA10010  A10000                       7              513
CPA10000  B10150                       0             NONE
CPB10320  B10310                       7           QAD413
CPB10310  B10150                       7             NONE
CPB10300  B10150                       7           QAD413
CPB10290  B10150                       7           QAD413
CPB10270  B10150                       7
CPB10260  B10150                       7           QAD413
CPB10250  B10150                       7           QAD413
CPB10230  B10170                       7              513
CPB10220  B10230                       7              513
CPB10210  B10150                       7              513
CPB10200  B10150                       7              513
CPB10180  B10170                       7              513
CPB10170  B10150                       7
CPB10150  B10040                       7             NONE
CPB10120  B10040                       7              513
CPB10110  B10040                       7              513
CPB10100  B10040                       7              513
```

cyp_CurrentDischarges_woPit129-Base

CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

CPE10050	E10040	7		QAD412
CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE

```
CPA240DM     OUT                       2     NONE     NONE
CPB270DM     OUT                       2     NONE     NONE
CPB70DUM     OUT                       2     NONE     NONE
CPB20MUN     OUT                       2     NONE     NONE
CPAVNGER     OUT                       2     NONE     NONE
CPDNGRFD     OUT                       2     NONE     NONE
CPHGHSPR     OUT                       2     NONE     NONE
CPJEFFSN     OUT                       2     NONE     NONE
CPLVGSTN     OUT                       2     NONE     NONE
CPORECTY     OUT                       2     NONE     NONE
**
** ===================================================================
CPA-ZERO     OUT                       2     ZERO     ZERO      -3       0
** ===================================================================
**
**
**  Constant Inflow Records
**
CIB10310   50.42   47.26   53.28   49.72   44.71   41.43
CI         40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP
CIPPDISC     146     184     162     143     155     151
CI           146     173     142     146     202     178
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
**WR585100     482     IND20181231   1                         104000PT129    PT129
**WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231   1                         10405850001    5850
WR585002       0     IND20041231   1                         10405850002    5850
SO                               BACKUP
```

```
WR585003        0     IND20041231   1                                   10405850003    5850
SO                                 BACKUP
WR585004        0     IND20041231   1                                   10405850004    5850
SO                                 BACKUP
WR585005        0     IND20041231   1                                   10405850005    5850
SO                                 BACKUP
WR585006        0     IND20041231   1                                   10405850006    5850
SO                                 BACKUP
WR585007        0     IND20041231   1                                   10405850007    5850
SO                                 BACKUP
WR585008        0     IND20041231   1                                   10405850008    5850
SO                                 BACKUP
WR585009        0     IND20041231   1                                   10405850009    5850
SO                                 BACKUP
WR585010        0     IND20041231   1                                   10405850010    5850
SO                                 BACKUP
WR585011        0     IND20041231   1                                   10405850011    5850
SO                                 BACKUP
WR585012        0     IND20041231   1                                   10405850012    5850
SO                                 BACKUP
WR585013        0     IND20041231   1                                   10405850013    5850
SO                                 BACKUP
WR585037        0     IND20041231   1                                   10405850307    5850
WSR58507    525.6   0.979  0.5841
WR585031        0     IND20041231   1                                   10405850301    5850
WSR58501    271.4   0.979  0.5841
WR585036        0     IND20041231   1                                   10405850306    5850
WSR58506      327   0.979  0.5841
WR585034        0     IND20041231   1                                   10405850304    5850
WSR58504    509.3   0.979  0.5841
WR585033        0     IND20041231   1                                   10405850303    5850
WSR58503    287.3   0.979  0.5841
WR585035        0     IND20041231   1                                   10405850305    5850
WSR58505    604.8  0.4012   0.856
WR585032        0     IND20041231   1                                   10405850302    5850
```

```
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028  1                                       10405814301
WS   HR9     356   0.979  0.5841
WR581432       0   OTHER20031028  1                                       10405814302
WS  HR21     263   0.979  0.5841
WR581433       0   OTHER20031028  1                                       10405814303
WS  HR10    1495  0.4012   0.856
** APPLICATION 5813
WR581301     685    581320031001  1                                       10405813001
WR581303       0    581320031001  1                                       10405813003
SO                               BACKUP
WR581302       0    581320031001  1                                       10405813002
SO                               BACKUP
WRD10130       0     REC19830222  1                                       10404334301   4334
WSWHTOAK     6.7   0.979  0.5841      0
WRD10160       0     REC19830222  1                                       10404334302   4334
WSBASSLK     3.4   0.979  0.5841      0
WRD10140       0     REC19830222  1                                       10404334303   4334
WSDOGWOD       6   0.979  0.5841      0
WRD10180       0     REC19830222  1                                       10404334304   4334
WSLKAUTM     130   0.979  0.5841      0
WRD10170       0     REC19830222  1                                       10404334305   4334
WSCATFSH       5   0.979  0.5841      0
WRD10150       0     REC19830222  1                                       10404334306   4334
WSLKPINE    10.5   0.979  0.5841      0
WRD10190       0     REC19830222  1                                       10404334307   4334
WSLKWALL       5   0.979  0.5841      0
WRF10080    2343     MUN19830418  1                                  1    10404349001   4349
WSF10080    8.29   0.979  0.5841      0
SO       3293.45    2343
WRF10080    1281     IND19830418  1                                  1    10404349002   4349
WSF10080    8.29   0.979  0.5841      0
SO       3293.45    1281
```

```
WRB10250       0     REC19841127   1                                         10404522301
WSB10250     380   0.979  0.5841       0
WRF10180   202.5     IRR19841218   1                                  1      10404525101
WRA10370       0     REC19750106   1                                         60404558301
WSA10370     350   0.979  0.5841       0
WRA10350       0     REC19751215   1                                         60404559301
WSA10350     230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340    1392     MUN19700720   1   2   0.600                             60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                         60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                         60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     IND19700720   1   2   0.700  A10020                     60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                         60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                         60404561001
WRA10290    24.0     IRR19630801   1                                         60404562002
**
**
**  Lake Monticello
**
**
```

```
WRA10240   15300     IND19700406   1                                        60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                        60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200    7000     MUN19711220   1    2    0.600  A10020                  60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                        60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200    4693     IND19711220   1    2    0.700                          60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                        60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1449     MUN19711220   1    2    0.600  B10310               2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                         1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                        60404564304    4564   BOBROR
**
** ===================================================================
WRA10120     642     MUN19550822   1    2    0.600  A10020                  60404565301    4565
WSTANKSL    2700  0.4012   0.856        0
WRA10120       0     IND19550822   1    2    0.700                          60404565302    4565
```

```
WSTANKSL    2700  0.4012   0.856       0
WRA10120       0     REC19550822   1                                  60404565303    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10090   21.44     IRR19591231   1                                  60404566301
WSA10090    0.23   0.979  0.5841       0
WRA10100       6     IRR19561231   1                                  60404567301
WSA10100       5   0.979  0.5841       0
WRA10050     7.5     IRR19631231   1                                  60404568301
WSA10050      35   0.979  0.5841       0
WRA10070     400     MUN19380317   1   2   0.600  A10020              60404569301    4569
WSNEWCTY    1176  0.4012   0.856       0
WRA10070       0     REC19380317   1                                  60404569302    4569
WSNEWCTY    1176  0.4012   0.856       0
WRA10060       0     MUN19750120   1   2   0.600  A10020              60404570301    4570
WSOLDCTY     100   0.979  0.5841       0
WRA10060       0     REC19750120   1                                  60404570302    4570
WSOLDCTY     100   0.979  0.5841       0
WRA10040       4     IRR19631231   1                                  60404571301
WSA10040      12   0.979  0.5841       0
WRA10030     4.4     IRR19631231   1                                  60404572301
WSA10030      10   0.979  0.5841       0
WRE10020    25.3     IND19850604   1                                  10404573301
WSE10020      42   0.979  0.5841       0
WRA10010      11     IRR19551231   1                                  60404573001
WRB10320       0     IRR19511231   1                                  60404574001    4574
WSOFF320     5.0   0.979  0.5841       0
SO          5.43    1.40
WRB10320     1.4     IRR19511231   1                                  60404574301    4574
WSB10320     0.5   0.979  0.5841       0
WSOFF320     5.0   0.979  0.5841       0
OR           5.0
SO          5.43    1.40
WRB10290       0     REC19730430   1                                  60404575301
WSB10290      80   0.979  0.5841       0
**
```

```
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                         60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                         60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                         60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                         60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                         60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                         60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                         60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                         60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                         60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                         60404582004    4582 ELLISON
```

```
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                               60404582303    4582   barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                                    4582BU    4582   barnes
WSBARNES   24000
SO                        458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                                           60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                                           60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                                           60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                                           60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                                           60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                                           60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                           60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                           60404589301
WSB10050     240   0.979  0.5841       0
```

```
**
**
**  Lake O'the Pines
** ===========================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                                  1MUN    4590   FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                                  2IND    4590   FYLOTP
WSLKOPNS  251000
** ===========================================================================
**
WRF10250       8     IRR19670430   1                            1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                            1     60404592001
WRF10240      85     IRR19620531   1                            1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                            1     60404594002
WRF10210    2000     MUN19630218   1                            1     60404595001
WRF10190   80.21     IRR19570319   1                            1     60404596001
WRC10040      25     IRR19760621   1                                  60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                                  60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                                  60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                            1     60404600001
WRD10090       0     REC19461121   1                                  60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                                  60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                                  60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                                  60404604301
WSD10060      28   0.979  0.5841       0
```

cyp_CurrentDischarges_woPit129-Base

WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			

```
WR 10020        0      REC19470922   1                                     60404621301
WS 10020      160   0.979  0.5841        0
WRD10120        0      REC19860404   1                                     10405054301
WSD10120      550   0.979  0.5841        0
WRC10050        0      REC19860729   1                                     10405080301
WSC10050      300   0.979  0.5841        0
WRF10100        0      REC19861125   1                           1         10405112301
WSF10100      277   0.979  0.5841        0
WRA10280        0      IND19880121   1                                     10405167301
WSPONDH1      477   0.979  0.5841        0
WRB10300        0      IRR19890112   1                                     10405212301
WSB10300     0.09   0.979  0.5841        0
WRB10260        0      IRR19890810   1                                     10405251301
WSB10260       86   0.979  0.5841        0
IFD10110   1025.6   CONST19891214    1   1                  IF5272
**
WRD10110     6180      MUN19891214   1                                     10405272301    5272
WSLKGILM    12720
WRD10110        0      REC19891214   1                                     10405272302    5272
WSLKGILM    12720
WRF10090        0      REC19900710   1                           1         10405302301
WSF10090       80   0.979  0.5841        0
WRA10260        0      IND19950522   1                                     10405529301
WSPONDH4    173.7   0.979  0.5841        0
WRE10080        0      REC19950801   1                                     10405537301
WSE10080      296   0.979  0.5841        0
WRE10090       34      IRR19980320   1                                     10405608301    5608
WSE10090     55.6   0.979  0.5841        0
WRE10090        0      REC19980320   1                                     10405608302    5608
WSE10090     55.6   0.979  0.5841        0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005        0   OTHER99999999    1                                     60409999301    9999
WS CADDO   125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005    40000      MUN99999999   1                                     60409999302    9999
```

```
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT        0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT        0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN        0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN        0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN        0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN        0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS        0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS        0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN        0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN        0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS        0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS        0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO        0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO        0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH        0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH        0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM        0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM        0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
**SVPIT129       0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
**SAPIT129       0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
```

```
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_CurrentDischarges_woPit129-FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ==============================================
JO
RO    -1
**
**FY      1   10000    1000     100      10      104000PT129
FY   1.0  241800    1000     100                            FYLOTP
**FY    1.0   48500    1000     100      10                      BOB
**FY      1   10000    1000     100      10      10405850307
**FY      1   10000    1000     100      10      10405850301
**FY      1   10000    1000     100      10      10405850306
**FY      1   10000    1000     100      10      10405850304
**FY      1   10000    1000     100      10      10405850303
**FY      1   10000    1000     100      10      10405850305
**FY      1   10000    1000     100      10      10405850302
**
**  Monthly Water Use Factors
**
UC  5813       60      60      60      60      76      76
UC             76      76      76      60      60      60
UC   MUN    0.077   0.070   0.075   0.076   0.084   0.091
UC          0.100   0.100   0.089   0.085   0.076   0.078
UC   IND    0.068   0.063   0.070   0.080   0.081   0.077
UC          0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR    0.000   0.001   0.004   0.013   0.051   0.162
UC          0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN    0.079   0.080   0.084   0.080   0.081   0.077
UC          0.080   0.084   0.088   0.090   0.090   0.087
UC   REC    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
```

```
UC OTHER   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
UC CONST     2.0     2.0     2.0     2.0     2.0     1.0
UC           1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH      31   28.25      31      30      31      30
UC            31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                   7              NONE
CPPPDISC  TCUSBC                   7              NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                   7               513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                   7              NONE
CP585037  A10120                   7               513
CP585009  A10120                   7              NONE
CP585010  A10120                   7              NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                   7               513
**CP585007  A10000                   7              NONE
**CP585006  A10000                   7              NONE
CP585031  PPDISC                   7               513
CP585007  PPDISC                   7              NONE
CP585006  PPDISC                   7              NONE
CP585036  585034                   7               513
CP585034  585033                   7               513
CP585033  585032                   7               513
CP585035  585032                   7               513
CP585032  585005                   7               513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                   7              NONE
**CP585004  A10000                   7              NONE
**CP585003  A10000                   7              NONE
**CP585002  A10000                   7              NONE
**CP585001  A10000                   7              NONE
```

```
CP585005  PPDISC        7     NONE
CP585004  TCUSBC        7     NONE
CP585003  TCUSBC        7     NONE
CP585002  TCUSBC        7     NONE
CP585001  TCUSBC        7     NONE
CP585011  A10070        7     NONE
CP585012  A10010        7     NONE
CP585013  A10010        7     NONE
** add control points for A5814
CP581431  581432        7     QAD413
CP581432  A10260        7     QAD413
CP581433  A10240        7     QAD413
** add control points for A5813
CP581301  D10000        7     NONE
CP581302  D10000        7     NONE
CP581303  D10000        7     NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170        7     B10170
CP458237  B10170        7     B10170
**
CPA10370  A10340        7     QAD413
CPA10350  A10340        7     QAD413
CPA10340  A10300        7
**CPA10300  A10000        7     NONE
CPA10300  A10200        7     NONE
**
CPA10290  A10200        7     NONE
CPA10280  A10240        7     QAD413
CPA10260  A10240        7     QAD413
**CPA10240  A10000        7
CPA10240  A10200        7
CPA10200  A10000        7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000        7     513
**CPA10100  A10000        7     513
**CPA10090  A10000        7     513
CPA10120  TCUSBC        7     513
CPA10100  TCUSBC        7     513
```

cyp_CurrentDischarges_woPit129-FYLOTP

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

cyp_CurrentDischarges_woPit129-FYLOTP

CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

```
CPF10130  F10080                7            NONE
CPF10120  F10080                7             513
CPF10110  F10080                7             513
CPF10100  F10080                7          QAD512
CPF10090  F10080                7          QAD413
CPF10080  F10005                7             513
CPF10030  F10020                7          QAD412
CPF10020  F10005                7             513
CPF10005  F10000                7
CPF10000     OUT                0            NONE
CP 10050   10040                7          QAD413
CP 10040   10010                7          QAD413
CP 10020   10010                7          QAD413
CP 10010     OUT                7            NONE
CPQAD412     OUT                0
CPQAD413     OUT                0
CPQAD512     OUT                0
CP   513     OUT                0
CPSABINE     OUT                2    NONE    NONE
CPSULPHR     OUT                2    NONE    NONE
CPA240DM     OUT                2    NONE    NONE
CPB270DM     OUT                2    NONE    NONE
CPB70DUM     OUT                2    NONE    NONE
CPB20MUN     OUT                2    NONE    NONE
CPAVNGER     OUT                2    NONE    NONE
CPDNGRFD     OUT                2    NONE    NONE
CPHGHSPR     OUT                2    NONE    NONE
CPJEFFSN     OUT                2    NONE    NONE
CPLVGSTN     OUT                2    NONE    NONE
CPORECTY     OUT                2    NONE    NONE
**
** ====================================================================
CPA-ZERO     OUT                2    ZERO    ZERO      -3       0
** ====================================================================
**
**
**  Constant Inflow Records
**
```

```
CIB10310   50.42   47.26   53.28   49.72   44.71   41.43
CI         40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP
CIPPDISC     146     184     162     143     155     151
CI           146     173     142     146     202     178
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
**WR585100     482     IND20181231   1                          104000PT129   PT129
**WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231   1                          10405850001    5850
WR585002       0     IND20041231   1                          10405850002    5850
SO                                 BACKUP
WR585003       0     IND20041231   1                          10405850003    5850
SO                                 BACKUP
WR585004       0     IND20041231   1                          10405850004    5850
SO                                 BACKUP
WR585005       0     IND20041231   1                          10405850005    5850
SO                                 BACKUP
WR585006       0     IND20041231   1                          10405850006    5850
SO                                 BACKUP
WR585007       0     IND20041231   1                          10405850007    5850
SO                                 BACKUP
WR585008       0     IND20041231   1                          10405850008    5850
SO                                 BACKUP
WR585009       0     IND20041231   1                          10405850009    5850
SO                                 BACKUP
WR585010       0     IND20041231   1                          10405850010    5850
SO                                 BACKUP
WR585011       0     IND20041231   1                          10405850011    5850
SO                                 BACKUP
WR585012       0     IND20041231   1                          10405850012    5850
SO                                 BACKUP
WR585013       0     IND20041231   1                          10405850013    5850
```

```
SO                                  BACKUP
WR585037        0     IND20041231    1                         10405850307   5850
WSR58507    525.6   0.979  0.5841
WR585031        0     IND20041231    1                         10405850301   5850
WSR58501    271.4   0.979  0.5841
WR585036        0     IND20041231    1                         10405850306   5850
WSR58506      327   0.979  0.5841
WR585034        0     IND20041231    1                         10405850304   5850
WSR58504    509.3   0.979  0.5841
WR585033        0     IND20041231    1                         10405850303   5850
WSR58503    287.3   0.979  0.5841
WR585035        0     IND20041231    1                         10405850305   5850
WSR58505    604.8  0.4012   0.856
WR585032        0     IND20041231    1                         10405850302   5850
WSR58502    245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431        0   OTHER20031028    1                         10405814301
WS   HR9      356   0.979  0.5841
WR581432        0   OTHER20031028    1                         10405814302
WS  HR21      263   0.979  0.5841
WR581433        0   OTHER20031028    1                         10405814303
WS  HR10     1495  0.4012   0.856
** APPLICATION 5813
WR581301      685    581320031001    1                         10405813001
WR581303        0    581320031001    1                         10405813003
SO                                  BACKUP
WR581302        0    581320031001    1                         10405813002
SO                                  BACKUP
WRD10130        0     REC19830222    1                         10404334301   4334
WSWHTOAK      6.7   0.979  0.5841        0
WRD10160        0     REC19830222    1                         10404334302   4334
WSBASSLK      3.4   0.979  0.5841        0
WRD10140        0     REC19830222    1                         10404334303   4334
WSDOGWOD        6   0.979  0.5841        0
WRD10180        0     REC19830222    1                         10404334304   4334
WSLKAUTM      130   0.979  0.5841        0
WRD10170        0     REC19830222    1                         10404334305   4334
```

```
WSCATFSH        5   0.979  0.5841       0
WRD10150        0     REC19830222   1                                     10404334306     4334
WSLKPINE     10.5   0.979  0.5841       0
WRD10190        0     REC19830222   1                                     10404334307     4334
WSLKWALL        5   0.979  0.5841       0
WRF10080     2343     MUN19830418   1                               1     10404349001     4349
WSF10080     8.29   0.979  0.5841       0
SO        3293.45    2343
WRF10080     1281     IND19830418   1                               1     10404349002     4349
WSF10080     8.29   0.979  0.5841       0
SO        3293.45    1281
WRB10250        0     REC19841127   1                                     10404522301
WSB10250      380   0.979  0.5841       0
WRF10180    202.5     IRR19841218   1                               1     10404525101
WRA10370        0     REC19750106   1                                     60404558301
WSA10370      350   0.979  0.5841       0
WRA10350        0     REC19751215   1                                     60404559301
WSA10350      230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340     1392     MUN19700720   1   2   0.600                         60404560301     4560 CYPRESS
WSLKCYPS    72800
**
WRA10340     1000     MUN19660131   1                                     60404560302     4560 CYPRESS
WSLKCYPS    72800
**
WRA10340      210     IRR19700720   1                                     60404560303     4560 CYPRESS
WSLKCYPS    72800
**
WRA10340        0     IND19700720   1   2   0.700  A10020                 60404560304     4560 CYPRESS
WSLKCYPS    72800
**
WRA10340        0     REC19660131   1                                     60404560305     4560 CYPRESS
WSLKCYPS    72800
**
```

```
**
WRA10300   11.61     IRR19630831   1                              60404561001
WRA10290    24.0     IRR19630801   1                              60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                              60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                              60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200    7000     MUN19711220   1   2   0.600  A10020          60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                              60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200    4693     IND19711220   1   2   0.700                  60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                              60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1449     MUN19711220   1   2   0.600  B10310        2MEMBERSFRMBOB   4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                               1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                              60404564304    4564   BOBROR
```

```
**
** ==================================================================
WRA10120     642      MUN19550822   1   2   0.600  A10020          60404565301   4565
WSTANKSL    2700  0.4012    0.856       0
WRA10120       0      IND19550822   1   2   0.700                  60404565302   4565
WSTANKSL    2700  0.4012    0.856       0
WRA10120       0      REC19550822   1                              60404565303   4565
WSTANKSL    2700  0.4012    0.856       0
WRA10090   21.44      IRR19591231   1                              60404566301
WSA10090    0.23   0.979   0.5841       0
WRA10100       6      IRR19561231   1                              60404567301
WSA10100       5   0.979   0.5841       0
WRA10050     7.5      IRR19631231   1                              60404568301
WSA10050      35   0.979   0.5841       0
WRA10070     400      MUN19380317   1   2   0.600  A10020          60404569301   4569
WSNEWCTY    1176  0.4012    0.856       0
WRA10070       0      REC19380317   1                              60404569302   4569
WSNEWCTY    1176  0.4012    0.856       0
WRA10060       0      MUN19750120   1   2   0.600  A10020          60404570301   4570
WSOLDCTY     100   0.979   0.5841       0
WRA10060       0      REC19750120   1                              60404570302   4570
WSOLDCTY     100   0.979   0.5841       0
WRA10040       4      IRR19631231   1                              60404571301
WSA10040      12   0.979   0.5841       0
WRA10030     4.4      IRR19631231   1                              60404572301
WSA10030      10   0.979   0.5841       0
WRE10020    25.3      IND19850604   1                              10404573301
WSE10020      42   0.979   0.5841       0
WRA10010      11      IRR19551231   1                              60404573001
WRB10320       0      IRR19511231   1                              60404574001   4574
WSOFF320     5.0   0.979   0.5841       0
SO          5.43    1.40
WRB10320     1.4      IRR19511231   1                              60404574301   4574
WSB10320     0.5   0.979   0.5841       0
WSOFF320     5.0   0.979   0.5841       0
OR           5.0
SO          5.43    1.40
WRB10290       0      REC19730430   1                              60404575301
```

```
WSB10290      80   0.979  0.5841       0
**
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                   60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                   60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                   60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                   60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                   60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                   60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                   60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                   60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                   60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                   60404582004    4582 ELLISON
WSELLISN   24700
```

```
SO                  26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                   60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                       4582BU    4582  barnes
WSBARNES   24000
SO                         458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                               60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                               60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                               60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                               60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                               60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                               60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                               60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                               60404589301
WSB10050     240   0.979  0.5841       0
**
**
**  Lake O'the Pines
** ===============================================================================
```

```
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                  1MUN    4590  FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                  2IND    4590  FYLOTP
WSLKOPNS  251000
** ==========================================================================
**
WRF10250       8     IRR19670430   1                    1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                    1     60404592001
WRF10240      85     IRR19620531   1                    1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                    1     60404594002
WRF10210    2000     MUN19630218   1                    1     60404595001
WRF10190   80.21     IRR19570319   1                    1     60404596001
WRC10040      25     IRR19760621   1                          60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                          60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                          60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                    1     60404600001
WRD10090       0     REC19461121   1                          60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                          60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                          60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                          60404604301
WSD10060      28   0.979  0.5841       0
WRD10030       0     REC19741209   1                          60404605301    4605
WSD10030      36   0.979  0.5841       0
WRD10040       0     REC19741209   1                          60404605302    4605
WSD10040     114   0.979  0.5841       0
WRD10020       0     REC19740812   1                          60404606301
WSD10020     294   0.979  0.5841       0
WRD10010       0     REC19740812   1                          60404607301
```

cyp_CurrentDischarges_woPit129-FYLOTP

WSD10010	330	0.979	0.5841		0			
WRE10070	18.2	IRR19520630		1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15	IND19680318		1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225	IND19821206		1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122	IRR19551010		1			60404610001	
WRE10010	955	IND19430701		1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58	IRR19550323		1		1	60404612001	
WRF10140	165.21	MIN19690224		1		1	60404613001	
WRF10130	7558	MUN19470418		1		1	60404614001	4614
WRF10130	8442	MUN19561127		1		1	60404614002	4614
WRF10120	10	IRR19751215		1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0	REC19690811		1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0	REC19720207		1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42	IRR19790221		1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51	IRR19810413		1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0	REC19760524		1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0	REC19781016		1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0	REC19470922		1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0	REC19860404		1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0	REC19860729		1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0	REC19861125		1		1	10405112301	
WSF10100	277	0.979	0.5841		0			
WRA10280	0	IND19880121		1			10405167301	
WSPONDH1	477	0.979	0.5841		0			

```
WRB10300        0     IRR19890112   1                                    10405212301
WSB10300     0.09   0.979  0.5841       0
WRB10260        0     IRR19890810   1                                    10405251301
WSB10260       86   0.979  0.5841       0
IFD10110   1025.6   CONST19891214   1   1                 IF5272
**
WRD10110     6180     MUN19891214   1                                    10405272301    5272
WSLKGILM    12720
WRD10110        0     REC19891214   1                                    10405272302    5272
WSLKGILM    12720
WRF10090        0     REC19900710   1                           1        10405302301
WSF10090       80   0.979  0.5841       0
WRA10260        0     IND19950522   1                                    10405529301
WSPONDH4    173.7   0.979  0.5841       0
WRE10080        0     REC19950801   1                                    10405537301
WSE10080      296   0.979  0.5841       0
WRE10090       34     IRR19980320   1                                    10405608301    5608
WSE10090     55.6   0.979  0.5841       0
WRE10090        0     REC19980320   1                                    10405608302    5608
WSE10090     55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005        0   OTHER99999999   1                                    60409999301    9999
WS CADDO   125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005    40000     MUN99999999   1                                    60409999302    9999
WS CADDO   165000
**
**   Storage-Areā Tables
**
SVLKMONT        0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT        0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN        0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN        0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN        0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN        0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS        0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS        0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
```

```
SVELLISN      0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN      0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS      0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS      0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO      0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO      0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH      0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH      0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM      0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM      0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
**SVPIT129      0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
**SAPIT129      0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_CurrentDischarges_wPit129-Base

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ================================================
JD    51   1948      1      -1      -1      0      5      0      0      3      0      0      0
** ================================================
JO
RO    -1
**
**FY     1   10000    1000    100     10     104000PT129
**FY   1.0  241800    1000    100                          FYLOTP
**FY   1.0   48500    1000    100     10                      BOB
**FY     1   10000    1000    100     10     10405850307
**FY     1   10000    1000    100     10     10405850301
**FY     1   10000    1000    100     10     10405850306
**FY     1   10000    1000    100     10     10405850304
**FY     1   10000    1000    100     10     10405850303
**FY     1   10000    1000    100     10     10405850305
**FY     1   10000    1000    100     10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813     60      60      60      60      76      76
UC           76      76      76      60      60      60
UC   MUN  0.077   0.070   0.075   0.076   0.084   0.091
UC        0.100   0.100   0.089   0.085   0.076   0.078
UC   IND  0.068   0.063   0.070   0.080   0.081   0.077
UC        0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR  0.000   0.001   0.004   0.013   0.051   0.162
UC        0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN  0.079   0.080   0.084   0.080   0.081   0.077
```

```
UC          0.080   0.084   0.088   0.090   0.090   0.087
UC    REC   0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                      7            NONE
CPPPDISC  TCUSBC                      7            NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                      7             513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                      7            NONE
CP585037  A10120                      7             513
CP585009  A10120                      7            NONE
CP585010  A10120                      7            NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                      7             513
**CP585007  A10000                      7            NONE
**CP585006  A10000                      7            NONE
CP585031  PPDISC                      7             513
CP585007  PPDISC                      7            NONE
CP585006  PPDISC                      7            NONE
CP585036  585034                      7             513
CP585034  585033                      7             513
CP585033  585032                      7             513
CP585035  585032                      7             513
CP585032  585005                      7             513
```

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                    7          NONE
**CP585004  A10000                    7          NONE
**CP585003  A10000                    7          NONE
**CP585002  A10000                    7          NONE
**CP585001  A10000                    7          NONE
CP585005  PPDISC                    7          NONE
CP585004  TCUSBC                    7          NONE
CP585003  TCUSBC                    7          NONE
CP585002  TCUSBC                    7          NONE
CP585001  TCUSBC                    7          NONE
CP585011  A10070                    7          NONE
CP585012  A10010                    7          NONE
CP585013  A10010                    7          NONE
** add control points for A5814
CP581431  581432                    7        QAD413
CP581432  A10260                    7        QAD413
CP581433  A10240                    7        QAD413
** add control points for A5813
CP581301  D10000                    7          NONE
CP581302  D10000                    7          NONE
CP581303  D10000                    7          NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                    7        B10170
CP458237  B10170                    7        B10170
**
CPA10370  A10340                    7        QAD413
CPA10350  A10340                    7        QAD413
CPA10340  A10300                    7
**CPA10300  A10000                    7          NONE
CPA10300  A10200                    7          NONE
**
CPA10290  A10200                    7          NONE
CPA10280  A10240                    7        QAD413
CPA10260  A10240                    7        QAD413
```

```
                                        cyp_CurrentDischarges_wPit129-Base
**CPA10240  A10000                        7
CPA10240  A10200                        7
CPA10200  A10000                        7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                        7              513
**CPA10100  A10000                        7              513
**CPA10090  A10000                        7              513
CPA10120  TCUSBC                        7              513
CPA10100  TCUSBC                        7              513
CPA10090  TCUSBC                        7              513
CPA10070  A10010                        7              513
CPA10060  A10010                        7              513
CPA10050  A10010                        7              513
CPA10040  A10010                        7              513
CPA10030  A10010                        7           QAD413
CPA10020  A10010                        7             NONE
CPA10010  A10000                        7              513
CPA10000  B10150                        0             NONE
CPB10320  B10310                        7           QAD413
CPB10310  B10150                        7             NONE
CPB10300  B10150                        7           QAD413
CPB10290  B10150                        7           QAD413
CPB10270  B10150                        7
CPB10260  B10150                        7           QAD413
CPB10250  B10150                        7           QAD413
CPB10230  B10170                        7              513
CPB10220  B10230                        7              513
CPB10210  B10150                        7              513
CPB10200  B10150                        7              513
CPB10180  B10170                        7              513
CPB10170  B10150                        7
CPB10150  B10040                        7             NONE
CPB10120  B10040                        7              513
CPB10110  B10040                        7              513
CPB10100  B10040                        7              513
```

cyp_CurrentDischarges_wPit129-Base

CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

CPE10050	E10040	7		QAD412
CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE

```
CPA240DM     OUT                            2    NONE    NONE
CPB270DM     OUT                            2    NONE    NONE
CPB70DUM     OUT                            2    NONE    NONE
CPB20MUN     OUT                            2    NONE    NONE
CPAVNGER     OUT                            2    NONE    NONE
CPDNGRFD     OUT                            2    NONE    NONE
CPHGHSPR     OUT                            2    NONE    NONE
CPJEFFSN     OUT                            2    NONE    NONE
CPLVGSTN     OUT                            2    NONE    NONE
CPORECTY     OUT                            2    NONE    NONE
**
** ================================================================
CPA-ZERO     OUT                            2    ZERO    ZERO     -3     0
** ================================================================
**
**
**  Constant Inflow Records
**
CIB10310   50.42   47.26   53.28   49.72   44.71   41.43
CI         40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP
CIPPDISC     146     184     162     143     155     151
CI           146     173     142     146     202     178
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100     482    IND20181231   1   1    1.0                104000PT129    PT129
WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50    IND20041231   1                            10405850001     5850
WR585002       0    IND20041231   1                            10405850002     5850
SO                             BACKUP
```

cyp_CurrentDischarges_wPit129-Base

WR585003	0	IND20041231	1	10405850003	5850
SO			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
SO			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
SO			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
SO			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
SO			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
SO			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
SO			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
SO			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
SO			BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
SO			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
SO			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979	0.5841		
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979	0.5841		
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979	0.5841		
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979	0.5841		
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979	0.5841		
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012	0.856		
WR585032	0	IND20041231	1	10405850302	5850

```
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028  1                               10405814301
WS   HR9     356   0.979  0.5841
WR581432       0   OTHER20031028  1                               10405814302
WS  HR21     263   0.979  0.5841
WR581433       0   OTHER20031028  1                               10405814303
WS  HR10    1495  0.4012   0.856
** APPLICATION 5813
WR581301     685    581320031001  1                               10405813001
WR581303       0    581320031001  1                               10405813003
SO                              BACKUP
WR581302       0    581320031001  1                               10405813002
SO                              BACKUP
WRD10130       0     REC19830222  1                               10404334301   4334
WSWHTOAK     6.7   0.979  0.5841      0
WRD10160       0     REC19830222  1                               10404334302   4334
WSBASSLK     3.4   0.979  0.5841      0
WRD10140       0     REC19830222  1                               10404334303   4334
WSDOGWOD       6   0.979  0.5841      0
WRD10180       0     REC19830222  1                               10404334304   4334
WSLKAUTM     130   0.979  0.5841      0
WRD10170       0     REC19830222  1                               10404334305   4334
WSCATFSH       5   0.979  0.5841      0
WRD10150       0     REC19830222  1                               10404334306   4334
WSLKPINE    10.5   0.979  0.5841      0
WRD10190       0     REC19830222  1                               10404334307   4334
WSLKWALL       5   0.979  0.5841      0
WRF10080    2343     MUN19830418  1                          1    10404349001   4349
WSF10080    8.29   0.979  0.5841      0
SO       3293.45    2343
WRF10080    1281     IND19830418  1                          1    10404349002   4349
WSF10080    8.29   0.979  0.5841      0
SO       3293.45    1281
```

```
WRB10250       0     REC19841127   1                                        10404522301
WSB10250     380    0.979  0.5841       0
WRF10180   202.5     IRR19841218   1                                  1     10404525101
WRA10370       0     REC19750106   1                                        60404558301
WSA10370     350    0.979  0.5841       0
WRA10350       0     REC19751215   1                                        60404559301
WSA10350     230    0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340    1392     MUN19700720   1    2   0.600                           60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                        60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                        60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     IND19700720   1    2   0.700  A10020                   60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                        60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                        60404561001
WRA10290    24.0     IRR19630801   1                                        60404562002
**
**
**  Lake Monticello
**
**
```

```
WRA10240   15300     IND19700406   1                                   60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                   60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200    7000     MUN19711220   1   2   0.600  A10020               60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                   60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200    4693     IND19711220   1   2   0.700                       60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                   60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1449     MUN19711220   1   2   0.600  B10310            2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                    1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                   60404564304    4564  BOBROR
**
** ==================================================================
WRA10120     642     MUN19550822   1   2   0.600  A10020               60404565301    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120       0     IND19550822   1   2   0.700                       60404565302    4565
```

cyp_CurrentDischarges_wPit129-Base

```
WSTANKSL    2700  0.4012   0.856      0
WRA10120       0     REC19550822   1                                    60404565303    4565
WSTANKSL    2700  0.4012   0.856      0
WRA10090   21.44     IRR19591231   1                                    60404566301
WSA10090    0.23   0.979  0.5841      0
WRA10100       6     IRR19561231   1                                    60404567301
WSA10100       5   0.979  0.5841      0
WRA10050     7.5     IRR19631231   1                                    60404568301
WSA10050      35   0.979  0.5841      0
WRA10070     400     MUN19380317   1  2   0.600  A10020                 60404569301    4569
WSNEWCTY    1176  0.4012   0.856      0
WRA10070       0     REC19380317   1                                    60404569302    4569
WSNEWCTY    1176  0.4012   0.856      0
WRA10060       0     MUN19750120   1  2   0.600  A10020                 60404570301    4570
WSOLDCTY     100   0.979  0.5841      0
WRA10060       0     REC19750120   1                                    60404570302    4570
WSOLDCTY     100   0.979  0.5841      0
WRA10040       4     IRR19631231   1                                    60404571301
WSA10040      12   0.979  0.5841      0
WRA10030     4.4     IRR19631231   1                                    60404572301
WSA10030      10   0.979  0.5841      0
WRE10020    25.3     IND19850604   1                                    10404573301
WSE10020      42   0.979  0.5841      0
WRA10010      11     IRR19551231   1                                    60404573001
WRB10320       0     IRR19511231   1                                    60404574001    4574
WSOFF320     5.0   0.979  0.5841      0
SO          5.43    1.40
WRB10320     1.4     IRR19511231   1                                    60404574301    4574
WSB10320     0.5   0.979  0.5841      0
WSOFF320     5.0   0.979  0.5841      0
OR           5.0
SO          5.43    1.40
WRB10290       0     REC19730430   1                                    60404575301
WSB10290      80   0.979  0.5841      0
**
```

```
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                 60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                 60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                 60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                 60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                 60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                 60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                 60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                 60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                 60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                 60404582004    4582 ELLISON
```

```
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                               60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                    4582BU    4582  barnes
WSBARNES   24000
SO                        458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                           60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                           60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                           60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                           60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                           60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                           60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                           60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                           60404589301
WSB10050     240   0.979  0.5841       0
```

```
**
**
**  Lake O'the Pines
** ==============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                                1MUN    4590  FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                                2IND    4590  FYLOTP
WSLKOPNS  251000
** ==============================================================================
**
WRF10250       8     IRR19670430   1                           1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                           1     60404592001
WRF10240      85     IRR19620531   1                           1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                           1     60404594002
WRF10210    2000     MUN19630218   1                           1     60404595001
WRF10190   80.21     IRR19570319   1                           1     60404596001
WRC10040      25     IRR19760621   1                                 60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                                 60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                                 60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                           1     60404600001
WRD10090       0     REC19461121   1                                 60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                                 60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                                 60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                                 60404604301
WSD10060      28   0.979  0.5841       0
```

WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			

```
WR 10020        0    REC19470922   1                                    60404621301
WS 10020      160  0.979  0.5841       0
WRD10120        0    REC19860404   1                                    10405054301
WSD10120      550  0.979  0.5841       0
WRC10050        0    REC19860729   1                                    10405080301
WSC10050      300  0.979  0.5841       0
WRF10100        0    REC19861125   1                               1    10405112301
WSF10100      277  0.979  0.5841       0
WRA10280        0    IND19880121   1                                    10405167301
WSPONDH1      477  0.979  0.5841       0
WRB10300        0    IRR19890112   1                                    10405212301
WSB10300     0.09  0.979  0.5841       0
WRB10260        0    IRR19890810   1                                    10405251301
WSB10260       86  0.979  0.5841       0
IFD10110   1025.6  CONST19891214   1   1                  IF5272
**
WRD10110     6180    MUN19891214   1                                    10405272301    5272
WSLKGILM    12720
WRD10110        0    REC19891214   1                                    10405272302    5272
WSLKGILM    12720
WRF10090        0    REC19900710   1                               1    10405302301
WSF10090       80  0.979  0.5841       0
WRA10260        0    IND19950522   1                                    10405529301
WSPONDH4    173.7  0.979  0.5841       0
WRE10080        0    REC19950801   1                                    10405537301
WSE10080      296  0.979  0.5841       0
WRE10090       34    IRR19980320   1                                    10405608301    5608
WSE10090     55.6  0.979  0.5841       0
WRE10090        0    REC19980320   1                                    10405608302    5608
WSE10090     55.6  0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005        0  OTHER99999999   1                                    60409999301    9999
WS CADDO   125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005    40000    MUN99999999   1                                    60409999302    9999
```

```
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT        0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT        0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN        0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN        0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN        0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN        0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS        0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS        0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN        0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN        0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS        0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS        0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO        0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO        0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH        0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH        0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM        0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM        0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129        0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129        0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
```

```
IS    4       0  125000  125001  865000
IP          100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_CurrentDischarges_wPit129Div-FYLOTP

cyp_CurrentDischarges_wPit129Div-FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD    51   1948      1      -1      -1       0       5       0       0       3       0       0       0
** ==============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10      104000PT129
FY   1.0  241800    1000     100                          FYLOTP
**FY   1.0   48500    1000     100      10                     BOB
**FY     1   10000    1000     100      10      10405850307
**FY     1   10000    1000     100      10      10405850301
**FY     1   10000    1000     100      10      10405850306
**FY     1   10000    1000     100      10      10405850304
**FY     1   10000    1000     100      10      10405850303
**FY     1   10000    1000     100      10      10405850305
**FY     1   10000    1000     100      10      10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
UC         0.080   0.084   0.088   0.090   0.090   0.087
UC   REC   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
```

```
UC OTHER   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
UC CONST     2.0     2.0     2.0     2.0     2.0     1.0
UC           1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH      31   28.25      31      30      31      30
UC            31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                       7            NONE
CPPPDISC  TCUSBC                       7            NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                       7             513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                       7            NONE
CP585037  A10120                       7             513
CP585009  A10120                       7            NONE
CP585010  A10120                       7            NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                       7             513
**CP585007  A10000                       7            NONE
**CP585006  A10000                       7            NONE
CP585031  PPDISC                       7             513
CP585007  PPDISC                       7            NONE
CP585006  PPDISC                       7            NONE
CP585036  585034                       7             513
CP585034  585033                       7             513
CP585033  585032                       7             513
CP585035  585032                       7             513
CP585032  585005                       7             513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                       7            NONE
**CP585004  A10000                       7            NONE
**CP585003  A10000                       7            NONE
**CP585002  A10000                       7            NONE
**CP585001  A10000                       7            NONE
```

```
CP585005  PPDISC          7         NONE
CP585004  TCUSBC          7         NONE
CP585003  TCUSBC          7         NONE
CP585002  TCUSBC          7         NONE
CP585001  TCUSBC          7         NONE
CP585011  A10070          7         NONE
CP585012  A10010          7         NONE
CP585013  A10010          7         NONE
** add control points for A5814
CP581431  581432          7         QAD413
CP581432  A10260          7         QAD413
CP581433  A10240          7         QAD413
** add control points for A5813
CP581301  D10000          7         NONE
CP581302  D10000          7         NONE
CP581303  D10000          7         NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170          7         B10170
CP458237  B10170          7         B10170
**
CPA10370  A10340          7         QAD413
CPA10350  A10340          7         QAD413
CPA10340  A10300          7
**CPA10300  A10000          7         NONE
CPA10300  A10200          7         NONE
**
CPA10290  A10200          7         NONE
CPA10280  A10240          7         QAD413
CPA10260  A10240          7         QAD413
**CPA10240  A10000          7
CPA10240  A10200          7
CPA10200  A10000          7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000          7         513
**CPA10100  A10000          7         513
**CPA10090  A10000          7         513
CPA10120  TCUSBC          7         513
CPA10100  TCUSBC          7         513
```

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

cyp_CurrentDischarges_wPit129Div-FYLOTP

CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

```
CPF10130  F10080                7           NONE
CPF10120  F10080                7            513
CPF10110  F10080                7            513
CPF10100  F10080                7         QAD512
CPF10090  F10080                7         QAD413
CPF10080  F10005                7            513
CPF10030  F10020                7         QAD412
CPF10020  F10005                7            513
CPF10005  F10000                7
CPF10000     OUT                0           NONE
CP 10050   10040                7         QAD413
CP 10040   10010                7         QAD413
CP 10020   10010                7         QAD413
CP 10010     OUT                7           NONE
CPQAD412     OUT                0
CPQAD413     OUT                0
CPQAD512     OUT                0
CP   513     OUT                0
CPSABINE     OUT                2   NONE    NONE
CPSULPHR     OUT                2   NONE    NONE
CPA240DM     OUT                2   NONE    NONE
CPB270DM     OUT                2   NONE    NONE
CPB70DUM     OUT                2   NONE    NONE
CPB20MUN     OUT                2   NONE    NONE
CPAVNGER     OUT                2   NONE    NONE
CPDNGRFD     OUT                2   NONE    NONE
CPHGHSPR     OUT                2   NONE    NONE
CPJEFFSN     OUT                2   NONE    NONE
CPLVGSTN     OUT                2   NONE    NONE
CPORECTY     OUT                2   NONE    NONE
**
** ===================================================================
CPA-ZERO     OUT                2   ZERO    ZERO      -3       0
** ===================================================================
**
**
**  Constant Inflow Records
**
```

```
CIB10310     50.42    47.26    53.28    49.72    44.71    41.43
CI           40.91    39.96    36.83    38.05    41.43    50.42
** Carollo add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP
CIPPDISC       146      184      162      143      155      151
CI             146      173      142      146      202      178
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100       482      IND20181231   1   1      1.0                        104000PT129   PT129
WSPIT129      5355
WRB10040         0      IND20181231   1                                          JrFill    4590
WSLKOPNS   251000
**
**TXU app 5850, 6/24/05, kb
WR585001        50      IND20041231   1                                 10405850001    5850
WR585002         0      IND20041231   1                                 10405850002    5850
SO                                   BACKUP
WR585003         0      IND20041231   1                                 10405850003    5850
SO                                   BACKUP
WR585004         0      IND20041231   1                                 10405850004    5850
SO                                   BACKUP
WR585005         0      IND20041231   1                                 10405850005    5850
SO                                   BACKUP
WR585006         0      IND20041231   1                                 10405850006    5850
SO                                   BACKUP
WR585007         0      IND20041231   1                                 10405850007    5850
SO                                   BACKUP
WR585008         0      IND20041231   1                                 10405850008    5850
SO                                   BACKUP
WR585009         0      IND20041231   1                                 10405850009    5850
SO                                   BACKUP
WR585010         0      IND20041231   1                                 10405850010    5850
SO                                   BACKUP
WR585011         0      IND20041231   1                                 10405850011    5850
SO                                   BACKUP
WR585012         0      IND20041231   1                                 10405850012    5850
```

```
SO                                      BACKUP
WR585013        0     IND20041231   1                                           10405850013    5850
SO                                      BACKUP
WR585037        0     IND20041231   1                                           10405850307    5850
WSR58507    525.6   0.979  0.5841
WR585031        0     IND20041231   1                                           10405850301    5850
WSR58501    271.4   0.979  0.5841
WR585036        0     IND20041231   1                                           10405850306    5850
WSR58506      327   0.979  0.5841
WR585034        0     IND20041231   1                                           10405850304    5850
WSR58504    509.3   0.979  0.5841
WR585033        0     IND20041231   1                                           10405850303    5850
WSR58503    287.3   0.979  0.5841
WR585035        0     IND20041231   1                                           10405850305    5850
WSR58505    604.8  0.4012   0.856
WR585032        0     IND20041231   1                                           10405850302    5850
WSR58502    245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431        0   OTHER20031028   1                                           10405814301
WS    HR9     356   0.979  0.5841
WR581432        0   OTHER20031028   1                                           10405814302
WS   HR21     263   0.979  0.5841
WR581433        0   OTHER20031028   1                                           10405814303
WS   HR10    1495  0.4012   0.856
** APPLICATION 5813
WR581301      685    581320031001   1                                           10405813001
WR581303        0    581320031001   1                                           10405813003
SO                                      BACKUP
WR581302        0    581320031001   1                                           10405813002
SO                                      BACKUP
WRD10130        0     REC19830222   1                                           10404334301    4334
WSWHTOAK      6.7   0.979  0.5841       0
WRD10160        0     REC19830222   1                                           10404334302    4334
WSBASSLK      3.4   0.979  0.5841       0
WRD10140        0     REC19830222   1                                           10404334303    4334
WSDOGWOD        6   0.979  0.5841       0
WRD10180        0     REC19830222   1                                           10404334304    4334
```

```
WSLKAUTM      130   0.979  0.5841      0
WRD10170        0     REC19830222  1                                  10404334305    4334
WSCATFSH        5   0.979  0.5841      0
WRD10150        0     REC19830222  1                                  10404334306    4334
WSLKPINE     10.5   0.979  0.5841      0
WRD10190        0     REC19830222  1                                  10404334307    4334
WSLKWALL        5   0.979  0.5841      0
WRF10080     2343     MUN19830418  1                            1     10404349001    4349
WSF10080     8.29   0.979  0.5841      0
SO        3293.45    2343
WRF10080     1281     IND19830418  1                            1     10404349002    4349
WSF10080     8.29   0.979  0.5841      0
SO        3293.45    1281
WRB10250        0     REC19841127  1                                  10404522301
WSB10250      380   0.979  0.5841      0
WRF10180    202.5     IRR19841218  1                            1     10404525101
WRA10370        0     REC19750106  1                                  60404558301
WSA10370      350   0.979  0.5841      0
WRA10350        0     REC19751215  1                                  60404559301
WSA10350      230   0.979  0.5841      0
**
**
**  Lake Cypress Springs
**
**
WRA10340     1392     MUN19700720  1   2   0.600                      60404560301    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340     1000     MUN19660131  1                                  60404560302    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340      210     IRR19700720  1                                  60404560303    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340        0     IND19700720  1   2   0.700  A10020              60404560304    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340        0     REC19660131  1                                  60404560305    4560 CYPRESS
```

```
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                          60404561001
WRA10290    24.0     IRR19630801   1                                          60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                                          60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                          60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200    7000     MUN19711220   1   2   0.600  A10020                      60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                          60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200    4693     IND19711220   1   2   0.700                              60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                          60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1449     MUN19711220   1   2   0.600  B10310                   2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                           1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
```

```
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600      IND19780313   1                                   60404564304    4564  BOBROR
**
** ===================================================================
WRA10120     642      MUN19550822   1    2   0.600  A10020              60404565301    4565
WSTANKSL    2700  0.4012    0.856        0
WRA10120       0      IND19550822   1    2   0.700                      60404565302    4565
WSTANKSL    2700  0.4012    0.856        0
WRA10120       0      REC19550822   1                                   60404565303    4565
WSTANKSL    2700  0.4012    0.856        0
WRA10090   21.44      IRR19591231   1                                   60404566301
WSA10090    0.23   0.979   0.5841        0
WRA10100       6      IRR19561231   1                                   60404567301
WSA10100       5   0.979   0.5841        0
WRA10050     7.5      IRR19631231   1                                   60404568301
WSA10050      35   0.979   0.5841        0
WRA10070     400      MUN19380317   1    2   0.600  A10020              60404569301    4569
WSNEWCTY    1176  0.4012    0.856        0
WRA10070       0      REC19380317   1                                   60404569302    4569
WSNEWCTY    1176  0.4012    0.856        0
WRA10060       0      MUN19750120   1    2   0.600  A10020              60404570301    4570
WSOLDCTY     100   0.979   0.5841        0
WRA10060       0      REC19750120   1                                   60404570302    4570
WSOLDCTY     100   0.979   0.5841        0
WRA10040       4      IRR19631231   1                                   60404571301
WSA10040      12   0.979   0.5841        0
WRA10030     4.4      IRR19631231   1                                   60404572301
WSA10030      10   0.979   0.5841        0
WRE10020    25.3      IND19850604   1                                   10404573301
WSE10020      42   0.979   0.5841        0
WRA10010      11      IRR19551231   1                                   60404573001
WRB10320       0      IRR19511231   1                                   60404574001    4574
WSOFF320     5.0   0.979   0.5841        0
SO          5.43    1.40
WRB10320     1.4      IRR19511231   1                                   60404574301    4574
WSB10320     0.5   0.979   0.5841        0
WSOFF320     5.0   0.979   0.5841        0
OR           5.0
```

```
SO          5.43    1.40
WRB10290       0     REC19730430   1                                   60404575301
WSB10290      80   0.979  0.5841       0
**
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                   60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                   60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                   60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                   60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                   60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                   60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                   60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                   60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                   60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
```

```
WRB10170                19421130   1                                            60404582004    4582 ELLISON
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232         0   OTHER19720508                                              60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856        0
WR458232         0   OTHER19720508                                                   4582BU    4582  barnes
WSBARNES   24000
SO                       458237   BACKUP
**
**
WRB10120      38.3      IRR19620731   1                                         60404583301
WSB10120      4.79   0.979  0.5841          0
WRB10110      14.2      IRR19480930   1                                         60404584301
WSB10110        60   0.979  0.5841          0
WRB10100      0.56      IRR19550331   1                                         60404585301
WSB10100        50   0.979  0.5841          0
WRB10090         1      IRR19641231   1                                         60404586301
WSB10090        12   0.979  0.5841          0
WRB10080       150      IRR19561231   1                                         60404587301
WSSIMPSN      2500  0.4012   0.856          0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070      6668      IND19600504   1                                         60404588301    4588
WSJOHNSN     10100
**
WRB10070         0      REC19600504   1                                         60404588302    4588
WSJOHNSN     10100
**
**
WRB10050         0      REC19751208   1                                         60404589301
WSB10050       240   0.979  0.5841          0
**
**
```

```
**  Lake O'the Pines
** ================================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                     1MUN    4590  FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                     2IND    4590  FYLOTP
WSLKOPNS  251000
** ================================================================================
**
WRF10250       8     IRR19670430   1                          1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                          1     60404592001
WRF10240      85     IRR19620531   1                          1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                          1     60404594002
WRF10210    2000     MUN19630218   1                          1     60404595001
WRF10190   80.21     IRR19570319   1                          1     60404596001
WRC10040      25     IRR19760621   1                                60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                                60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                                60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                          1     60404600001
WRD10090       0     REC19461121   1                                60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                                60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                                60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                                60404604301
WSD10060      28   0.979  0.5841       0
WRD10030       0     REC19741209   1                                60404605301    4605
WSD10030      36   0.979  0.5841       0
WRD10040       0     REC19741209   1                                60404605302    4605
WSD10040     114   0.979  0.5841       0
WRD10020       0     REC19740812   1                                60404606301
```

cyp_CurrentDischarges_wPit129Div-FYLOTP

WSD10020	294	0.979	0.5841		0			
WRD10010	0	REC19740812		1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2	IRR19520630		1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15	IND19680318		1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225	IND19821206		1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122	IRR19551010		1			60404610001	
WRE10010	955	IND19430701		1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58	IRR19550323		1		1	60404612001	
WRF10140	165.21	MIN19690224		1		1	60404613001	
WRF10130	7558	MUN19470418		1		1	60404614001	4614
WRF10130	8442	MUN19561127		1		1	60404614002	4614
WRF10120	10	IRR19751215		1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0	REC19690811		1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0	REC19720207		1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42	IRR19790221		1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51	IRR19810413		1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0	REC19760524		1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0	REC19781016		1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0	REC19470922		1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0	REC19860404		1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0	REC19860729		1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0	REC19861125		1		1	10405112301	
WSF10100	277	0.979	0.5841		0			

```
WRA10280       0     IND19880121   1                                       10405167301
WSPONDH1     477   0.979  0.5841       0
WRB10300       0     IRR19890112   1                                       10405212301
WSB10300    0.09   0.979  0.5841       0
WRB10260       0     IRR19890810   1                                       10405251301
WSB10260      86   0.979  0.5841       0
IFD10110  1025.6   CONST19891214   1   1                   IF5272
**
WRD10110    6180     MUN19891214   1                                       10405272301    5272
WSLKGILM   12720
WRD10110       0     REC19891214   1                                       10405272302    5272
WSLKGILM   12720
WRF10090       0     REC19900710   1                                1      10405302301
WSF10090      80   0.979  0.5841       0
WRA10260       0     IND19950522   1                                       10405529301
WSPONDH4   173.7   0.979  0.5841       0
WRE10080       0     REC19950801   1                                       10405537301
WSE10080     296   0.979  0.5841       0
WRE10090      34     IRR19980320   1                                       10405608301    5608
WSE10090    55.6   0.979  0.5841       0
WRE10090       0     REC19980320   1                                       10405608302    5608
WSE10090    55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                       60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                       60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
```

```
SVLKCYPS      0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS      0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN      0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN      0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS      0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS      0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO      0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO      0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH      0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH      0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM      0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM      0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129      0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129      0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_CurrentDischarges_wPit129-FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ===============================================
JD    51    1948      1      -1      -1       0       5       0       0       3       0       0       0
** ===============================================
JO
RO    -1
**
**FY     1   10000    1000    100      10     104000PT129
FY   1.0  241800    1000    100                            FYLOTP
**FY   1.0   48500    1000    100      10                      BOB
**FY     1   10000    1000    100      10     10405850307
**FY     1   10000    1000    100      10     10405850301
**FY     1   10000    1000    100      10     10405850306
**FY     1   10000    1000    100      10     10405850304
**FY     1   10000    1000    100      10     10405850303
**FY     1   10000    1000    100      10     10405850305
**FY     1   10000    1000    100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
```

```
UC         0.080   0.084   0.088   0.090   0.090   0.087
UC    REC  0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
UC  OTHER  0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
UC  CONST    2.0     2.0     2.0     2.0     2.0     1.0
UC           1.0     1.0     1.0     1.0     1.0     1.0
UC  MONTH     31   28.25      31      30      31      30
UC            31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                  7           NONE
CPPPDISC  TCUSBC                  7           NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                  7            513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                  7           NONE
CP585037  A10120                  7            513
CP585009  A10120                  7           NONE
CP585010  A10120                  7           NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                  7            513
**CP585007  A10000                  7           NONE
**CP585006  A10000                  7           NONE
CP585031  PPDISC                  7            513
CP585007  PPDISC                  7           NONE
CP585006  PPDISC                  7           NONE
CP585036  585034                  7            513
CP585034  585033                  7            513
CP585033  585032                  7            513
CP585035  585032                  7            513
CP585032  585005                  7            513
```

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                  7          NONE
**CP585004  A10000                  7          NONE
**CP585003  A10000                  7          NONE
**CP585002  A10000                  7          NONE
**CP585001  A10000                  7          NONE
CP585005  PPDISC                   7          NONE
CP585004  TCUSBC                   7          NONE
CP585003  TCUSBC                   7          NONE
CP585002  TCUSBC                   7          NONE
CP585001  TCUSBC                   7          NONE
CP585011  A10070                   7          NONE
CP585012  A10010                   7          NONE
CP585013  A10010                   7          NONE
** add control points for A5814
CP581431  581432                   7        QAD413
CP581432  A10260                   7        QAD413
CP581433  A10240                   7        QAD413
** add control points for A5813
CP581301  D10000                   7          NONE
CP581302  D10000                   7          NONE
CP581303  D10000                   7          NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                   7        B10170
CP458237  B10170                   7        B10170
**
CPA10370  A10340                   7        QAD413
CPA10350  A10340                   7        QAD413
CPA10340  A10300                   7
**CPA10300  A10000                  7          NONE
CPA10300  A10200                   7          NONE
**
CPA10290  A10200                   7          NONE
CPA10280  A10240                   7        QAD413
CPA10260  A10240                   7        QAD413
```

cyp_CurrentDischarges_wPit129-FYLOTP

**CPA10240	A10000	7	
CPA10240	A10200	7	
CPA10200	A10000	7	

** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses

**CPA10120	A10000	7	513
**CPA10100	A10000	7	513
**CPA10090	A10000	7	513
CPA10120	TCUSBC	7	513
CPA10100	TCUSBC	7	513
CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513

		cyp_CurrentDischarges_wPit129-FYLOTP	
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

cyp_CurrentDischarges_wPit129-FYLOTP

CPE10050	E10040	7		QAD412
CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE

```
CPA240DM     OUT                      2    NONE    NONE
CPB270DM     OUT                      2    NONE    NONE
CPB70DUM     OUT                      2    NONE    NONE
CPB20MUN     OUT                      2    NONE    NONE
CPAVNGER     OUT                      2    NONE    NONE
CPDNGRFD     OUT                      2    NONE    NONE
CPHGHSPR     OUT                      2    NONE    NONE
CPJEFFSN     OUT                      2    NONE    NONE
CPLVGSTN     OUT                      2    NONE    NONE
CPORECTY     OUT                      2    NONE    NONE
**
** ==================================================================
CPA-ZERO     OUT                      2    ZERO    ZERO      -3       0
** ==================================================================
**
**
**  Constant Inflow Records
**
CIB10310   50.42   47.26   53.28   49.72   44.71   41.43
CI         40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP
CIPPDISC     146     184     162     143     155     151
CI           146     173     142     146     202     178
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100     482     IND20181231   1   1     1.0                104000PT129    PT129
WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231   1                            10405850001     5850
WR585002       0     IND20041231   1                            10405850002     5850
SO                                BACKUP
```

WR585003	0		IND20041231	1	10405850003	5850
SO				BACKUP		
WR585004	0		IND20041231	1	10405850004	5850
SO				BACKUP		
WR585005	0		IND20041231	1	10405850005	5850
SO				BACKUP		
WR585006	0		IND20041231	1	10405850006	5850
SO				BACKUP		
WR585007	0		IND20041231	1	10405850007	5850
SO				BACKUP		
WR585008	0		IND20041231	1	10405850008	5850
SO				BACKUP		
WR585009	0		IND20041231	1	10405850009	5850
SO				BACKUP		
WR585010	0		IND20041231	1	10405850010	5850
SO				BACKUP		
WR585011	0		IND20041231	1	10405850011	5850
SO				BACKUP		
WR585012	0		IND20041231	1	10405850012	5850
SO				BACKUP		
WR585013	0		IND20041231	1	10405850013	5850
SO				BACKUP		
WR585037	0		IND20041231	1	10405850307	5850
WSR58507	525.6	0.979	0.5841			
WR585031	0		IND20041231	1	10405850301	5850
WSR58501	271.4	0.979	0.5841			
WR585036	0		IND20041231	1	10405850306	5850
WSR58506	327	0.979	0.5841			
WR585034	0		IND20041231	1	10405850304	5850
WSR58504	509.3	0.979	0.5841			
WR585033	0		IND20041231	1	10405850303	5850
WSR58503	287.3	0.979	0.5841			
WR585035	0		IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012	0.856			
WR585032	0		IND20041231	1	10405850302	5850

```
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028   1                                10405814301
WS   HR9     356   0.979  0.5841
WR581432       0   OTHER20031028   1                                10405814302
WS  HR21     263   0.979  0.5841
WR581433       0   OTHER20031028   1                                10405814303
WS  HR10    1495  0.4012   0.856
** APPLICATION 5813
WR581301     685    581320031001   1                                10405813001
WR581303       0    581320031001   1                                10405813003
SO                                BACKUP
WR581302       0    581320031001   1                                10405813002
SO                                BACKUP
WRD10130       0     REC19830222   1                                10404334301    4334
WSWHTOAK     6.7   0.979  0.5841       0
WRD10160       0     REC19830222   1                                10404334302    4334
WSBASSLK     3.4   0.979  0.5841       0
WRD10140       0     REC19830222   1                                10404334303    4334
WSDOGWOD       6   0.979  0.5841       0
WRD10180       0     REC19830222   1                                10404334304    4334
WSLKAUTM     130   0.979  0.5841       0
WRD10170       0     REC19830222   1                                10404334305    4334
WSCATFSH       5   0.979  0.5841       0
WRD10150       0     REC19830222   1                                10404334306    4334
WSLKPINE    10.5   0.979  0.5841       0
WRD10190       0     REC19830222   1                                10404334307    4334
WSLKWALL       5   0.979  0.5841       0
WRF10080    2343     MUN19830418   1                          1     10404349001    4349
WSF10080    8.29   0.979  0.5841       0
SO       3293.45    2343
WRF10080    1281     IND19830418   1                          1     10404349002    4349
WSF10080    8.29   0.979  0.5841       0
SO       3293.45    1281
```

```
WRB10250       0     REC19841127   1                                 10404522301
WSB10250     380   0.979  0.5841       0
WRF10180   202.5     IRR19841218   1                           1     10404525101
WRA10370       0     REC19750106   1                                 60404558301
WSA10370     350   0.979  0.5841       0
WRA10350       0     REC19751215   1                                 60404559301
WSA10350     230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340    1392     MUN19700720   1   2   0.600                     60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                 60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                 60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     IND19700720   1   2   0.700  A10020             60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                 60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                 60404561001
WRA10290    24.0     IRR19630801   1                                 60404562002
**
**
**  Lake Monticello
**
**
```

```
WRA10240   15300     IND19700406   1                                      60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                      60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200    7000     MUN19711220   1   2   0.600   A10020                 60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                      60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200    4693     IND19711220   1   2   0.700                          60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                      60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1449     MUN19711220   1   2   0.600   B10310              2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                       1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                      60404564304    4564   BOBROR
**
** ==================================================================
WRA10120     642     MUN19550822   1   2   0.600   A10020                 60404565301    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120       0     IND19550822   1   2   0.700                          60404565302    4565
```

```
WSTANKSL     2700  0.4012   0.856        0
WRA10120        0     REC19550822   1                                         60404565303    4565
WSTANKSL     2700  0.4012   0.856        0
WRA10090    21.44     IRR19591231   1                                         60404566301
WSA10090     0.23   0.979  0.5841        0
WRA10100        6     IRR19561231   1                                         60404567301
WSA10100        5   0.979  0.5841        0
WRA10050      7.5     IRR19631231   1                                         60404568301
WSA10050       35   0.979  0.5841        0
WRA10070      400     MUN19380317   1    2    0.600  A10020                   60404569301    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10070        0     REC19380317   1                                         60404569302    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10060        0     MUN19750120   1    2    0.600  A10020                   60404570301    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10060        0     REC19750120   1                                         60404570302    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10040        4     IRR19631231   1                                         60404571301
WSA10040       12   0.979  0.5841        0
WRA10030      4.4     IRR19631231   1                                         60404572301
WSA10030       10   0.979  0.5841        0
WRE10020     25.3     IND19850604   1                                         10404573301
WSE10020       42   0.979  0.5841        0
WRA10010       11     IRR19551231   1                                         60404573001
WRB10320        0     IRR19511231   1                                         60404574001    4574
WSOFF320      5.0   0.979  0.5841        0
SO           5.43    1.40
WRB10320      1.4     IRR19511231   1                                         60404574301    4574
WSB10320      0.5   0.979  0.5841        0
WSOFF320      5.0   0.979  0.5841        0
OR            5.0
SO           5.43    1.40
WRB10290        0     REC19730430   1                                         60404575301
WSB10290       80   0.979  0.5841        0
**
```

```
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                              60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                              60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                              60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                              60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                              60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                              60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                              60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                              60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                              60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                              60404582004    4582 ELLISON
```

```
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                   60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                        4582BU    4582  barnes
WSBARNES   24000
SO                        458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                               60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                               60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                               60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                               60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                               60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                               60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                               60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                               60404589301
WSB10050     240   0.979  0.5841       0
```

```
**
**
**  Lake O'the Pines
** ==========================================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                         1MUN    4590   FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                         2IND    4590   FYLOTP
WSLKOPNS  251000
** ==========================================================================================
**
WRF10250       8     IRR19670430   1                            1      60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                            1      60404592001
WRF10240      85     IRR19620531   1                            1      60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                            1      60404594002
WRF10210    2000     MUN19630218   1                            1      60404595001
WRF10190   80.21     IRR19570319   1                            1      60404596001
WRC10040      25     IRR19760621   1                                   60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                                   60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                                   60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                            1      60404600001
WRD10090       0     REC19461121   1                                   60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                                   60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                                   60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                                   60404604301
WSD10060      28   0.979  0.5841       0
```

WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			

```
WR 10020       0     REC19470922   1                                     60404621301
WS 10020     160   0.979  0.5841       0
WRD10120       0     REC19860404   1                                     10405054301
WSD10120     550   0.979  0.5841       0
WRC10050       0     REC19860729   1                                     10405080301
WSC10050     300   0.979  0.5841       0
WRF10100       0     REC19861125   1                              1      10405112301
WSF10100     277   0.979  0.5841       0
WRA10280       0     IND19880121   1                                     10405167301
WSPONDH1     477   0.979  0.5841       0
WRB10300       0     IRR19890112   1                                     10405212301
WSB10300    0.09   0.979  0.5841       0
WRB10260       0     IRR19890810   1                                     10405251301
WSB10260      86   0.979  0.5841       0
IFD10110  1025.6   CONST19891214   1   1                     IF5272
**
WRD10110    6180     MUN19891214   1                                     10405272301    5272
WSLKGILM   12720
WRD10110       0     REC19891214   1                                     10405272302    5272
WSLKGILM   12720
WRF10090       0     REC19900710   1                              1      10405302301
WSF10090      80   0.979  0.5841       0
WRA10260       0     IND19950522   1                                     10405529301
WSPONDH4   173.7   0.979  0.5841       0
WRE10080       0     REC19950801   1                                     10405537301
WSE10080     296   0.979  0.5841       0
WRE10090      34     IRR19980320   1                                     10405608301    5608
WSE10090    55.6   0.979  0.5841       0
WRE10090       0     REC19980320   1                                     10405608302    5608
WSE10090    55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                     60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                     60409999302    9999
```

```
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129       0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129       0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
```

```
IS    4      0  125000  125001  865000
IP         100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_PermittedDischarges_woPit129-Base

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ==============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10      104000PT129
**FY   1.0  241800    1000     100                              FYLOTP
**FY   1.0   48500    1000     100      10                         BOB
**FY     1   10000    1000     100      10      10405850307
**FY     1   10000    1000     100      10      10405850301
**FY     1   10000    1000     100      10      10405850306
**FY     1   10000    1000     100      10      10405850304
**FY     1   10000    1000     100      10      10405850303
**FY     1   10000    1000     100      10      10405850305
**FY     1   10000    1000     100      10      10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
```

```
UC          0.080   0.084   0.088   0.090   0.090   0.087
UC    REC   0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                        7             NONE
CPPPDISC  TCUSBC                        7             NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                        7              513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                        7             NONE
CP585037  A10120                        7              513
CP585009  A10120                        7             NONE
CP585010  A10120                        7             NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                        7              513
**CP585007  A10000                        7             NONE
**CP585006  A10000                        7             NONE
CP585031  PPDISC                        7              513
CP585007  PPDISC                        7             NONE
CP585006  PPDISC                        7             NONE
CP585036  585034                        7              513
CP585034  585033                        7              513
CP585033  585032                        7              513
CP585035  585032                        7              513
CP585032  585005                        7              513
```

cyp_PermittedDischarges_woPit129-Base

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                         7         NONE
**CP585004  A10000                         7         NONE
**CP585003  A10000                         7         NONE
**CP585002  A10000                         7         NONE
**CP585001  A10000                         7         NONE
CP585005  PPDISC                         7         NONE
CP585004  TCUSBC                         7         NONE
CP585003  TCUSBC                         7         NONE
CP585002  TCUSBC                         7         NONE
CP585001  TCUSBC                         7         NONE
CP585011  A10070                         7         NONE
CP585012  A10010                         7         NONE
CP585013  A10010                         7         NONE
** add control points for A5814
CP581431  581432                         7       QAD413
CP581432  A10260                         7       QAD413
CP581433  A10240                         7       QAD413
** add control points for A5813
CP581301  D10000                         7         NONE
CP581302  D10000                         7         NONE
CP581303  D10000                         7         NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                         7       B10170
CP458237  B10170                         7       B10170
**
CPA10370  A10340                         7       QAD413
CPA10350  A10340                         7       QAD413
CPA10340  A10300                         7
**CPA10300  A10000                         7         NONE
CPA10300  A10200                         7         NONE
**
CPA10290  A10200                         7         NONE
CPA10280  A10240                         7       QAD413
CPA10260  A10240                         7       QAD413
```

```
**CPA10240  A10000                      7
CPA10240  A10200                      7
CPA10200  A10000                      7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                      7             513
**CPA10100  A10000                      7             513
**CPA10090  A10000                      7             513
CPA10120  TCUSBC                      7             513
CPA10100  TCUSBC                      7             513
CPA10090  TCUSBC                      7             513
CPA10070  A10010                      7             513
CPA10060  A10010                      7             513
CPA10050  A10010                      7             513
CPA10040  A10010                      7             513
CPA10030  A10010                      7          QAD413
CPA10020  A10010                      7            NONE
CPA10010  A10000                      7             513
CPA10000  B10150                      0            NONE
CPB10320  B10310                      7          QAD413
CPB10310  B10150                      7            NONE
CPB10300  B10150                      7          QAD413
CPB10290  B10150                      7          QAD413
CPB10270  B10150                      7
CPB10260  B10150                      7          QAD413
CPB10250  B10150                      7          QAD413
CPB10230  B10170                      7             513
CPB10220  B10230                      7             513
CPB10210  B10150                      7             513
CPB10200  B10150                      7             513
CPB10180  B10170                      7             513
CPB10170  B10150                      7
CPB10150  B10040                      7            NONE
CPB10120  B10040                      7             513
CPB10110  B10040                      7             513
CPB10100  B10040                      7             513
```

cyp_PermittedDischarges_woPit129-Base

CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

cyp_PermittedDischarges_woPit129-Base

CPE10050	E10040	7		QAD412
CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE

```
                                    cyp_PermittedDischarges_woPit129-Base
CPA240DM     OUT                    2    NONE     NONE
CPB270DM     OUT                    2    NONE     NONE
CPB70DUM     OUT                    2    NONE     NONE
CPB20MUN     OUT                    2    NONE     NONE
CPAVNGER     OUT                    2    NONE     NONE
CPDNGRFD     OUT                    2    NONE     NONE
CPHGHSPR     OUT                    2    NONE     NONE
CPJEFFSN     OUT                    2    NONE     NONE
CPLVGSTN     OUT                    2    NONE     NONE
CPORECTY     OUT                    2    NONE     NONE
**
** ====================================================================
CPA-ZERO     OUT                    2    ZERO     ZERO      -3       0
** ====================================================================
**
**
**  Constant Inflow Records
**
CIB10310   50.42   47.26   53.28   49.72   44.71   41.43
CI         40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC     271     255     278     314     318     306
CI           427     427     408     329     286     302
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
**WR585100     482     IND20181231   1                            104000PT129   PT129
**WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50    IND20041231   1                           10405850001    5850
WR585002       0    IND20041231   1                           10405850002    5850
SO                              BACKUP
```

WR585003	0	IND20041231	1	10405850003	5850
SO			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
SO			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
SO			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
SO			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
SO			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
SO			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
SO			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
SO			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
SO			BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
SO			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
SO			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979 0.5841			
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979 0.5841			
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979 0.5841			
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012 0.856			
WR585032	0	IND20041231	1	10405850302	5850

```
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028   1                                             10405814301
WS   HR9     356   0.979  0.5841
WR581432       0   OTHER20031028   1                                             10405814302
WS  HR21     263   0.979  0.5841
WR581433       0   OTHER20031028   1                                             10405814303
WS  HR10    1495  0.4012   0.856
** APPLICATION 5813
WR581301     685     581320031001   1                                            10405813001
WR581303       0     581320031001   1                                            10405813003
SO                                BACKUP
WR581302       0     581320031001   1                                            10405813002
SO                                BACKUP
WRD10130       0      REC19830222   1                                            10404334301    4334
WSWHTOAK     6.7   0.979  0.5841        0
WRD10160       0      REC19830222   1                                            10404334302    4334
WSBASSLK     3.4   0.979  0.5841        0
WRD10140       0      REC19830222   1                                            10404334303    4334
WSDOGWOD       6   0.979  0.5841        0
WRD10180       0      REC19830222   1                                            10404334304    4334
WSLKAUTM     130   0.979  0.5841        0
WRD10170       0      REC19830222   1                                            10404334305    4334
WSCATFSH       5   0.979  0.5841        0
WRD10150       0      REC19830222   1                                            10404334306    4334
WSLKPINE    10.5   0.979  0.5841        0
WRD10190       0      REC19830222   1                                            10404334307    4334
WSLKWALL       5   0.979  0.5841        0
WRF10080    2343      MUN19830418   1                                 1          10404349001    4349
WSF10080    8.29   0.979  0.5841        0
SO       3293.45    2343
WRF10080    1281      IND19830418   1                                 1          10404349002    4349
WSF10080    8.29   0.979  0.5841        0
SO       3293.45    1281
```

```
WRB10250       0     REC19841127   1                                        10404522301
WSB10250     380   0.979  0.5841       0
WRF10180   202.5     IRR19841218   1                                  1     10404525101
WRA10370       0     REC19750106   1                                        60404558301
WSA10370     350   0.979  0.5841       0
WRA10350       0     REC19751215   1                                        60404559301
WSA10350     230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500     MUN19700720   1   2   0.600                            60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                        60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                        60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720   1   2   0.700  A10020                    60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                        60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                        60404561001
WRA10290    24.0     IRR19630801   1                                        60404562002
**
**
**  Lake Monticello
**
**
```

```
WRA10240   15300     IND19700406   1                                60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1   2   0.600  A10020            60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1   2   0.700                    60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1   2   0.600  B10310         2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                 1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                60404564304    4564   BOBROR
**
** ===================================================================
WRA10120    1680     MUN19550822   1   2   0.600  A10020            60404565301    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120     550     IND19550822   1   2   0.700                    60404565302    4565
```

```
WSTANKSL     2700  0.4012   0.856        0
WRA10120        0      REC19550822   1                                         60404565303    4565
WSTANKSL     2700  0.4012   0.856        0
WRA10090    21.44      IRR19591231   1                                         60404566301
WSA10090     0.23   0.979  0.5841        0
WRA10100        6      IRR19561231   1                                         60404567301
WSA10100        5   0.979  0.5841        0
WRA10050      7.5      IRR19631231   1                                         60404568301
WSA10050       35   0.979  0.5841        0
WRA10070      400      MUN19380317   1   2   0.600  A10020                     60404569301    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10070        0      REC19380317   1                                         60404569302    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10060      144      MUN19750120   1   2   0.600  A10020                     60404570301    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10060        0      REC19750120   1                                         60404570302    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10040        4      IRR19631231   1                                         60404571301
WSA10040       12   0.979  0.5841        0
WRA10030      4.4      IRR19631231   1                                         60404572301
WSA10030       10   0.979  0.5841        0
WRE10020     25.3      IND19850604   1                                         10404573301
WSE10020       42   0.979  0.5841        0
WRA10010       11      IRR19551231   1                                         60404573001
WRB10320        0      IRR19511231   1                                         60404574001    4574
WSOFF320      5.0   0.979  0.5841        0
SO           5.43    1.40
WRB10320      1.4      IRR19511231   1                                         60404574301    4574
WSB10320      0.5   0.979  0.5841        0
WSOFF320      5.0   0.979  0.5841        0
OR            5.0
SO           5.43    1.40
WRB10290        0      REC19730430   1                                         60404575301
WSB10290       80   0.979  0.5841        0
**
```

```
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                       60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                       60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                       60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                       60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                       60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                       60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                       60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                       60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                       60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                       60404582004    4582 ELLISON
```

```
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                      60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                          4582BU    4582  barnes
WSBARNES   24000
SO                        458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                                  60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                                  60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                                  60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                                  60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                                  60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                                  60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                  60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                  60404589301
WSB10050     240   0.979  0.5841       0
```

```
**
**
**  Lake O'the Pines
** ===========================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                          1MUN    4590  FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                          2IND    4590  FYLOTP
WSLKOPNS  251000
** ===========================================================================
**
WRF10250       8     IRR19670430   1                           1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                           1     60404592001
WRF10240      85     IRR19620531   1                           1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                           1     60404594002
WRF10210    2000     MUN19630218   1                           1     60404595001
WRF10190   80.21     IRR19570319   1                           1     60404596001
WRC10040      25     IRR19760621   1                                 60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                                 60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                                 60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                           1     60404600001
WRD10090       0     REC19461121   1                                 60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                                 60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                                 60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                                 60404604301
WSD10060      28   0.979  0.5841       0
```

WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			

```
WR 10020       0     REC19470922   1                                             60404621301
WS 10020     160   0.979  0.5841       0
WRD10120       0     REC19860404   1                                             10405054301
WSD10120     550   0.979  0.5841       0
WRC10050       0     REC19860729   1                                             10405080301
WSC10050     300   0.979  0.5841       0
WRF10100       0     REC19861125   1                                       1     10405112301
WSF10100     277   0.979  0.5841       0
WRA10280       0     IND19880121   1                                             10405167301
WSPONDH1     477   0.979  0.5841       0
WRB10300       0     IRR19890112   1                                             10405212301
WSB10300    0.09   0.979  0.5841       0
WRB10260       0     IRR19890810   1                                             10405251301
WSB10260      86   0.979  0.5841       0
IFD10110  1025.6   CONST19891214   1   1                              IF5272
**
WRD10110    6180     MUN19891214   1                                             10405272301    5272
WSLKGILM   12720
WRD10110       0     REC19891214   1                                             10405272302    5272
WSLKGILM   12720
WRF10090       0     REC19900710   1                                       1     10405302301
WSF10090      80   0.979  0.5841       0
WRA10260       0     IND19950522   1                                             10405529301
WSPONDH4   173.7   0.979  0.5841       0
WRE10080       0     REC19950801   1                                             10405537301
WSE10080     296   0.979  0.5841       0
WRE10090      34     IRR19980320   1                                             10405608301    5608
WSE10090    55.6   0.979  0.5841       0
WRE10090       0     REC19980320   1                                             10405608302    5608
WSE10090    55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                             60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                             60409999302    9999
```

```
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
**SVPIT129      0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
**SAPIT129      0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
```

```
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_PermittedDischarges_woPit129-FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ==============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10     104000PT129
FY   1.0  241800    1000     100                            FYLOTP
**FY   1.0   48500    1000     100      10                       BOB
**FY     1   10000    1000     100      10     10405850307
**FY     1   10000    1000     100      10     10405850301
**FY     1   10000    1000     100      10     10405850306
**FY     1   10000    1000     100      10     10405850304
**FY     1   10000    1000     100      10     10405850303
**FY     1   10000    1000     100      10     10405850305
**FY     1   10000    1000     100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
UC         0.080   0.084   0.088   0.090   0.090   0.087
UC   REC   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
```

```
UC OTHER   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
UC CONST     2.0     2.0     2.0     2.0     2.0     1.0
UC           1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH      31   28.25      31      30      31      30
UC            31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                        7              NONE
CPPPDISC  TCUSBC                        7              NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                        7               513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                        7              NONE
CP585037  A10120                        7               513
CP585009  A10120                        7              NONE
CP585010  A10120                        7              NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                        7               513
**CP585007  A10000                        7              NONE
**CP585006  A10000                        7              NONE
CP585031  PPDISC                        7               513
CP585007  PPDISC                        7              NONE
CP585006  PPDISC                        7              NONE
CP585036  585034                        7               513
CP585034  585033                        7               513
CP585033  585032                        7               513
CP585035  585032                        7               513
CP585032  585005                        7               513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                        7              NONE
**CP585004  A10000                        7              NONE
**CP585003  A10000                        7              NONE
**CP585002  A10000                        7              NONE
**CP585001  A10000                        7              NONE
```

```
CP585005  PPDISC          7       NONE
CP585004  TCUSBC          7       NONE
CP585003  TCUSBC          7       NONE
CP585002  TCUSBC          7       NONE
CP585001  TCUSBC          7       NONE
CP585011  A10070          7       NONE
CP585012  A10010          7       NONE
CP585013  A10010          7       NONE
** add control points for A5814
CP581431  581432          7       QAD413
CP581432  A10260          7       QAD413
CP581433  A10240          7       QAD413
** add control points for A5813
CP581301  D10000          7       NONE
CP581302  D10000          7       NONE
CP581303  D10000          7       NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170          7       B10170
CP458237  B10170          7       B10170
**
CPA10370  A10340          7       QAD413
CPA10350  A10340          7       QAD413
CPA10340  A10300          7
**CPA10300  A10000          7       NONE
CPA10300  A10200          7       NONE
**
CPA10290  A10200          7       NONE
CPA10280  A10240          7       QAD413
CPA10260  A10240          7       QAD413
**CPA10240  A10000          7
CPA10240  A10200          7
CPA10200  A10000          7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000          7       513
**CPA10100  A10000          7       513
**CPA10090  A10000          7       513
CPA10120  TCUSBC          7       513
CPA10100  TCUSBC          7       513
```

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

cyp_PermittedDischarges_woPit129-FYLOTP

CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

```
CPF10130  F10080                        7             NONE
CPF10120  F10080                        7              513
CPF10110  F10080                        7              513
CPF10100  F10080                        7           QAD512
CPF10090  F10080                        7           QAD413
CPF10080  F10005                        7              513
CPF10030  F10020                        7           QAD412
CPF10020  F10005                        7              513
CPF10005  F10000                        7
CPF10000     OUT                        0             NONE
CP 10050   10040                        7           QAD413
CP 10040   10010                        7           QAD413
CP 10020   10010                        7           QAD413
CP 10010     OUT                        7             NONE
CPQAD412     OUT                        0
CPQAD413     OUT                        0
CPQAD512     OUT                        0
CP   513     OUT                        0
CPSABINE     OUT                        2    NONE     NONE
CPSULPHR     OUT                        2    NONE     NONE
CPA240DM     OUT                        2    NONE     NONE
CPB270DM     OUT                        2    NONE     NONE
CPB70DUM     OUT                        2    NONE     NONE
CPB20MUN     OUT                        2    NONE     NONE
CPAVNGER     OUT                        2    NONE     NONE
CPDNGRFD     OUT                        2    NONE     NONE
CPHGHSPR     OUT                        2    NONE     NONE
CPJEFFSN     OUT                        2    NONE     NONE
CPLVGSTN     OUT                        2    NONE     NONE
CPORECTY     OUT                        2    NONE     NONE
**
** ===============================================================
CPA-ZERO     OUT                        2    ZERO     ZERO      -3       0
** ===============================================================
**
**
**  Constant Inflow Records
**
```

```
CIB10310   50.42   47.26   53.28   49.72   44.71   41.43
CI         40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC     271     255     278     314     318     306
CI           427     427     408     329     286     302
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
**WR585100     482     IND20181231   1                                  104000PT129   PT129
**WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50    IND20041231   1                                 10405850001    5850
WR585002       0    IND20041231   1                                 10405850002    5850
SO                                BACKUP
WR585003       0    IND20041231   1                                 10405850003    5850
SO                                BACKUP
WR585004       0    IND20041231   1                                 10405850004    5850
SO                                BACKUP
WR585005       0    IND20041231   1                                 10405850005    5850
SO                                BACKUP
WR585006       0    IND20041231   1                                 10405850006    5850
SO                                BACKUP
WR585007       0    IND20041231   1                                 10405850007    5850
SO                                BACKUP
WR585008       0    IND20041231   1                                 10405850008    5850
SO                                BACKUP
WR585009       0    IND20041231   1                                 10405850009    5850
SO                                BACKUP
WR585010       0    IND20041231   1                                 10405850010    5850
SO                                BACKUP
WR585011       0    IND20041231   1                                 10405850011    5850
SO                                BACKUP
WR585012       0    IND20041231   1                                 10405850012    5850
SO                                BACKUP
WR585013       0    IND20041231   1                                 10405850013    5850
```

```
SO                                      BACKUP
WR585037       0     IND20041231   1                                      10405850307    5850
WSR58507   525.6   0.979  0.5841
WR585031       0     IND20041231   1                                      10405850301    5850
WSR58501   271.4   0.979  0.5841
WR585036       0     IND20041231   1                                      10405850306    5850
WSR58506     327   0.979  0.5841
WR585034       0     IND20041231   1                                      10405850304    5850
WSR58504   509.3   0.979  0.5841
WR585033       0     IND20041231   1                                      10405850303    5850
WSR58503   287.3   0.979  0.5841
WR585035       0     IND20041231   1                                      10405850305    5850
WSR58505   604.8  0.4012   0.856
WR585032       0     IND20041231   1                                      10405850302    5850
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028   1                                      10405814301
WS   HR9     356   0.979  0.5841
WR581432       0   OTHER20031028   1                                      10405814302
WS  HR21     263   0.979  0.5841
WR581433       0   OTHER20031028   1                                      10405814303
WS  HR10    1495  0.4012   0.856
** APPLICATION 5813
WR581301     685    581320031001   1                                      10405813001
WR581303       0    581320031001   1                                      10405813003
SO                                      BACKUP
WR581302       0    581320031001   1                                      10405813002
SO                                      BACKUP
WRD10130       0     REC19830222   1                                      10404334301    4334
WSWHTOAK     6.7   0.979  0.5841       0
WRD10160       0     REC19830222   1                                      10404334302    4334
WSBASSLK     3.4   0.979  0.5841       0
WRD10140       0     REC19830222   1                                      10404334303    4334
WSDOGWOD       6   0.979  0.5841       0
WRD10180       0     REC19830222   1                                      10404334304    4334
WSLKAUTM     130   0.979  0.5841       0
WRD10170       0     REC19830222   1                                      10404334305    4334
```

```
WSCATFSH       5   0.979  0.5841        0
WRD10150       0     REC19830222   1                                          10404334306    4334
WSLKPINE    10.5   0.979  0.5841        0
WRD10190       0     REC19830222   1                                          10404334307    4334
WSLKWALL       5   0.979  0.5841        0
WRF10080    2343     MUN19830418   1                                   1      10404349001    4349
WSF10080    8.29   0.979  0.5841        0
SO       3293.45    2343
WRF10080    1281     IND19830418   1                                   1      10404349002    4349
WSF10080    8.29   0.979  0.5841        0
SO       3293.45    1281
WRB10250       0     REC19841127   1                                          10404522301
WSB10250     380   0.979  0.5841        0
WRF10180   202.5     IRR19841218   1                                   1      10404525101
WRA10370       0     REC19750106   1                                          60404558301
WSA10370     350   0.979  0.5841        0
WRA10350       0     REC19751215   1                                          60404559301
WSA10350     230   0.979  0.5841        0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500     MUN19700720   1    2   0.600                             60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                          60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                          60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720   1    2   0.700  A10020                     60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                          60404560305    4560 CYPRESS
WSLKCYPS   72800
**
```

```
**
WRA10300   11.61     IRR19630831   1                                60404561001
WRA10290    24.0     IRR19630801   1                                60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                                60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1   2   0.600  A10020            60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1   2   0.700                    60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1   2   0.600  B10310         2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                 1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                60404564304    4564   BOBROR
```

```
**
** ==================================================================
WRA10120    1680      MUN19550822   1   2   0.600  A10020          60404565301   4565
WSTANKSL    2700  0.4012    0.856       0
WRA10120     550      IND19550822   1   2   0.700                  60404565302   4565
WSTANKSL    2700  0.4012    0.856       0
WRA10120       0      REC19550822   1                              60404565303   4565
WSTANKSL    2700  0.4012    0.856       0
WRA10090   21.44      IRR19591231   1                              60404566301
WSA10090    0.23   0.979   0.5841       0
WRA10100       6      IRR19561231   1                              60404567301
WSA10100       5   0.979   0.5841       0
WRA10050     7.5      IRR19631231   1                              60404568301
WSA10050      35   0.979   0.5841       0
WRA10070     400      MUN19380317   1   2   0.600  A10020          60404569301   4569
WSNEWCTY    1176  0.4012    0.856       0
WRA10070       0      REC19380317   1                              60404569302   4569
WSNEWCTY    1176  0.4012    0.856       0
WRA10060     144      MUN19750120   1   2   0.600  A10020          60404570301   4570
WSOLDCTY     100   0.979   0.5841       0
WRA10060       0      REC19750120   1                              60404570302   4570
WSOLDCTY     100   0.979   0.5841       0
WRA10040       4      IRR19631231   1                              60404571301
WSA10040      12   0.979   0.5841       0
WRA10030     4.4      IRR19631231   1                              60404572301
WSA10030      10   0.979   0.5841       0
WRE10020    25.3      IND19850604   1                              10404573301
WSE10020      42   0.979   0.5841       0
WRA10010      11      IRR19551231   1                              60404573001
WRB10320       0      IRR19511231   1                              60404574001   4574
WSOFF320     5.0   0.979   0.5841       0
SO          5.43    1.40
WRB10320     1.4      IRR19511231   1                              60404574301   4574
WSB10320     0.5   0.979   0.5841       0
WSOFF320     5.0   0.979   0.5841       0
OR           5.0
SO          5.43    1.40
WRB10290       0      REC19730430   1                              60404575301
```

```
WSB10290      80   0.979  0.5841        0
**
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                   60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                   60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                   60404577301
WSB10230      96   0.979  0.5841        0
WRB10220       6     IRR19521231   1                                   60404578301
WSB10220       1   0.979  0.5841        0
WRB10210      75     IRR19531231   1                                   60404579301
WSB10210      64   0.979  0.5841        0
WRB10200       2     IRR19581231   1                                   60404580301
WSB10200     0.5   0.979  0.5841        0
WRB10180       0     REC19690922   1                                   60404581301
WSB10180     510   0.979  0.5841        0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                   60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                   60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                   60404582004    4582 ELLISON
WSELLISN   24700
```

```
SO                   26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232        0   OTHER19720508                                         60404582303    4582   barnes
WSBARNES    24000  0.4012   0.856        0
WR458232        0   OTHER19720508                                              4582BU    4582   barnes
WSBARNES    24000
SO                          458237   BACKUP
**
**
WRB10120     38.3     IRR19620731   1                                     60404583301
WSB10120     4.79   0.979  0.5841        0
WRB10110     14.2     IRR19480930   1                                     60404584301
WSB10110       60   0.979  0.5841        0
WRB10100     0.56     IRR19550331   1                                     60404585301
WSB10100       50   0.979  0.5841        0
WRB10090        1     IRR19641231   1                                     60404586301
WSB10090       12   0.979  0.5841        0
WRB10080      150     IRR19561231   1                                     60404587301
WSSIMPSN     2500  0.4012   0.856        0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070     6668     IND19600504   1                                     60404588301    4588
WSJOHNSN    10100
**
WRB10070        0     REC19600504   1                                     60404588302    4588
WSJOHNSN    10100
**
**
WRB10050        0     REC19751208   1                                     60404589301
WSB10050      240   0.979  0.5841        0
**
**
**  Lake O'the Pines
** ===============================================================================
```

```
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070      MUN19570916   1                                     1MUN    4590  FYLOTP
WSLKOPNS  251000       -1
WRB10040  151800      IND19570916   1                                     2IND    4590  FYLOTP
WSLKOPNS  251000
** ================================================================================
**
WRF10250       8      IRR19670430   1                         1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88      IRR19690930   1                         1     60404592001
WRF10240      85      IRR19620531   1                         1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080      IRR19550103   1                         1     60404594002
WRF10210    2000      MUN19630218   1                         1     60404595001
WRF10190   80.21      IRR19570319   1                         1     60404596001
WRC10040      25      IRR19760621   1                               60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10      IND19700126   1                               60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47      IRR19530731   1                               60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42       47
WRF10170    62.5      IRR19660630   1                         1     60404600001
WRD10090       0      REC19461121   1                               60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0      REC19600211   1                               60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0      REC19730312   1                               60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03      IRR19670630   1                               60404604301
WSD10060      28   0.979  0.5841       0
WRD10030       0      REC19741209   1                               60404605301    4605
WSD10030      36   0.979  0.5841       0
WRD10040       0      REC19741209   1                               60404605302    4605
WSD10040     114   0.979  0.5841       0
WRD10020       0      REC19740812   1                               60404606301
WSD10020     294   0.979  0.5841       0
WRD10010       0      REC19740812   1                               60404607301
```

WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0		REC19470922	1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0		REC19860404	1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0		REC19860729	1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0		REC19861125	1		1	10405112301	
WSF10100	277	0.979	0.5841		0			
WRA10280	0		IND19880121	1			10405167301	
WSPONDH1	477	0.979	0.5841		0			

```
WRB10300       0     IRR19890112   1                                      10405212301
WSB10300    0.09   0.979  0.5841       0
WRB10260       0     IRR19890810   1                                      10405251301
WSB10260      86   0.979  0.5841       0
IFD10110  1025.6   CONST19891214   1   1                IF5272
**
WRD10110    6180     MUN19891214   1                                      10405272301    5272
WSLKGILM   12720
WRD10110       0     REC19891214   1                                      10405272302    5272
WSLKGILM   12720
WRF10090       0     REC19900710   1                           1          10405302301
WSF10090      80   0.979  0.5841       0
WRA10260       0     IND19950522   1                                      10405529301
WSPONDH4   173.7   0.979  0.5841       0
WRE10080       0     REC19950801   1                                      10405537301
WSE10080     296   0.979  0.5841       0
WRE10090      34     IRR19980320   1                                      10405608301    5608
WSE10090    55.6   0.979  0.5841       0
WRE10090       0     REC19980320   1                                      10405608302    5608
WSE10090    55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                      60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                      60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
```

```
SVELLISN      0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN      0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS      0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS      0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO      0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO      0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH      0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH      0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM      0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM      0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
**SVPIT129      0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
**SAPIT129      0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_PermittedDischarges_wPit129-Base

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ===============================================
JD    51   1948      1      -1      -1       0       5       0       0       3       0       0       0
** ===============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10     104000PT129
**FY   1.0  241800    1000     100                            FYLOTP
**FY   1.0   48500    1000     100      10                       BOB
**FY     1   10000    1000     100      10     10405850307
**FY     1   10000    1000     100      10     10405850301
**FY     1   10000    1000     100      10     10405850306
**FY     1   10000    1000     100      10     10405850304
**FY     1   10000    1000     100      10     10405850303
**FY     1   10000    1000     100      10     10405850305
**FY     1   10000    1000     100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60       60       60       60       76       76
UC            76       76       76       60       60       60
UC   MUN   0.077    0.070    0.075    0.076    0.084    0.091
UC         0.100    0.100    0.089    0.085    0.076    0.078
UC   IND   0.068    0.063    0.070    0.080    0.081    0.077
UC         0.109    0.109    0.104    0.084    0.072    0.076
UC   IRR   0.000    0.001    0.004    0.013    0.051    0.162
UC         0.200    0.241    0.142    0.097    0.053    0.038
UC   MIN   0.079    0.080    0.084    0.080    0.081    0.077
```

```
UC          0.080   0.084   0.088   0.090   0.090   0.087
UC    REC   0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                      7             NONE
CPPPDISC  TCUSBC                      7             NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                      7              513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                      7             NONE
CP585037  A10120                      7              513
CP585009  A10120                      7             NONE
CP585010  A10120                      7             NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                      7              513
**CP585007  A10000                      7             NONE
**CP585006  A10000                      7             NONE
CP585031  PPDISC                      7              513
CP585007  PPDISC                      7             NONE
CP585006  PPDISC                      7             NONE
CP585036  585034                      7              513
CP585034  585033                      7              513
CP585033  585032                      7              513
CP585035  585032                      7              513
CP585032  585005                      7              513
```

cyp_PermittedDischarges_wPit129-Base

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000          7      NONE
**CP585004  A10000          7      NONE
**CP585003  A10000          7      NONE
**CP585002  A10000          7      NONE
**CP585001  A10000          7      NONE
CP585005  PPDISC            7      NONE
CP585004  TCUSBC            7      NONE
CP585003  TCUSBC            7      NONE
CP585002  TCUSBC            7      NONE
CP585001  TCUSBC            7      NONE
CP585011  A10070            7      NONE
CP585012  A10010            7      NONE
CP585013  A10010            7      NONE
** add control points for A5814
CP581431  581432            7      QAD413
CP581432  A10260            7      QAD413
CP581433  A10240            7      QAD413
** add control points for A5813
CP581301  D10000            7      NONE
CP581302  D10000            7      NONE
CP581303  D10000            7      NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170            7      B10170
CP458237  B10170            7      B10170
**
CPA10370  A10340            7      QAD413
CPA10350  A10340            7      QAD413
CPA10340  A10300            7
**CPA10300  A10000          7      NONE
CPA10300  A10200            7      NONE
**
CPA10290  A10200            7      NONE
CPA10280  A10240            7      QAD413
CPA10260  A10240            7      QAD413
```

```
**CPA10240  A10000                      7
CPA10240  A10200                      7
CPA10200  A10000                      7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                      7              513
**CPA10100  A10000                      7              513
**CPA10090  A10000                      7              513
CPA10120  TCUSBC                      7              513
CPA10100  TCUSBC                      7              513
CPA10090  TCUSBC                      7              513
CPA10070  A10010                      7              513
CPA10060  A10010                      7              513
CPA10050  A10010                      7              513
CPA10040  A10010                      7              513
CPA10030  A10010                      7           QAD413
CPA10020  A10010                      7             NONE
CPA10010  A10000                      7              513
CPA10000  B10150                      0             NONE
CPB10320  B10310                      7           QAD413
CPB10310  B10150                      7             NONE
CPB10300  B10150                      7           QAD413
CPB10290  B10150                      7           QAD413
CPB10270  B10150                      7
CPB10260  B10150                      7           QAD413
CPB10250  B10150                      7           QAD413
CPB10230  B10170                      7              513
CPB10220  B10230                      7              513
CPB10210  B10150                      7              513
CPB10200  B10150                      7              513
CPB10180  B10170                      7              513
CPB10170  B10150                      7
CPB10150  B10040                      7             NONE
CPB10120  B10040                      7              513
CPB10110  B10040                      7              513
CPB10100  B10040                      7              513
```

cyp_PermittedDischarges_wPit129-Base

CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

cyp_PermittedDischarges_wPit129-Base

CPE10050	E10040	7		QAD412
CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE

```
CPA240DM    OUT                     2    NONE    NONE
CPB270DM    OUT                     2    NONE    NONE
CPB70DUM    OUT                     2    NONE    NONE
CPB20MUN    OUT                     2    NONE    NONE
CPAVNGER    OUT                     2    NONE    NONE
CPDNGRFD    OUT                     2    NONE    NONE
CPHGHSPR    OUT                     2    NONE    NONE
CPJEFFSN    OUT                     2    NONE    NONE
CPLVGSTN    OUT                     2    NONE    NONE
CPORECTY    OUT                     2    NONE    NONE
**
** ==================================================================
CPA-ZERO    OUT                     2    ZERO    ZERO      -3       0
** ==================================================================
**
**
**  Constant Inflow Records
**
CIB10310  50.42   47.26   53.28   49.72   44.71   41.43
CI        40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC    271     255     278     314     318     306
CI          427     427     408     329     286     302
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100    482     IND20181231   1   1     1.0                104000PT129   PT129
WSPIT129   5355
**
**TXU app 5850, 6/24/05, kb
WR585001     50     IND20041231   1                            10405850001    5850
WR585002      0     IND20041231   1                            10405850002    5850
SO                              BACKUP
```

WR585003	0	IND20041231	1	10405850003	5850
SO			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
SO			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
SO			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
SO			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
SO			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
SO			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
SO			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
SO			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
SO			BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
SO			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
SO			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979 0.5841			
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979 0.5841			
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979 0.5841			
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012 0.856			
WR585032	0	IND20041231	1	10405850302	5850

```
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028   1                          10405814301
WS    HR9    356   0.979  0.5841
WR581432       0   OTHER20031028   1                          10405814302
WS   HR21    263   0.979  0.5841
WR581433       0   OTHER20031028   1                          10405814303
WS   HR10   1495  0.4012   0.856
** APPLICATION 5813
WR581301     685    581320031001   1                          10405813001
WR581303       0    581320031001   1                          10405813003
SO                                BACKUP
WR581302       0    581320031001   1                          10405813002
SO                                BACKUP
WRD10130       0     REC19830222   1                          10404334301    4334
WSWHTOAK     6.7   0.979  0.5841       0
WRD10160       0     REC19830222   1                          10404334302    4334
WSBASSLK     3.4   0.979  0.5841       0
WRD10140       0     REC19830222   1                          10404334303    4334
WSDOGWOD       6   0.979  0.5841       0
WRD10180       0     REC19830222   1                          10404334304    4334
WSLKAUTM     130   0.979  0.5841       0
WRD10170       0     REC19830222   1                          10404334305    4334
WSCATFSH       5   0.979  0.5841       0
WRD10150       0     REC19830222   1                          10404334306    4334
WSLKPINE    10.5   0.979  0.5841       0
WRD10190       0     REC19830222   1                          10404334307    4334
WSLKWALL       5   0.979  0.5841       0
WRF10080    2343     MUN19830418   1                     1    10404349001    4349
WSF10080    8.29   0.979  0.5841       0
SO       3293.45    2343
WRF10080    1281     IND19830418   1                     1    10404349002    4349
WSF10080    8.29   0.979  0.5841       0
SO       3293.45    1281
```

```
WRB10250       0     REC19841127   1                                   10404522301
WSB10250     380   0.979  0.5841       0
WRF10180   202.5     IRR19841218   1                             1     10404525101
WRA10370       0     REC19750106   1                                   60404558301
WSA10370     350   0.979  0.5841       0
WRA10350       0     REC19751215   1                                   60404559301
WSA10350     230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500     MUN19700720   1   2   0.600                       60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                   60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                   60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720   1   2   0.700  A10020               60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                   60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                   60404561001
WRA10290    24.0     IRR19630801   1                                   60404562002
**
**
**  Lake Monticello
**
**
```

```
WRA10240   15300    IND19700406   1                                  60404563301    4563
WSLKMONT   40100
**
WRA10240    1000    IND19730604   1                                  60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000    MUN19711220   1   2   0.600  A10020              60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000    IND19711220   1                                  60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900    IND19711220   1   2   0.700                      60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0    REC19711220   1                                  60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930    MUN19711220   1   2   0.600  B10310           2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000    IND19711220   1                                   1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600    IND19780313   1                                  60404564304    4564   BOBROR
**
** ================================================================
WRA10120    1680    MUN19550822   1   2   0.600  A10020              60404565301    4565
WSTANKSL    2700  0.4012   0.856      0
WRA10120     550    IND19550822   1   2   0.700                      60404565302    4565
```

```
WSTANKSL     2700  0.4012   0.856        0
WRA10120        0     REC19550822   1                                              60404565303    4565
WSTANKSL     2700  0.4012   0.856        0
WRA10090    21.44     IRR19591231   1                                              60404566301
WSA10090     0.23   0.979  0.5841        0
WRA10100        6     IRR19561231   1                                              60404567301
WSA10100        5   0.979  0.5841        0
WRA10050      7.5     IRR19631231   1                                              60404568301
WSA10050       35   0.979  0.5841        0
WRA10070      400     MUN19380317   1    2    0.600   A10020                       60404569301    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10070        0     REC19380317   1                                              60404569302    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10060      144     MUN19750120   1    2    0.600   A10020                       60404570301    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10060        0     REC19750120   1                                              60404570302    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10040        4     IRR19631231   1                                              60404571301
WSA10040       12   0.979  0.5841        0
WRA10030      4.4     IRR19631231   1                                              60404572301
WSA10030       10   0.979  0.5841        0
WRE10020     25.3     IND19850604   1                                              10404573301
WSE10020       42   0.979  0.5841        0
WRA10010       11     IRR19551231   1                                              60404573001
WRB10320        0     IRR19511231   1                                              60404574001    4574
WSOFF320      5.0   0.979  0.5841        0
SO           5.43    1.40
WRB10320      1.4     IRR19511231   1                                              60404574301    4574
WSB10320      0.5   0.979  0.5841        0
WSOFF320      5.0   0.979  0.5841        0
OR            5.0
SO           5.43    1.40
WRB10290        0     REC19730430   1                                              60404575301
WSB10290       80   0.979  0.5841        0
**
```

```
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                   60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                   60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                   60404577301
WSB10230      96   0.979  0.5841        0
WRB10220       6     IRR19521231   1                                   60404578301
WSB10220       1   0.979  0.5841        0
WRB10210      75     IRR19531231   1                                   60404579301
WSB10210      64   0.979  0.5841        0
WRB10200       2     IRR19581231   1                                   60404580301
WSB10200     0.5   0.979  0.5841        0
WRB10180       0     REC19690922   1                                   60404581301
WSB10180     510   0.979  0.5841        0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                   60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                   60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                   60404582004    4582 ELLISON
```

```
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                         60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                              4582BU    4582  barnes
WSBARNES   24000
SO                       458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                                     60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                                     60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                                     60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                                     60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                                     60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                                     60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                     60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                     60404589301
WSB10050     240   0.979  0.5841       0
```

```
**
**
**  Lake O'the Pines
** ==========================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                1MUN    4590  FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                2IND    4590  FYLOTP
WSLKOPNS  251000
** ==========================================================================
**
WRF10250       8     IRR19670430   1                        1     60404591301
WSF10250       6   0.979  0.5841      0
WRF10230   96.88     IRR19690930   1                        1     60404592001
WRF10240      85     IRR19620531   1                        1     60404593301
WSF10240     100   0.979  0.5841      0
WRF10220    1080     IRR19550103   1                        1     60404594002
WRF10210    2000     MUN19630218   1                        1     60404595001
WRF10190   80.21     IRR19570319   1                        1     60404596001
WRC10040      25     IRR19760621   1                              60404597301
WSC10040      35   0.979  0.5841      0
WRC10030      10     IND19700126   1                              60404598301
WSC10030       5   0.979  0.5841      0
WRC10010      47     IRR19530731   1                              60404599001
WSC10010       7   0.979  0.5841      0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                        1     60404600001
WRD10090       0     REC19461121   1                              60404601301
WSD10090     135   0.979  0.5841      0
WRD10080       0     REC19600211   1                              60404602301
WSD10080    1414  0.4012   0.856      0
WRD10070       0     REC19730312   1                              60404603301
WSELWOOD     116   0.979  0.5841      0
WRD10060    7.03     IRR19670630   1                              60404604301
WSD10060      28   0.979  0.5841      0
```

WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			

```
WR 10020        0     REC19470922   1                                          60404621301
WS 10020      160   0.979  0.5841       0
WRD10120        0     REC19860404   1                                          10405054301
WSD10120      550   0.979  0.5841       0
WRC10050        0     REC19860729   1                                          10405080301
WSC10050      300   0.979  0.5841       0
WRF10100        0     REC19861125   1                                    1     10405112301
WSF10100      277   0.979  0.5841       0
WRA10280        0     IND19880121   1                                          10405167301
WSPONDH1      477   0.979  0.5841       0
WRB10300        0     IRR19890112   1                                          10405212301
WSB10300     0.09   0.979  0.5841       0
WRB10260        0     IRR19890810   1                                          10405251301
WSB10260       86   0.979  0.5841       0
IFD10110   1025.6   CONST19891214   1   1                           IF5272
**
WRD10110     6180     MUN19891214   1                                          10405272301     5272
WSLKGILM    12720
WRD10110        0     REC19891214   1                                          10405272302     5272
WSLKGILM    12720
WRF10090        0     REC19900710   1                                    1     10405302301
WSF10090       80   0.979  0.5841       0
WRA10260        0     IND19950522   1                                          10405529301
WSPONDH4    173.7   0.979  0.5841       0
WRE10080        0     REC19950801   1                                          10405537301
WSE10080      296   0.979  0.5841       0
WRE10090       34     IRR19980320   1                                          10405608301     5608
WSE10090     55.6   0.979  0.5841       0
WRE10090        0     REC19980320   1                                          10405608302     5608
WSE10090     55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005        0   OTHER99999999   1                                          60409999301     9999
WS CADDO   125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005    40000     MUN99999999   1                                          60409999302     9999
```

```
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129       0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129       0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
```

```
IS    4       0  125000  125001  865000
IP          100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_PermittedDischarges_wPit129Div-FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ===============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ===============================================
JO
RO    -1
**
**FY      1   10000     1000      100       10      104000PT129
FY   1.0  241800     1000      100                              FYLOTP
**FY   1.0   48500     1000      100       10                        BOB
**FY      1   10000     1000      100       10      10405850307
**FY      1   10000     1000      100       10      10405850301
**FY      1   10000     1000      100       10      10405850306
**FY      1   10000     1000      100       10      10405850304
**FY      1   10000     1000      100       10      10405850303
**FY      1   10000     1000      100       10      10405850305
**FY      1   10000     1000      100       10      10405850302
**
**  Monthly Water Use Factors
**
UC  5813       60       60       60       60       76       76
UC             76       76       76       60       60       60
UC   MUN    0.077    0.070    0.075    0.076    0.084    0.091
UC          0.100    0.100    0.089    0.085    0.076    0.078
UC   IND    0.068    0.063    0.070    0.080    0.081    0.077
UC          0.109    0.109    0.104    0.084    0.072    0.076
UC   IRR    0.000    0.001    0.004    0.013    0.051    0.162
UC          0.200    0.241    0.142    0.097    0.053    0.038
UC   MIN    0.079    0.080    0.084    0.080    0.081    0.077
UC          0.080    0.084    0.088    0.090    0.090    0.087
UC   REC    0.083    0.083    0.083    0.083    0.083    0.083
UC          0.083    0.083    0.083    0.083    0.083    0.083
```

```
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                      7            NONE
CPPPDISC  TCUSBC                      7            NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                      7             513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                      7            NONE
CP585037  A10120                      7             513
CP585009  A10120                      7            NONE
CP585010  A10120                      7            NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                      7             513
**CP585007  A10000                      7            NONE
**CP585006  A10000                      7            NONE
CP585031  PPDISC                      7             513
CP585007  PPDISC                      7            NONE
CP585006  PPDISC                      7            NONE
CP585036  585034                      7             513
CP585034  585033                      7             513
CP585033  585032                      7             513
CP585035  585032                      7             513
CP585032  585005                      7             513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                      7            NONE
**CP585004  A10000                      7            NONE
**CP585003  A10000                      7            NONE
**CP585002  A10000                      7            NONE
**CP585001  A10000                      7            NONE
```

```
CP585005  PPDISC                    7           NONE
CP585004  TCUSBC                    7           NONE
CP585003  TCUSBC                    7           NONE
CP585002  TCUSBC                    7           NONE
CP585001  TCUSBC                    7           NONE
CP585011  A10070                    7           NONE
CP585012  A10010                    7           NONE
CP585013  A10010                    7           NONE
** add control points for A5814
CP581431  581432                    7         QAD413
CP581432  A10260                    7         QAD413
CP581433  A10240                    7         QAD413
** add control points for A5813
CP581301  D10000                    7           NONE
CP581302  D10000                    7           NONE
CP581303  D10000                    7           NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                    7         B10170
CP458237  B10170                    7         B10170
**
CPA10370  A10340                    7         QAD413
CPA10350  A10340                    7         QAD413
CPA10340  A10300                    7
**CPA10300  A10000                    7           NONE
CPA10300  A10200                    7           NONE
**
CPA10290  A10200                    7           NONE
CPA10280  A10240                    7         QAD413
CPA10260  A10240                    7         QAD413
**CPA10240  A10000                    7
CPA10240  A10200                    7
CPA10200  A10000                    7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                    7             513
**CPA10100  A10000                    7             513
**CPA10090  A10000                    7             513
CPA10120  TCUSBC                    7             513
CPA10100  TCUSBC                    7             513
```

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

cyp_PermittedDischarges_wPit129Div-FYLO

CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

```
CPF10130  F10080                      7             NONE
CPF10120  F10080                      7              513
CPF10110  F10080                      7              513
CPF10100  F10080                      7           QAD512
CPF10090  F10080                      7           QAD413
CPF10080  F10005                      7              513
CPF10030  F10020                      7           QAD412
CPF10020  F10005                      7              513
CPF10005  F10000                      7
CPF10000     OUT                      0             NONE
CP 10050   10040                      7           QAD413
CP 10040   10010                      7           QAD413
CP 10020   10010                      7           QAD413
CP 10010     OUT                      7             NONE
CPQAD412     OUT                      0
CPQAD413     OUT                      0
CPQAD512     OUT                      0
CP   513     OUT                      0
CPSABINE     OUT                      2     NONE    NONE
CPSULPHR     OUT                      2     NONE    NONE
CPA240DM     OUT                      2     NONE    NONE
CPB270DM     OUT                      2     NONE    NONE
CPB70DUM     OUT                      2     NONE    NONE
CPB20MUN     OUT                      2     NONE    NONE
CPAVNGER     OUT                      2     NONE    NONE
CPDNGRFD     OUT                      2     NONE    NONE
CPHGHSPR     OUT                      2     NONE    NONE
CPJEFFSN     OUT                      2     NONE    NONE
CPLVGSTN     OUT                      2     NONE    NONE
CPORECTY     OUT                      2     NONE    NONE
**
** ====================================================================
CPA-ZERO     OUT                      2     ZERO    ZERO      -3       0
** ====================================================================
**
**
**  Constant Inflow Records
**
```

```
CIB10310   50.42   47.26   53.28   49.72   44.71   41.43
CI         40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC     271     255     278     314     318     306
CI           427     427     408     329     286     302
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100     482     IND20181231   1   1     1.0                        104000PT129    PT129
WSPIT129    5355
WRB10040       0     IND20181231   1                                         JrFill     4590
WSLKOPNS  251000
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231   1                                    10405850001     5850
WR585002       0     IND20041231   1                                    10405850002     5850
SO                                BACKUP
WR585003       0     IND20041231   1                                    10405850003     5850
SO                                BACKUP
WR585004       0     IND20041231   1                                    10405850004     5850
SO                                BACKUP
WR585005       0     IND20041231   1                                    10405850005     5850
SO                                BACKUP
WR585006       0     IND20041231   1                                    10405850006     5850
SO                                BACKUP
WR585007       0     IND20041231   1                                    10405850007     5850
SO                                BACKUP
WR585008       0     IND20041231   1                                    10405850008     5850
SO                                BACKUP
WR585009       0     IND20041231   1                                    10405850009     5850
SO                                BACKUP
WR585010       0     IND20041231   1                                    10405850010     5850
SO                                BACKUP
WR585011       0     IND20041231   1                                    10405850011     5850
SO                                BACKUP
WR585012       0     IND20041231   1                                    10405850012     5850
```

```
SO                                          BACKUP
WR585013        0     IND20041231   1                                     10405850013    5850
SO                                          BACKUP
WR585037        0     IND20041231   1                                     10405850307    5850
WSR58507    525.6   0.979  0.5841
WR585031        0     IND20041231   1                                     10405850301    5850
WSR58501    271.4   0.979  0.5841
WR585036        0     IND20041231   1                                     10405850306    5850
WSR58506      327   0.979  0.5841
WR585034        0     IND20041231   1                                     10405850304    5850
WSR58504    509.3   0.979  0.5841
WR585033        0     IND20041231   1                                     10405850303    5850
WSR58503    287.3   0.979  0.5841
WR585035        0     IND20041231   1                                     10405850305    5850
WSR58505    604.8  0.4012   0.856
WR585032        0     IND20041231   1                                     10405850302    5850
WSR58502    245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431        0   OTHER20031028   1                                     10405814301
WS   HR9      356   0.979  0.5841
WR581432        0   OTHER20031028   1                                     10405814302
WS  HR21      263   0.979  0.5841
WR581433        0   OTHER20031028   1                                     10405814303
WS  HR10     1495  0.4012   0.856
** APPLICATION 5813
WR581301      685    581320031001   1                                     10405813001
WR581303        0    581320031001   1                                     10405813003
SO                                          BACKUP
WR581302        0    581320031001   1                                     10405813002
SO                                          BACKUP
WRD10130        0     REC19830222   1                                     10404334301    4334
WSWHTOAK      6.7   0.979  0.5841       0
WRD10160        0     REC19830222   1                                     10404334302    4334
WSBASSLK      3.4   0.979  0.5841       0
WRD10140        0     REC19830222   1                                     10404334303    4334
WSDOGWOD        6   0.979  0.5841       0
WRD10180        0     REC19830222   1                                     10404334304    4334
```

```
WSLKAUTM     130   0.979  0.5841      0
WRD10170       0     REC19830222  1                                       10404334305    4334
WSCATFSH       5   0.979  0.5841      0
WRD10150       0     REC19830222  1                                       10404334306    4334
WSLKPINE    10.5   0.979  0.5841      0
WRD10190       0     REC19830222  1                                       10404334307    4334
WSLKWALL       5   0.979  0.5841      0
WRF10080    2343     MUN19830418  1                               1       10404349001    4349
WSF10080    8.29   0.979  0.5841      0
SO       3293.45    2343
WRF10080    1281     IND19830418  1                               1       10404349002    4349
WSF10080    8.29   0.979  0.5841      0
SO       3293.45    1281
WRB10250       0     REC19841127  1                                       10404522301
WSB10250     380   0.979  0.5841      0
WRF10180   202.5     IRR19841218  1                               1       10404525101
WRA10370       0     REC19750106  1                                       60404558301
WSA10370     350   0.979  0.5841      0
WRA10350       0     REC19751215  1                                       60404559301
WSA10350     230   0.979  0.5841      0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500     MUN19700720  1   2   0.600                           60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131  1                                       60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720  1                                       60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720  1   2   0.700  A10020                   60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131  1                                       60404560305    4560 CYPRESS
```

```
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                      60404561001
WRA10290    24.0     IRR19630801   1                                      60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                                      60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                      60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1   2   0.600  A10020                  60404564301    4564      BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                      60404564302    4564      BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1   2   0.700                          60404564303    4564      BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                      60404564305    4564      BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1   2   0.600  B10310               2MEMBERSFRMBOB    4590      BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                      1TXU_MONTE    4590      BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
```

```
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600      IND19780313   1                                        60404564304    4564  BOBROR
**
** ==================================================================
WRA10120    1680       MUN19550822   1    2    0.600   A10020                60404565301    4565
WSTANKSL    2700  0.4012    0.856         0
WRA10120     550       IND19550822   1    2    0.700                         60404565302    4565
WSTANKSL    2700  0.4012    0.856         0
WRA10120       0       REC19550822   1                                       60404565303    4565
WSTANKSL    2700  0.4012    0.856         0
WRA10090   21.44       IRR19591231   1                                       60404566301
WSA10090    0.23   0.979   0.5841         0
WRA10100       6       IRR19561231   1                                       60404567301
WSA10100       5   0.979   0.5841         0
WRA10050     7.5       IRR19631231   1                                       60404568301
WSA10050      35   0.979   0.5841         0
WRA10070     400       MUN19380317   1    2    0.600   A10020                60404569301    4569
WSNEWCTY    1176  0.4012    0.856         0
WRA10070       0       REC19380317   1                                       60404569302    4569
WSNEWCTY    1176  0.4012    0.856         0
WRA10060     144       MUN19750120   1    2    0.600   A10020                60404570301    4570
WSOLDCTY     100   0.979   0.5841         0
WRA10060       0       REC19750120   1                                       60404570302    4570
WSOLDCTY     100   0.979   0.5841         0
WRA10040       4       IRR19631231   1                                       60404571301
WSA10040      12   0.979   0.5841         0
WRA10030     4.4       IRR19631231   1                                       60404572301
WSA10030      10   0.979   0.5841         0
WRE10020    25.3       IND19850604   1                                       10404573301
WSE10020      42   0.979   0.5841         0
WRA10010      11       IRR19551231   1                                       60404573001
WRB10320       0       IRR19511231   1                                       60404574001    4574
WSOFF320     5.0   0.979   0.5841         0
SO          5.43     1.40
WRB10320     1.4       IRR19511231   1                                       60404574301    4574
WSB10320     0.5   0.979   0.5841         0
WSOFF320     5.0   0.979   0.5841         0
OR           5.0
```

```
SO          5.43    1.40
WRB10290       0     REC19730430   1                                    60404575301
WSB10290      80   0.979  0.5841        0
**
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                    60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                    60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                    60404577301
WSB10230      96   0.979  0.5841        0
WRB10220       6     IRR19521231   1                                    60404578301
WSB10220       1   0.979  0.5841        0
WRB10210      75     IRR19531231   1                                    60404579301
WSB10210      64   0.979  0.5841        0
WRB10200       2     IRR19581231   1                                    60404580301
WSB10200     0.5   0.979  0.5841        0
WRB10180       0     REC19690922   1                                    60404581301
WSB10180     510   0.979  0.5841        0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                    60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                    60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
```

```
WRB10170             19421130   1                                     60404582004    4582 ELLISON
WSELLISN   24700
SO                26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                      60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                          4582BU    4582  barnes
WSBARNES   24000
SO                       458237   BACKUP
**
**
WRB10120    38.3     IRR19620731   1                                  60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                                  60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                                  60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                                  60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                                  60404587301
WSSIMPSN    2500  0.4012    0.856      0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                                  60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                  60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                  60404589301
WSB10050     240   0.979  0.5841       0
**
**
```

```
**  Lake O'the Pines
** ==========================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                        1MUN    4590  FYLOTP
WSLKOPNS  251000       -1
WRB10040  151800     IND19570916   1                                        2IND    4590  FYLOTP
WSLKOPNS  251000
** ==========================================================================
**
WRF10250       8     IRR19670430   1                             1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                             1     60404592001
WRF10240      85     IRR19620531   1                             1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                             1     60404594002
WRF10210    2000     MUN19630218   1                             1     60404595001
WRF10190   80.21     IRR19570319   1                             1     60404596001
WRC10040      25     IRR19760621   1                                   60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                                   60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                                   60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42       47
WRF10170    62.5     IRR19660630   1                             1     60404600001
WRD10090       0     REC19461121   1                                   60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                                   60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                                   60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                                   60404604301
WSD10060      28   0.979  0.5841       0
WRD10030       0     REC19741209   1                                   60404605301    4605
WSD10030      36   0.979  0.5841       0
WRD10040       0     REC19741209   1                                   60404605302    4605
WSD10040     114   0.979  0.5841       0
WRD10020       0     REC19740812   1                                   60404606301
```

WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0		REC19470922	1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0		REC19860404	1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0		REC19860729	1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0		REC19861125	1		1	10405112301	
WSF10100	277	0.979	0.5841		0			

```
WRA10280       0    IND19880121   1                                      10405167301
WSPONDH1     477   0.979  0.5841      0
WRB10300       0    IRR19890112   1                                      10405212301
WSB10300    0.09   0.979  0.5841      0
WRB10260       0    IRR19890810   1                                      10405251301
WSB10260      86   0.979  0.5841      0
IFD10110  1025.6   CONST19891214   1   1                  IF5272
**
WRD10110    6180    MUN19891214   1                                      10405272301    5272
WSLKGILM   12720
WRD10110       0    REC19891214   1                                      10405272302    5272
WSLKGILM   12720
WRF10090       0    REC19900710   1                            1         10405302301
WSF10090      80   0.979  0.5841      0
WRA10260       0    IND19950522   1                                      10405529301
WSPONDH4   173.7   0.979  0.5841      0
WRE10080       0    REC19950801   1                                      10405537301
WSE10080     296   0.979  0.5841      0
WRE10090      34    IRR19980320   1                                      10405608301    5608
WSE10090    55.6   0.979  0.5841      0
WRE10090       0    REC19980320   1                                      10405608302    5608
WSE10090    55.6   0.979  0.5841      0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                     60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000    MUN99999999   1                                      60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
```

```
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129       0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129       0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI      1       1   CADDO
IS      4       0  125000  125001  865000
IP            100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp_PermittedDischarges_wPit129-FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ===============================================
JD    51   1948       1      -1      -1       0       5       0       0       3       0       0       0
** ===============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10     104000PT129
FY   1.0  241800    1000     100                          FYLOTP
**FY   1.0   48500    1000     100      10                     BOB
**FY     1   10000    1000     100      10     10405850307
**FY     1   10000    1000     100      10     10405850301
**FY     1   10000    1000     100      10     10405850306
**FY     1   10000    1000     100      10     10405850304
**FY     1   10000    1000     100      10     10405850303
**FY     1   10000    1000     100      10     10405850305
**FY     1   10000    1000     100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
```

```
UC          0.080   0.084   0.088   0.090   0.090   0.087
UC    REC   0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                       7             NONE
CPPPDISC  TCUSBC                       7             NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                       7              513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                       7             NONE
CP585037  A10120                       7              513
CP585009  A10120                       7             NONE
CP585010  A10120                       7             NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                       7              513
**CP585007  A10000                       7             NONE
**CP585006  A10000                       7             NONE
CP585031  PPDISC                       7              513
CP585007  PPDISC                       7             NONE
CP585006  PPDISC                       7             NONE
CP585036  585034                       7              513
CP585034  585033                       7              513
CP585033  585032                       7              513
CP585035  585032                       7              513
CP585032  585005                       7              513
```

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                    7          NONE
**CP585004  A10000                    7          NONE
**CP585003  A10000                    7          NONE
**CP585002  A10000                    7          NONE
**CP585001  A10000                    7          NONE
CP585005  PPDISC                    7          NONE
CP585004  TCUSBC                    7          NONE
CP585003  TCUSBC                    7          NONE
CP585002  TCUSBC                    7          NONE
CP585001  TCUSBC                    7          NONE
CP585011  A10070                    7          NONE
CP585012  A10010                    7          NONE
CP585013  A10010                    7          NONE
** add control points for A5814
CP581431  581432                    7        QAD413
CP581432  A10260                    7        QAD413
CP581433  A10240                    7        QAD413
** add control points for A5813
CP581301  D10000                    7          NONE
CP581302  D10000                    7          NONE
CP581303  D10000                    7          NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                    7        B10170
CP458237  B10170                    7        B10170
**
CPA10370  A10340                    7        QAD413
CPA10350  A10340                    7        QAD413
CPA10340  A10300                    7
**CPA10300  A10000                    7          NONE
CPA10300  A10200                    7          NONE
**
CPA10290  A10200                    7          NONE
CPA10280  A10240                    7        QAD413
CPA10260  A10240                    7        QAD413
```

```
**CPA10240  A10000                        7
CPA10240  A10200                        7
CPA10200  A10000                        7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                        7              513
**CPA10100  A10000                        7              513
**CPA10090  A10000                        7              513
CPA10120  TCUSBC                        7              513
CPA10100  TCUSBC                        7              513
CPA10090  TCUSBC                        7              513
CPA10070  A10010                        7              513
CPA10060  A10010                        7              513
CPA10050  A10010                        7              513
CPA10040  A10010                        7              513
CPA10030  A10010                        7           QAD413
CPA10020  A10010                        7             NONE
CPA10010  A10000                        7              513
CPA10000  B10150                        0             NONE
CPB10320  B10310                        7           QAD413
CPB10310  B10150                        7             NONE
CPB10300  B10150                        7           QAD413
CPB10290  B10150                        7           QAD413
CPB10270  B10150                        7
CPB10260  B10150                        7           QAD413
CPB10250  B10150                        7           QAD413
CPB10230  B10170                        7              513
CPB10220  B10230                        7              513
CPB10210  B10150                        7              513
CPB10200  B10150                        7              513
CPB10180  B10170                        7              513
CPB10170  B10150                        7
CPB10150  B10040                        7             NONE
CPB10120  B10040                        7              513
CPB10110  B10040                        7              513
CPB10100  B10040                        7              513
```

cyp_PermittedDischarges_wPit129-FYLOTP

CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

cyp_PermittedDischarges_wPit129-FYLOTP

CPE10050	E10040	7		QAD412
CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE

```
CPA240DM     OUT                        2    NONE    NONE
CPB270DM     OUT                        2    NONE    NONE
CPB70DUM     OUT                        2    NONE    NONE
CPB20MUN     OUT                        2    NONE    NONE
CPAVNGER     OUT                        2    NONE    NONE
CPDNGRFD     OUT                        2    NONE    NONE
CPHGHSPR     OUT                        2    NONE    NONE
CPJEFFSN     OUT                        2    NONE    NONE
CPLVGSTN     OUT                        2    NONE    NONE
CPORECTY     OUT                        2    NONE    NONE
**
** ===================================================================
CPA-ZERO     OUT                        2    ZERO    ZERO      -3      0
** ===================================================================
**
**
**  Constant Inflow Records
**
CIB10310   50.42   47.26   53.28   49.72   44.71   41.43
CI         40.91   39.96   36.83   38.05   41.43   50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC     271     255     278     314     318     306
CI           427     427     408     329     286     302
**
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100     482     IND20181231   1   1     1.0                104000PT129    PT129
WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231   1                            10405850001     5850
WR585002       0     IND20041231   1                            10405850002     5850
SO                                BACKUP
```

WR585003	0	IND20041231	1	10405850003	5850
SO			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
SO			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
SO			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
SO			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
SO			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
SO			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
SO			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
SO			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
SO			BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
SO			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
SO			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979 0.5841			
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979 0.5841			
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979 0.5841			
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012 0.856			
WR585032	0	IND20041231	1	10405850302	5850

```
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028   1                                   10405814301
WS    HR9    356   0.979  0.5841
WR581432       0   OTHER20031028   1                                   10405814302
WS   HR21    263   0.979  0.5841
WR581433       0   OTHER20031028   1                                   10405814303
WS   HR10   1495  0.4012   0.856
** APPLICATION 5813
WR581301     685     581320031001  1                                   10405813001
WR581303       0     581320031001  1                                   10405813003
SO                                BACKUP
WR581302       0     581320031001  1                                   10405813002
SO                                BACKUP
WRD10130       0      REC19830222  1                                   10404334301    4334
WSWHTOAK     6.7   0.979  0.5841       0
WRD10160       0      REC19830222  1                                   10404334302    4334
WSBASSLK     3.4   0.979  0.5841       0
WRD10140       0      REC19830222  1                                   10404334303    4334
WSDOGWOD       6   0.979  0.5841       0
WRD10180       0      REC19830222  1                                   10404334304    4334
WSLKAUTM     130   0.979  0.5841       0
WRD10170       0      REC19830222  1                                   10404334305    4334
WSCATFSH       5   0.979  0.5841       0
WRD10150       0      REC19830222  1                                   10404334306    4334
WSLKPINE    10.5   0.979  0.5841       0
WRD10190       0      REC19830222  1                                   10404334307    4334
WSLKWALL       5   0.979  0.5841       0
WRF10080    2343      MUN19830418  1                             1     10404349001    4349
WSF10080    8.29   0.979  0.5841       0
SO       3293.45    2343
WRF10080    1281      IND19830418  1                             1     10404349002    4349
WSF10080    8.29   0.979  0.5841       0
SO       3293.45    1281
```

```
WRB10250       0     REC19841127   1                                   10404522301
WSB10250     380   0.979  0.5841       0
WRF10180   202.5     IRR19841218   1                             1     10404525101
WRA10370       0     REC19750106   1                                   60404558301
WSA10370     350   0.979  0.5841       0
WRA10350       0     REC19751215   1                                   60404559301
WSA10350     230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500     MUN19700720   1   2   0.600                       60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                   60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                   60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720   1   2   0.700  A10020               60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                   60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                   60404561001
WRA10290    24.0     IRR19630801   1                                   60404562002
**
**
**  Lake Monticello
**
**
```

```
WRA10240   15300     IND19700406   1                                         60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                         60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1    2    0.600   A10020                  60404564301    4564      BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                         60404564302    4564      BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1    2    0.700                           60404564303    4564      BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                         60404564305    4564      BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1    2    0.600   B10310              2MEMBERSFRMBOB     4590      BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                        1TXU_MONTE      4590      BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                         60404564304    4564   BOBROR
**
** ==================================================================
WRA10120    1680     MUN19550822   1    2    0.600   A10020                  60404565301    4565
WSTANKSL    2700  0.4012   0.856        0
WRA10120     550     IND19550822   1    2    0.700                           60404565302    4565
```

```
WSTANKSL     2700  0.4012   0.856        0
WRA10120        0     REC19550822   1                                           60404565303    4565
WSTANKSL     2700  0.4012   0.856        0
WRA10090    21.44     IRR19591231   1                                           60404566301
WSA10090     0.23   0.979  0.5841        0
WRA10100        6     IRR19561231   1                                           60404567301
WSA10100        5   0.979  0.5841        0
WRA10050      7.5     IRR19631231   1                                           60404568301
WSA10050       35   0.979  0.5841        0
WRA10070      400     MUN19380317   1    2    0.600   A10020                    60404569301    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10070        0     REC19380317   1                                           60404569302    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10060      144     MUN19750120   1    2    0.600   A10020                    60404570301    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10060        0     REC19750120   1                                           60404570302    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10040        4     IRR19631231   1                                           60404571301
WSA10040       12   0.979  0.5841        0
WRA10030      4.4     IRR19631231   1                                           60404572301
WSA10030       10   0.979  0.5841        0
WRE10020     25.3     IND19850604   1                                           10404573301
WSE10020       42   0.979  0.5841        0
WRA10010       11     IRR19551231   1                                           60404573001
WRB10320        0     IRR19511231   1                                           60404574001    4574
WSOFF320      5.0   0.979  0.5841        0
SO           5.43    1.40
WRB10320      1.4     IRR19511231   1                                           60404574301    4574
WSB10320      0.5   0.979  0.5841        0
WSOFF320      5.0   0.979  0.5841        0
OR            5.0
SO           5.43    1.40
WRB10290        0     REC19730430   1                                           60404575301
WSB10290       80   0.979  0.5841        0
**
```

```
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                     60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                     60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                     60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                     60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                     60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                     60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                     60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                     60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                     60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                     60404582004    4582 ELLISON
```

```
WSELLISN   24700
SO                26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                       60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856        0
WR458232       0   OTHER19720508                                            4582BU    4582  barnes
WSBARNES   24000
SO                       458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                                   60404583301
WSB10120    4.79   0.979  0.5841        0
WRB10110    14.2     IRR19480930   1                                   60404584301
WSB10110      60   0.979  0.5841        0
WRB10100    0.56     IRR19550331   1                                   60404585301
WSB10100      50   0.979  0.5841        0
WRB10090       1     IRR19641231   1                                   60404586301
WSB10090      12   0.979  0.5841        0
WRB10080     150     IRR19561231   1                                   60404587301
WSSIMPSN    2500  0.4012   0.856        0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                                   60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                   60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                   60404589301
WSB10050     240   0.979  0.5841        0
```

```
**
**
**  Lake O'the Pines
** ============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                          1MUN    4590   FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                          2IND    4590   FYLOTP
WSLKOPNS  251000
** ============================================================================
**
WRF10250       8     IRR19670430   1                              1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                              1     60404592001
WRF10240      85     IRR19620531   1                              1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                              1     60404594002
WRF10210    2000     MUN19630218   1                              1     60404595001
WRF10190   80.21     IRR19570319   1                              1     60404596001
WRC10040      25     IRR19760621   1                                    60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                                    60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                                    60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                              1     60404600001
WRD10090       0     REC19461121   1                                    60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                                    60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                                    60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                                    60404604301
WSD10060      28   0.979  0.5841       0
```

WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			

```
WR 10020        0    REC19470922   1                                          60404621301
WS 10020      160  0.979  0.5841       0
WRD10120        0    REC19860404   1                                          10405054301
WSD10120      550  0.979  0.5841       0
WRC10050        0    REC19860729   1                                          10405080301
WSC10050      300  0.979  0.5841       0
WRF10100        0    REC19861125   1                                  1       10405112301
WSF10100      277  0.979  0.5841       0
WRA10280        0    IND19880121   1                                          10405167301
WSPONDH1      477  0.979  0.5841       0
WRB10300        0    IRR19890112   1                                          10405212301
WSB10300     0.09  0.979  0.5841       0
WRB10260        0    IRR19890810   1                                          10405251301
WSB10260       86  0.979  0.5841       0
IFD10110   1025.6  CONST19891214   1   1                         IF5272
**
WRD10110     6180    MUN19891214   1                                          10405272301    5272
WSLKGILM    12720
WRD10110        0    REC19891214   1                                          10405272302    5272
WSLKGILM    12720
WRF10090        0    REC19900710   1                                  1       10405302301
WSF10090       80  0.979  0.5841       0
WRA10260        0    IND19950522   1                                          10405529301
WSPONDH4    173.7  0.979  0.5841       0
WRE10080        0    REC19950801   1                                          10405537301
WSE10080      296  0.979  0.5841       0
WRE10090       34    IRR19980320   1                                          10405608301    5608
WSE10090     55.6  0.979  0.5841       0
WRE10090        0    REC19980320   1                                          10405608302    5608
WSE10090     55.6  0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005        0  OTHER99999999   1                                          60409999301    9999
WS CADDO   125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005    40000    MUN99999999   1                                          60409999302    9999
```

```
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT        0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT        0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN        0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN        0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN        0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN        0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS        0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS        0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN        0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN        0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS        0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS        0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO        0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO        0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH        0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH        0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM        0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM        0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129        0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129        0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
```

```
IS    4       0  125000  125001  865000
IP          100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129.DIS

```
**
** Carollo add additional CPs for 1 reservoir (pit 129) ad flow analyses.
FD585100  A10000       0
WP585100 1.26875
FDTCUSBC  A10000       0
WPTCUSBC 35.3043
FDPPDISC  A10000       0
WPPPDISC 21.8636
**
**TXU app 5850, 6/24/05, kb
** TXU MINING add additional CPs for 13 diversion and 7 reservoirs
FD585008  A10000       0
WP585008  5.0368
FD585037  A10000       0
WP585037  0.4791
FD585009  A10000       0
WP585009  1.1166
FD585010  A10000       0
WP585010  1.2373
FD585031  A10000       0
WP585031  0.4284
FD585007  A10000       0
WP585007  0.2604
FD585006  A10000       0
WP585006  2.8062
FD585036  A10000       0
WP585036  0.4570
FD585034  A10000       0
WP585034  0.5905
FD585033  A10000       0
WP585033  2.9988
FD585035  A10000       0
WP585035  0.6235
FD585032  A10000       0
WP585032  4.2301
FD585005  A10000       0
WP585005  5.8348
FD585004  A10000       0
```

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WP585004  0.1356
FD585003  A10000       0
WP585003  1.9687
FD585002  A10000       0
WP585002  0.1512
FD585001  A10000       0
WP585001  0.1708
FD585011  A10000       0
WP585011  2.2375
FD585012  A10000       0
WP585012  2.6298
FD585013  A10000       0
WP585013  1.0074
**
**  Flow Distribution and Coefficients for all nine scenarios
** ADD ADDITIONAL CPS FOR A5814
FD581431  A10000       0
WP581431    .855
FD581432  A10000       0
WP581432    .930
FD581433  A10000       0
WP581433    .401
** ADD ADDITIONAL CPS FOR A5813
FD581301  D10000       0
WP581301   7.151
**
FD581302  D10000       0
WP581302   0.303
**
FD581303  D10000       0
WP581303   2.545
**
** ADD ADDITIONAL CPS FOR BARNES CREEK WATERSHED
FD458232  B10000       0  A10000
WP458232   3.364
**
FD458237  B10000       0  A10000
WP458237    .227
```

**

FDA10370	A10000	0	
FDA10350	A10000	0	
FDA10340	A10000	0	
FDA10300	A10000	0	
FDA10290	A10000	0	
FDA10280	A10000	0	
FDA10260	A10000	0	
FDA10240	A10000	0	
FDA10200	A10000	0	
FDA10120	A10000	0	
FDA10100	A10000	0	
FDA10090	A10000	0	
FDA10070	A10000	0	
FDA10060	A10000	0	
FDA10050	A10000	0	
FDA10040	A10000	0	
FDA10030	A10000	0	
FDA10020	A10000	0	
FDA10010	A10000	0	
FDB10320	B10000	0	A10000
FDB10310	B10000	0	A10000
FDB10300	B10000	0	A10000
FDB10290	B10000	0	A10000
FDB10270	B10000	0	A10000
FDB10260	B10000	0	A10000
FDB10250	B10000	0	A10000
FDB10230	B10000	0	A10000
FDB10220	B10000	0	A10000
FDB10210	B10000	0	A10000
FDB10200	B10000	0	A10000
FDB10180	B10000	0	A10000
FDB10170	B10000	0	A10000
FDB10150	B10000	1	A10000
FDB10120	B10000	0	A10000
FDB10110	B10000	0	A10000
FDB10100	B10000	0	A10000
FDB10090	B10000	0	A10000

FDB10080	B10000	0	A10000		
FDB10070	B10000	0	A10000		
FDB10050	B10000	0	A10000		
FDB10040	B10000	1	A10000		
FDC10050	C10000	0			
FDC10040	C10000	0			
FDC10030	C10000	0			
FDC10010	C10000	0			
FDD10190	D10000	0			
FDD10180	D10000	0			
FDD10170	D10000	0			
FDD10160	D10000	0			
FDD10150	D10000	0			
FDD10140	D10000	0			
FDD10130	D10000	0			
FDD10120	D10000	0			
FDD10110	D10000	0			
FDD10090	D10000	0			
FDD10080	D10000	0			
FDD10070	D10000	0			
FDD10060	D10000	0			
FDD10050	D10000	0			
FDD10030	D10000	0			
FDD10040	D10000	0			
FDD10020	D10000	0			
FDD10010	D10000	0			
FDE10090	E10000	0	D10000		
FDE10080	E10000	0	D10000		
FDE10070	E10000	0	D10000		
FDE10060	E10000	1	D10000		
FDE10050	E10000	0	D10000		
FDE10040	E10000	1	D10000		
FDE10020	E10000	0	D10000		
FDE10010	E10000	0	D10000		
FDF10250	F10000	0	B10000	C10000	E10000
FDF10240	F10000	0	B10000	C10000	E10000
FDF10230	F10000	1	B10000	C10000	E10000
FDF10220	F10000	1	B10000	C10000	E10000

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FDF10210  F10000        1  B10000  C10000  E10000
FDF10190  F10000        1  B10000  C10000  E10000
FDF10180  F10000        1  C10000  B10000  E10000
FDF10170  F10000        1  C10000  B10000  E10000
FDF10160  F10000        1  E10000  B10000  C10000
FDF10140  F10000        0  B10000  C10000  E10000
FDF10130  F10000        3  B10000  C10000  E10000
FDF10120  F10000        0  B10000  C10000  E10000
FDF10110  F10000        0  B10000  C10000  E10000
FDF10100  F10000        0  B10000  C10000  E10000
FDF10090  F10000        0  B10000  C10000  E10000
FDF10080  F10000        3  B10000  C10000  E10000
FDF10030  F10000        0  B10000  C10000  E10000
FDF10020  F10000        0  B10000  C10000  E10000
FDF10005  F10000        3  B10000  C10000  E10000
FD 10050  F10000        0  B10000  C10000  E10000
FD 10040  F10000        0  B10000  C10000  E10000
FD 10020  F10000        0  B10000  C10000  E10000
FD 10010  F10000        0  B10000  C10000  E10000
**
**  Watershed Parameters
**
WPA10370  6.8736   72.93   43.42
WPA10350   0.705   32.78   44.21
WPA10340 74.0257   65.96   43.92
WPA10300  165.78   68.53   43.83
WPA10290  3.8945   68.95   45.12
WPA10280  0.8391   69.57   45.12
WPA10260  2.4997   62.95   45.24
WPA10240   36.26   71.65   45.28
WPA10200 240.042   70.22   44.26
WPA10120  8.6031   69.44   46.42
WPA10100   0.149   65.79    46.3
WPA10090  0.8048   69.67   46.51
WPA10070  3.6154   62.41   46.49
WPA10060  0.4779   70.53   46.57
WPA10050  0.0784   79.65   46.54
WPA10040  0.1014   66.97   46.46
```

WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10150	682.23	69.54	44.98
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79
WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10000	885.97	68.96	45.11
WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99

cyp03_pit129.DIS

WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	7.1486	67.87	45.01
WPD10040	0.7809	64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69
WPE10050	0.4741	57.7	46.38
WPE10040	594.00	65.86	44.86
WPE10020	0.4527	65.03	47.46
WPE10010	9.9421	61.84	47.5
WPE10000	691.28	65.25	45.16
WPF10250	0.1139	68.6	46.67
WPF10240	1.0911	58.52	46.67
WPF10230	927.86	68.58	45.18
WPF10220	940.39	68.52	45.2
WPF10210	941.34	68.52	45.2
WPF10190	947.39	68.51	45.21
WPF10180	371.10	64.64	46.75
WPF10170	388.06	64.64	46.75
WPF10160	709.18	65.26	45.21
WPF10140	5.7082	64.03	47.1
WPF10130	2080.13	66.58	45.53
WPF10120	0.4119	55.16	47.76
WPF10110	2.9505	63.56	47.78
WPF10100	1.0985	61.45	47.81
WPF10090	0.3736	55	47.8
WPF10080	2158.50	66.53	45.62

WPF10030	1.1542	61.58	47.74
WPF10020	304.96	61.15	47.59
WPF10005	2791.60	66.21	46.08
WPF10000	2791.60	66.21	46.08
WP 10050	0.8384	75.04	47.24
WP 10040	3.8182	74.8	47.25
WP 10020	0.5407	67.2	47.12
WP 10010	105.81	34.29	47.2
WPSABINE	100	100	100
WPSULPHR	100	100	100
WPA240DM	100	100	100
WPB270DM	100	100	100
WPB70DUM	100	100	100
WPB20MUN	100	100	100
WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
**WPQAD412	100	100	100
**WPQAD413	100	100	100
**WPQAD512	100	100	100
**WP 513	100	100	100

ED

cyp03_pit129.EVA

cyp03_pit129.EVA

EVA10200	1948	0.129	0.151	0.019	0.073	0.032	0.442	0.244	0.375	0.467	0.225	-0.059	0.051
EVB10170	1948	0.015	0.061	0.138	0.068	-0.067	0.421	0.235	0.315	0.386	0.217	-0.155	0.031
EVB10070	1948	-0.016	0.053	0.162	0.070	-0.081	0.417	0.246	0.297	0.370	0.216	-0.186	0.023
EVF10005	1948	-0.037	0.069	0.204	0.076	-0.056	0.413	0.273	0.299	0.364	0.249	-0.219	0.027
EVA10340	1948	0.164	0.185	-0.004	0.076	0.075	0.447	0.252	0.401	0.493	0.243	-0.034	0.063
EVA10240	1948	0.142	0.163	0.009	0.074	0.046	0.444	0.247	0.383	0.477	0.229	-0.049	0.055
EVb10040	1948	-0.024	0.059	0.177	0.072	-0.072	0.415	0.256	0.297	0.368	0.228	-0.198	0.025
EVB10270	1948	0.075	0.104	0.066	0.069	-0.024	0.433	0.235	0.342	0.428	0.210	-0.101	0.038
EV 513	1948	-0.050	0.080	0.230	0.080	-0.040	0.410	0.290	0.300	0.360	0.270	-0.240	0.030
EVQAD412	1948	0.350	0.400	-0.240	0.100	0.280	0.490	0.320	0.480	0.650	0.250	0.100	0.080
EVQAD413	1948	0.050	0.000	0.030	0.050	-0.160	0.430	0.160	0.290	0.390	0.110	-0.080	0.010
EVQAD512	1948	0.100	0.080	0.170	0.060	0.020	0.420	0.210	0.420	0.420	0.310	-0.080	0.090
EVA10200	1949	-0.366	0.055	-0.057	-0.007	0.125	0.281	0.089	0.480	0.368	0.024	0.214	-0.027
EVB10170	1949	-0.427	0.040	-0.034	-0.007	0.191	0.080	0.007	0.462	0.352	-0.073	0.320	-0.068
EVB10070	1949	-0.427	0.033	-0.040	-0.009	0.187	0.049	-0.049	0.428	0.330	-0.094	0.326	-0.080
EVF10005	1949	-0.423	0.031	-0.034	-0.034	0.189	0.086	-0.086	0.398	0.318	-0.165	0.341	-0.080
EVA10340	1949	-0.472	0.062	-0.079	-0.043	0.172	0.326	0.142	0.542	0.395	-0.077	0.297	-0.031
EVA10240	1949	-0.469	0.057	-0.079	-0.032	0.171	0.274	0.115	0.528	0.384	-0.064	0.297	-0.040
EVB10040	1949	-0.425	0.033	-0.038	-0.018	0.187	0.062	-0.062	0.417	0.326	-0.120	0.331	-0.080
EVB10270	1949	-0.450	0.047	-0.062	-0.011	0.178	0.152	0.054	0.493	0.364	-0.050	0.305	-0.059
EVQAD412	1949	-0.580	0.070	-0.230	-0.100	0.100	0.650	0.160	0.550	0.370	-0.120	0.260	-0.020
EVQAD413	1949	-0.440	0.040	-0.060	0.070	0.180	-0.070	0.070	0.520	0.370	0.130	0.280	-0.080
EVQAD512	1949	-0.380	0.080	0.080	-0.040	0.250	0.270	0.280	0.620	0.480	-0.100	0.330	0.010
EV 513	1949	-0.420	0.030	-0.030	-0.050	0.190	0.110	-0.110	0.380	0.310	-0.210	0.350	-0.080
EVA10200	1950	0.054	0.065	0.127	0.022	0.040	0.250	0.121	0.420	-0.063	0.246	0.119	0.159
EVB10170	1950	0.004	0.045	0.157	0.019	0.013	0.261	0.116	0.476	-0.211	0.218	0.136	0.168
EVB10070	1950	-0.003	0.047	0.153	0.027	0.003	0.250	0.106	0.463	-0.237	0.207	0.127	0.157
EVF10005	1950	-0.007	0.031	0.157	0.023	0.019	0.244	0.133	0.473	-0.214	0.203	0.111	0.147
EVA10340	1950	0.048	0.035	0.136	-0.009	0.080	0.236	0.153	0.473	-0.107	0.250	0.169	0.192
EVA10240	1950	0.041	0.042	0.135	-0.001	0.063	0.236	0.136	0.464	-0.137	0.243	0.167	0.188
EVB10040	1950	-0.005	0.041	0.155	0.025	0.009	0.248	0.116	0.467	-0.229	0.205	0.121	0.153
EVB10270	1950	0.022	0.051	0.143	0.013	0.028	0.246	0.112	0.461	-0.193	0.228	0.154	0.178
EVQAD412	1950	0.110	0.050	0.060	-0.020	0.150	0.120	0.140	0.370	-0.060	0.260	0.210	0.190
EVQAD413	1950	0.010	0.100	0.140	0.040	-0.050	0.270	0.020	0.430	-0.310	0.220	0.180	0.190
EVQAD512	1950	0.020	-0.020	0.220	-0.040	0.100	0.360	0.260	0.630	0.010	0.280	0.140	0.220

cyp03_pit129.EVA

EV 513	1950	-0.010	0.020	0.160	0.020	0.030	0.240	0.150	0.480	-0.200	0.200	0.100	0.140
EVA10200	1951	-0.131	-0.015	0.113	0.023	0.124	0.166	0.147	0.376	-0.046	0.160	0.033	-0.009
EVB10170	1951	-0.208	-0.024	0.080	0.021	0.143	-0.026	0.148	0.333	-0.132	0.129	0.038	-0.072
EVB10070	1951	-0.233	-0.020	0.055	0.019	0.160	-0.042	0.136	0.307	-0.141	0.136	0.030	-0.102
EVF10005	1951	-0.243	-0.014	0.015	0.056	0.166	0.008	0.151	0.297	-0.116	0.163	0.036	-0.132
EVA10340	1951	-0.146	-0.041	0.115	0.060	0.115	0.165	0.178	0.409	-0.113	0.135	0.083	0.000
EVA10240	1951	-0.160	-0.039	0.112	0.043	0.124	0.122	0.165	0.393	-0.127	0.128	0.073	-0.011
EVB10040	1951	-0.237	-0.018	0.040	0.032	0.162	-0.024	0.141	0.303	-0.132	0.146	0.032	-0.113
EVB10270	1951	-0.190	-0.033	0.101	0.017	0.138	0.024	0.146	0.357	-0.143	0.121	0.050	-0.042
EVQAD412	1951	-0.140	-0.060	0.090	0.080	0.150	0.440	0.150	0.440	-0.160	0.150	0.130	0.020
EVQAD413	1951	-0.200	-0.040	0.180	-0.100	0.140	-0.200	0.090	0.340	-0.220	0.050	0.010	-0.010
EVQAD512	1951	-0.070	-0.030	0.160	0.130	0.030	0.110	0.280	0.470	0.010	0.150	0.090	0.050
EV 513	1951	-0.250	-0.010	-0.010	0.080	0.170	0.040	0.160	0.290	-0.100	0.180	0.040	-0.150
EVA10200	1952	-0.056	-0.105	-0.015	-0.042	0.026	0.389	0.233	0.360	0.455	0.275	-0.282	-0.151
EVB10170	1952	-0.110	-0.155	-0.059	-0.073	0.031	0.384	0.271	0.353	0.445	0.250	-0.333	-0.192
EVB10070	1952	-0.120	-0.159	-0.057	-0.066	0.037	0.386	0.267	0.339	0.434	0.243	-0.318	-0.183
EVF10005	1952	-0.126	-0.178	-0.047	-0.075	0.027	0.395	0.257	0.358	0.425	0.241	-0.264	-0.181
EVA10340	1952	-0.081	-0.163	-0.056	-0.094	0.004	0.385	0.244	0.398	0.479	0.276	-0.312	-0.227
EVA10240	1952	-0.086	-0.158	-0.059	-0.086	0.012	0.384	0.249	0.382	0.473	0.271	-0.325	-0.220
EVB10040	1952	-0.122	-0.166	-0.053	-0.069	0.033	0.389	0.263	0.346	0.431	0.243	-0.299	-0.183
EVB10270	1952	-0.100	-0.151	-0.062	-0.074	0.028	0.382	0.262	0.355	0.458	0.259	-0.343	-0.204
EVQAD412	1952	-0.070	-0.180	-0.050	-0.090	-0.010	0.390	0.170	0.390	0.500	0.300	-0.250	-0.260
EVQAD413	1952	-0.100	-0.100	-0.090	-0.040	0.070	0.360	0.300	0.280	0.460	0.250	-0.490	-0.190
EVQAD512	1952	-0.060	-0.170	-0.050	-0.140	-0.030	0.390	0.300	0.500	0.490	0.280	-0.310	-0.230
EV 513	1952	-0.130	-0.190	-0.040	-0.080	0.020	0.400	0.250	0.370	0.420	0.240	-0.230	-0.180
EVA10200	1953	-0.081	-0.053	-0.045	-0.017	-0.049	0.391	0.104	0.438	0.414	0.266	-0.012	-0.121
EVB10170	1953	-0.118	-0.063	-0.117	-0.094	0.021	0.369	0.118	0.470	0.397	0.242	0.029	-0.186
EVB10070	1953	-0.137	-0.073	-0.123	-0.114	0.023	0.354	0.090	0.467	0.393	0.240	0.023	-0.199
EVF10005	1953	-0.127	-0.096	-0.127	-0.099	0.027	0.333	0.084	0.457	0.391	0.240	0.021	-0.230
EVA10340	1953	-0.068	-0.084	-0.092	0.014	-0.049	0.395	0.145	0.445	0.417	0.258	0.021	-0.178
EVA10240	1953	-0.085	-0.079	-0.096	-0.011	-0.043	0.392	0.131	0.450	0.414	0.255	0.020	-0.175
EVB10040	1953	-0.133	-0.081	-0.125	-0.109	0.025	0.347	0.088	0.463	0.393	0.240	0.023	-0.210
EVB10270	1953	-0.113	-0.066	-0.107	-0.065	-0.012	0.383	0.116	0.462	0.405	0.248	0.023	-0.174
EVQAD412	1953	-0.090	-0.160	-0.070	0.120	-0.210	0.390	0.040	0.380	0.440	0.280	-0.030	-0.200
EVQAD413	1953	-0.170	0.000	-0.110	-0.160	0.010	0.420	0.110	0.500	0.400	0.240	0.030	-0.100

EVQAD512	1953	0.050	-0.030	-0.090	0.040	0.080	0.420	0.330	0.490	0.410	0.250	0.080	-0.170
EV 513	1953	-0.120	-0.110	-0.130	-0.090	0.030	0.320	0.080	0.450	0.390	0.240	0.020	-0.250
EVA10200	1954	-0.091	0.179	0.234	0.088	-0.142	0.499	0.487	0.627	0.383	-0.156	0.019	-0.042
EVB10170	1954	-0.117	0.204	0.245	0.084	-0.239	0.553	0.548	0.636	0.418	-0.310	-0.013	-0.076
EVB10070	1954	-0.120	0.196	0.233	0.086	-0.258	0.549	0.533	0.601	0.416	-0.281	-0.026	-0.084
EVF10005	1954	-0.114	0.217	0.243	0.119	-0.228	0.574	0.556	0.570	0.431	-0.238	-0.047	-0.063
EVA10340	1954	-0.120	0.245	0.289	0.124	-0.120	0.561	0.617	0.722	0.403	-0.308	0.042	-0.034
EVA10240	1954	-0.123	0.231	0.275	0.110	-0.150	0.550	0.596	0.708	0.399	-0.309	0.037	-0.049
EVB10040	1954	-0.118	0.204	0.237	0.098	-0.247	0.558	0.541	0.590	0.421	-0.266	-0.034	-0.077
EVB10270	1954	-0.124	0.207	0.252	0.085	-0.212	0.541	0.557	0.670	0.402	-0.314	0.015	-0.073
EVQAD412	1954	-0.160	0.260	0.300	0.180	0.000	0.520	0.650	0.750	0.330	-0.180	0.120	-0.020
EVQAD413	1954	-0.140	0.130	0.200	-0.020	-0.350	0.470	0.460	0.700	0.370	-0.420	0.040	-0.150
EVQAD512	1954	-0.060	0.310	0.350	0.140	-0.080	0.660	0.700	0.780	0.500	-0.440	-0.010	0.030
EV 513	1954	-0.110	0.230	0.250	0.140	-0.210	0.590	0.570	0.550	0.440	-0.210	-0.060	-0.050
EVA10200	1955	-0.026	-0.056	0.161	0.079	0.032	0.374	0.237	0.118	0.202	0.227	0.179	0.084
EVB10170	1955	-0.071	-0.106	0.148	0.099	0.031	0.337	0.200	0.000	0.158	0.198	0.247	0.069
EVB10070	1955	-0.083	-0.120	0.156	0.103	0.010	0.323	0.157	-0.023	0.142	0.185	0.227	0.060
EVF10005	1955	-0.093	-0.132	0.189	0.126	-0.002	0.333	0.147	-0.039	0.190	0.243	0.223	0.060
EVA10340	1955	-0.044	-0.075	0.172	0.104	0.072	0.401	0.328	0.070	0.237	0.297	0.290	0.100
EVA10240	1955	-0.049	-0.081	0.162	0.097	0.062	0.385	0.299	0.058	0.206	0.262	0.278	0.093
EVB10040	1955	-0.087	-0.124	0.168	0.111	0.006	0.327	0.153	-0.029	0.159	0.206	0.225	0.060
EVB10270	1955	-0.061	-0.094	0.146	0.091	0.043	0.352	0.237	0.027	0.158	0.203	0.256	0.078
EVQAD412	1955	-0.040	-0.070	0.230	0.100	0.050	0.450	0.370	0.110	0.250	0.360	0.270	0.120
EVQAD413	1955	-0.050	-0.080	0.050	0.030	0.050	0.290	0.190	0.030	-0.010	0.000	0.240	0.060
EVQAD512	1955	-0.020	-0.050	0.160	0.140	0.150	0.440	0.450	0.100	0.390	0.420	0.380	0.120
EV 513	1955	-0.100	-0.140	0.210	0.140	-0.010	0.340	0.140	-0.050	0.220	0.280	0.220	0.060
EVA10200	1956	0.005	-0.102	0.143	0.095	0.120	0.288	0.389	0.460	0.414	0.191	-0.135	0.028
EVB10170	1956	-0.038	-0.180	0.095	0.067	0.055	0.234	0.378	0.385	0.343	0.130	-0.122	-0.007
EVB10070	1956	-0.043	-0.184	0.053	0.033	0.031	0.193	0.317	0.343	0.297	0.100	-0.127	-0.023
EVF10005	1956	-0.053	-0.169	0.051	0.037	0.006	0.209	0.319	0.341	0.299	0.100	-0.129	-0.033
EVA10340	1956	-0.022	-0.130	0.226	0.182	0.162	0.366	0.575	0.553	0.512	0.225	-0.136	0.036
EVA10240	1956	-0.022	-0.142	0.195	0.153	0.148	0.328	0.526	0.517	0.473	0.202	-0.136	0.028
EVB10040	1956	-0.047	-0.179	0.053	0.035	0.022	0.199	0.317	0.343	0.297	0.100	-0.127	-0.027
EVB10270	1956	-0.028	-0.167	0.130	0.096	0.102	0.259	0.428	0.436	0.390	0.154	-0.130	0.008
EVQAD412	1956	0.000	-0.060	0.270	0.230	0.290	0.390	0.640	0.680	0.610	0.260	-0.190	0.050

cyp03_pit129.EVA

EVQAD413	1956	-0.010	-0.230	0.060	0.020	0.110	0.140	0.310	0.350	0.290	0.100	-0.120	0.010
EVQAD512	1956	-0.040	-0.140	0.360	0.290	0.110	0.550	0.780	0.620	0.630	0.320	-0.080	0.070
EV 513	1956	-0.060	-0.160	0.050	0.040	-0.010	0.220	0.320	0.340	0.300	0.100	-0.130	-0.040
EVA10200	1957	-0.118	-0.114	-0.141	-0.201	0.065	0.170	0.285	0.304	-0.029	-0.148	-0.176	0.007
EVB10170	1957	-0.191	-0.215	-0.224	-0.431	0.088	0.047	0.240	0.251	-0.110	-0.392	-0.246	0.014
EVB10070	1957	-0.204	-0.240	-0.234	-0.431	0.131	0.017	0.190	0.230	-0.117	-0.438	-0.257	0.016
EVF10005	1957	-0.195	-0.246	-0.219	-0.412	0.216	0.019	0.196	0.236	-0.101	-0.488	-0.253	0.043
EVA10340	1957	-0.138	-0.122	-0.182	-0.281	0.066	0.171	0.420	0.327	-0.105	-0.231	-0.180	0.014
EVA10240	1957	-0.152	-0.140	-0.196	-0.303	0.060	0.143	0.377	0.307	-0.114	-0.253	-0.193	0.006
EVB10040	1957	-0.201	-0.242	-0.229	-0.424	0.161	0.017	0.192	0.232	-0.111	-0.456	-0.255	0.026
EVB10270	1957	-0.179	-0.185	-0.219	-0.372	0.059	0.083	0.287	0.269	-0.122	-0.321	-0.225	0.001
EVQAD412	1957	-0.110	-0.050	-0.170	0.040	0.160	0.260	0.510	0.360	-0.160	-0.080	-0.100	-0.010
EVQAD413	1957	-0.230	-0.220	-0.280	-0.490	-0.140	0.010	0.170	0.210	-0.170	-0.280	-0.270	-0.070
EVQAD512	1957	-0.090	-0.090	-0.120	-0.500	-0.010	0.230	0.570	0.400	0.000	-0.260	-0.190	0.080
EV 513	1957	-0.190	-0.250	-0.210	-0.400	0.270	0.020	0.200	0.240	-0.090	-0.520	-0.250	0.060
EVA10200	1958	-0.005	0.064	0.001	-0.070	0.232	0.109	0.123	0.094	-0.086	0.109	-0.099	0.046
EVB10170	1958	-0.015	0.067	-0.025	-0.151	0.342	-0.039	0.132	-0.010	-0.314	0.034	-0.087	0.075
EVB10070	1958	-0.020	0.060	-0.028	-0.179	0.364	-0.093	0.109	-0.048	-0.378	0.029	-0.094	0.077
EVF10005	1958	-0.014	0.060	0.002	-0.210	0.435	-0.109	0.140	-0.006	-0.453	0.048	-0.073	0.079
EVA10340	1958	-0.009	0.078	-0.004	-0.079	0.317	0.128	0.195	0.140	-0.161	0.081	-0.063	0.043
EVA10240	1958	-0.014	0.074	-0.016	-0.089	0.307	0.092	0.168	0.094	-0.182	0.069	-0.075	0.046
EVB10040	1958	-0.018	0.060	-0.017	-0.190	0.390	-0.099	0.120	-0.033	-0.405	0.036	-0.087	0.077
EVB10270	1958	-0.019	0.067	-0.033	-0.119	0.306	0.012	0.129	0.012	-0.244	0.043	-0.092	0.060
EVQAD412	1958	-0.040	0.060	-0.010	-0.040	0.300	0.200	0.150	0.190	-0.100	0.140	-0.080	-0.030
EVQAD413	1958	-0.040	0.060	-0.120	-0.080	0.140	-0.040	0.010	-0.180	-0.140	-0.030	-0.160	0.070
EVQAD512	1958	0.050	0.120	0.070	-0.060	0.380	0.260	0.390	0.340	-0.100	0.090	0.020	0.100
EV 513	1958	-0.010	0.060	0.020	-0.230	0.480	-0.120	0.160	0.020	-0.500	0.060	-0.060	0.080
EVA10200	1959	0.046	-0.102	0.190	0.086	0.040	0.160	0.037	0.339	0.270	0.058	0.009	-0.115
EVB10170	1959	0.043	-0.142	0.218	0.059	-0.024	0.132	-0.028	0.342	0.211	0.038	0.022	-0.233
EVB10070	1959	0.040	-0.144	0.209	0.047	-0.016	0.155	-0.044	0.346	0.203	0.056	0.007	-0.240
EVF10005	1959	0.046	-0.129	0.228	0.037	-0.031	0.201	-0.035	0.361	0.213	0.077	0.009	-0.246
EVA10340	1959	0.048	-0.128	0.241	0.106	-0.002	0.092	0.035	0.327	0.258	-0.019	0.070	-0.170
EVA10240	1959	0.044	-0.135	0.228	0.099	0.004	0.092	0.019	0.326	0.246	-0.012	0.057	-0.177
EVB10040	1959	0.042	-0.139	0.216	0.043	-0.021	0.172	-0.041	0.351	0.207	0.064	0.007	-0.242
EVB10270	1959	0.040	-0.145	0.213	0.078	-0.001	0.104	-0.014	0.330	0.222	0.012	0.033	-0.205

cyp03_pit129.EVA

EVQAD412	1959	0.030	-0.130	0.210	0.150	0.120	0.080	0.070	0.300	0.300	-0.070	0.080	-0.060
EVQAD413	1959	0.020	-0.190	0.150	0.080	0.030	0.010	-0.070	0.300	0.170	-0.010	0.000	-0.220
EVQAD512	1959	0.090	-0.090	0.340	0.100	-0.160	0.100	0.090	0.360	0.280	-0.010	0.130	-0.240
EV 513	1959	0.050	-0.120	0.240	0.030	-0.040	0.230	-0.030	0.370	0.220	0.090	0.010	-0.250
EVA10200	1960	-0.024	0.001	0.173	0.249	0.182	0.222	0.316	0.242	0.052	0.121	0.021	-0.101
EVB10170	1960	-0.036	-0.042	0.188	0.334	0.270	0.144	0.410	0.216	-0.082	0.050	-0.009	-0.260
EVB10070	1960	-0.040	-0.050	0.190	0.336	0.282	0.146	0.426	0.216	-0.109	0.047	-0.032	-0.250
EVF10005	1960	-0.034	-0.056	0.196	0.345	0.324	0.161	0.453	0.231	-0.128	0.049	-0.062	-0.244
EVA10340	1960	-0.036	-0.012	0.179	0.307	0.247	0.174	0.348	0.213	-0.005	0.077	0.061	-0.189
EVA10240	1960	-0.040	-0.017	0.179	0.309	0.241	0.167	0.353	0.209	-0.019	0.072	0.053	-0.194
EVB10040	1960	-0.038	-0.052	0.192	0.339	0.297	0.151	0.436	0.221	-0.116	0.047	-0.043	-0.248
EVB10270	1960	-0.042	-0.030	0.182	0.319	0.244	0.151	0.377	0.207	-0.054	0.059	0.024	-0.224
EVQAD412	1960	-0.070	0.020	0.160	0.250	0.210	0.240	0.260	0.190	0.030	0.120	0.120	0.030
EVQAD413	1960	-0.060	-0.030	0.170	0.310	0.150	0.100	0.340	0.170	-0.050	0.040	0.060	-0.270
EVQAD512	1960	0.020	-0.020	0.200	0.360	0.310	0.140	0.410	0.260	0.040	0.060	0.050	-0.390
EV 513	1960	-0.030	-0.060	0.200	0.350	0.350	0.170	0.470	0.240	-0.140	0.050	-0.080	-0.240
EVA10200	1961	0.063	-0.027	-0.005	0.283	0.160	-0.056	0.102	0.311	0.182	0.149	-0.204	-0.107
EVB10170	1961	0.012	-0.042	-0.081	0.407	0.259	-0.276	0.104	0.308	0.109	0.100	-0.219	-0.169
EVB10070	1961	0.014	-0.043	-0.094	0.422	0.272	-0.324	0.095	0.306	0.090	0.086	-0.224	-0.183
EVF10005	1961	-0.019	-0.041	-0.061	0.470	0.308	-0.401	0.141	0.333	0.084	0.113	-0.215	-0.181
EVA10340	1961	0.004	-0.047	0.010	0.368	0.214	-0.163	0.148	0.321	0.157	0.170	-0.214	-0.123
EVA10240	1961	0.017	-0.048	-0.016	0.363	0.213	-0.171	0.125	0.310	0.146	0.147	-0.219	-0.135
EVB10040	1961	0.002	-0.043	-0.082	0.439	0.285	-0.352	0.112	0.316	0.088	0.096	-0.221	-0.183
EVB10270	1961	0.028	-0.046	-0.066	0.373	0.227	-0.213	0.093	0.298	0.122	0.108	-0.224	-0.158
EVQAD412	1961	0.050	-0.070	0.090	0.300	0.140	-0.090	0.130	0.300	0.160	0.200	-0.240	-0.110
EVQAD413	1961	0.120	-0.050	-0.200	0.270	0.160	-0.080	-0.050	0.220	0.110	0.000	-0.250	-0.190
EVQAD512	1961	-0.110	-0.020	0.070	0.460	0.290	-0.180	0.290	0.400	0.220	0.260	-0.160	-0.070
EV 513	1961	-0.040	-0.040	-0.040	0.500	0.330	-0.450	0.170	0.350	0.080	0.130	-0.210	-0.180
EVA10200	1962	-0.079	0.021	0.138	0.072	0.300	0.126	0.340	0.449	0.060	-0.038	-0.035	0.053
EVB10170	1962	-0.114	0.028	0.199	0.071	0.390	0.069	0.398	0.504	0.003	-0.099	-0.122	0.039
EVB10070	1962	-0.120	0.039	0.215	0.074	0.380	0.096	0.413	0.509	0.022	-0.096	-0.136	0.030
EVF10005	1962	-0.114	0.082	0.261	0.065	0.380	0.129	0.423	0.534	0.070	-0.025	-0.145	0.018
EVA10340	1962	-0.102	0.031	0.153	0.059	0.399	0.024	0.353	0.481	-0.023	-0.057	-0.017	0.051
EVA10240	1962	-0.108	0.021	0.151	0.064	0.394	0.030	0.361	0.477	-0.027	-0.082	-0.032	0.050
EVB10040	1962	-0.118	0.054	0.232	0.071	0.380	0.108	0.417	0.518	0.039	-0.070	-0.139	0.026

cyp03_pit129.EVA

EVB10270	1962	-0.116	0.012	0.163	0.072	0.388	0.047	0.381	0.483	-0.023	-0.116	-0.079	0.046
EVQAD412	1962	-0.120	0.040	0.080	0.060	0.360	0.040	0.330	0.420	-0.030	-0.040	0.150	0.040
EVQAD413	1962	-0.140	-0.100	0.070	0.100	0.380	-0.010	0.380	0.430	-0.130	-0.320	-0.110	0.070
EVQAD512	1962	-0.050	0.070	0.240	0.030	0.470	-0.030	0.330	0.560	0.000	0.060	-0.110	0.070
EV 513	1962	-0.110	0.110	0.290	0.060	0.380	0.150	0.430	0.550	0.100	0.020	-0.150	0.010
EVA10200	1963	0.033	0.124	0.141	-0.002	0.177	0.316	0.132	0.440	0.351	0.409	-0.004	-0.037
EVB10170	1963	0.023	0.131	0.161	-0.081	0.283	0.294	0.179	0.419	0.289	0.437	-0.025	-0.100
EVB10070	1963	0.017	0.127	0.168	-0.090	0.305	0.299	0.162	0.399	0.267	0.436	-0.037	-0.116
EVF10005	1963	0.019	0.123	0.224	-0.096	0.345	0.318	0.198	0.418	0.251	0.451	-0.039	-0.125
EVA10340	1963	0.036	0.140	0.181	-0.017	0.218	0.296	0.204	0.506	0.361	0.452	0.032	-0.044
EVA10240	1963	0.031	0.139	0.164	-0.025	0.222	0.292	0.182	0.482	0.349	0.446	0.022	-0.055
EVB10040	1963	0.017	0.125	0.188	-0.092	0.320	0.306	0.175	0.406	0.261	0.441	-0.037	-0.119
EVB10270	1963	0.024	0.135	0.144	-0.054	0.246	0.288	0.160	0.436	0.317	0.436	-0.005	-0.081
EVQAD412	1963	0.020	0.140	0.190	0.090	0.150	0.310	0.100	0.560	0.410	0.460	0.100	-0.010
EVQAD413	1963	0.010	0.140	-0.010	-0.070	0.180	0.240	0.050	0.340	0.320	0.390	-0.030	-0.090
EVQAD512	1963	0.080	0.150	0.260	-0.080	0.260	0.300	0.430	0.580	0.380	0.480	0.020	-0.020
EV 513	1963	0.020	0.120	0.260	-0.100	0.370	0.330	0.220	0.430	0.240	0.460	-0.040	-0.130
EVA10200	1964	0.052	-0.017	0.001	-0.077	0.163	0.416	0.434	0.144	0.044	0.283	-0.016	0.005
EVB10170	1964	0.037	-0.031	-0.008	-0.095	0.220	0.418	0.474	0.086	0.012	0.305	0.006	-0.066
EVB10070	1964	0.030	-0.034	-0.010	-0.098	0.227	0.420	0.449	0.053	0.022	0.303	0.013	-0.103
EVF10005	1964	0.018	-0.025	0.002	-0.050	0.229	0.426	0.468	0.069	0.076	0.307	0.023	-0.126
EVA10340	1964	0.041	-0.026	-0.017	-0.052	0.190	0.417	0.567	0.173	-0.008	0.292	-0.006	0.038
EVA10240	1964	0.042	-0.031	-0.021	-0.073	0.195	0.416	0.540	0.143	-0.019	0.291	-0.005	0.018
EVB10040	1964	0.026	-0.031	-0.006	-0.081	0.227	0.422	0.456	0.059	0.041	0.305	0.017	-0.111
EVB10270	1964	0.041	-0.035	-0.020	-0.103	0.209	0.416	0.491	0.095	-0.021	0.295	-0.001	-0.029
EVQAD412	1964	0.030	-0.040	-0.070	-0.040	0.160	0.420	0.600	0.140	-0.070	0.240	0.000	0.080
EVQAD413	1964	0.070	-0.060	-0.050	-0.250	0.220	0.400	0.390	0.000	-0.150	0.290	-0.020	-0.030
EVQAD512	1964	0.050	0.010	0.060	0.050	0.190	0.420	0.680	0.370	0.110	0.350	-0.020	0.110
EV 513	1964	0.010	-0.020	0.010	-0.020	0.230	0.430	0.480	0.080	0.110	0.310	0.030	-0.140
EVA10200	1965	-0.043	-0.111	0.042	0.254	-0.106	0.254	0.446	0.438	0.139	0.274	0.032	-0.018
EVB10170	1965	-0.129	-0.234	-0.015	0.329	-0.216	0.218	0.546	0.437	0.072	0.283	0.087	-0.106
EVB10070	1965	-0.146	-0.240	-0.030	0.346	-0.212	0.206	0.552	0.426	0.070	0.296	0.096	-0.135
EVF10005	1965	-0.161	-0.246	-0.036	0.373	-0.254	0.221	0.600	0.441	0.070	0.311	0.105	-0.181
EVA10340	1965	-0.063	-0.168	0.033	0.297	-0.206	0.256	0.551	0.482	0.072	0.253	0.054	-0.034
EVA10240	1965	-0.073	-0.175	0.023	0.300	-0.192	0.242	0.537	0.468	0.071	0.257	0.058	-0.040

cyp03_pit129.EVA

EVB10040	1965	-0.151	-0.242	-0.032	0.356	-0.227	0.211	0.569	0.431	0.070	0.301	0.099	-0.152
EVB10270	1965	-0.102	-0.204	0.001	0.311	-0.186	0.220	0.526	0.443	0.071	0.270	0.073	-0.067
EVQAD412	1965	0.000	-0.040	0.060	0.290	-0.100	0.250	0.530	0.500	0.060	0.240	0.020	0.010
EVQAD413	1965	-0.100	-0.220	-0.010	0.260	-0.080	0.160	0.400	0.380	0.070	0.250	0.070	0.010
EVQAD512	1965	-0.070	-0.260	0.060	0.290	-0.390	0.340	0.640	0.540	0.090	0.240	0.070	0.010
EV 513	1965	-0.170	-0.250	-0.040	0.390	-0.280	0.230	0.630	0.450	0.070	0.320	0.110	-0.210
EVA10200	1966	-0.111	-0.125	0.251	0.025	0.162	0.493	0.299	0.071	0.124	0.153	0.089	-0.136
EVB10170	1966	-0.164	-0.126	0.273	-0.210	0.312	0.544	0.369	0.013	0.063	0.120	0.107	-0.208
EVB10070	1966	-0.173	-0.114	0.280	-0.195	0.367	0.563	0.378	0.039	0.080	0.119	0.093	-0.221
EVF10005	1966	-0.177	-0.105	0.286	-0.235	0.449	0.579	0.428	0.076	0.092	0.144	0.103	-0.196
EVA10340	1966	-0.148	-0.190	0.262	-0.105	0.171	0.490	0.361	-0.035	0.023	0.142	0.171	-0.141
EVA10240	1966	-0.152	-0.180	0.264	-0.096	0.185	0.499	0.350	-0.031	0.031	0.131	0.155	-0.161
EVB10040	1966	-0.175	-0.111	0.282	-0.210	0.397	0.569	0.396	0.052	0.084	0.128	0.097	-0.212
EVB10270	1966	-0.160	-0.152	0.269	-0.131	0.239	0.522	0.344	-0.013	0.048	0.116	0.122	-0.199
EVQAD412	1966	-0.160	-0.270	0.270	0.290	0.080	0.460	0.330	-0.040	0.020	0.150	0.220	-0.100
EVQAD413	1966	-0.160	-0.140	0.260	-0.070	0.110	0.510	0.220	-0.080	0.040	0.040	0.060	-0.300
EVQAD512	1966	-0.110	-0.160	0.240	-0.560	0.180	0.470	0.450	-0.060	-0.020	0.190	0.210	-0.070
EV 513	1966	-0.180	-0.100	0.290	-0.260	0.500	0.590	0.460	0.100	0.100	0.160	0.110	-0.180
EVA10200	1967	0.095	0.053	0.218	0.007	-0.106	0.407	0.212	0.437	0.146	0.147	0.066	-0.142
EVB10170	1967	0.094	0.044	0.266	-0.027	-0.241	0.436	0.245	0.465	0.116	0.151	0.105	-0.295
EVB10070	1967	0.087	0.040	0.276	-0.024	-0.279	0.441	0.240	0.456	0.156	0.205	0.110	-0.313
EVF10005	1967	0.089	0.046	0.303	-0.009	-0.316	0.514	0.246	0.477	0.177	0.251	0.122	-0.311
EVA10340	1967	0.113	0.064	0.241	-0.004	-0.107	0.474	0.238	0.489	0.009	0.031	0.106	-0.172
EVA10240	1967	0.107	0.057	0.240	-0.009	-0.126	0.449	0.235	0.476	0.031	0.053	0.104	-0.194
EVB10040	1967	0.087	0.042	0.286	-0.019	-0.292	0.467	0.242	0.464	0.164	0.222	0.114	-0.313
EVB10270	1967	0.097	0.047	0.246	-0.022	-0.184	0.417	0.235	0.459	0.081	0.106	0.101	-0.252
EVQAD412	1967	0.110	0.070	0.210	0.050	0.020	0.490	0.180	0.460	-0.020	0.030	0.120	-0.010
EVQAD413	1967	0.080	0.020	0.190	-0.070	-0.160	0.210	0.220	0.390	0.090	0.060	0.070	-0.320
EVQAD512	1967	0.150	0.090	0.280	-0.030	-0.130	0.590	0.320	0.590	-0.090	-0.100	0.100	-0.220
EV 513	1967	0.090	0.050	0.320	0.000	-0.340	0.560	0.250	0.490	0.190	0.280	0.130	-0.310
EVA10200	1968	-0.166	0.045	-0.026	0.055	-0.028	0.086	0.236	0.389	-0.008	0.195	-0.190	0.035
EVB10170	1968	-0.270	0.028	0.049	-0.065	-0.104	0.052	0.272	0.389	-0.173	0.120	-0.246	0.001
EVB10070	1968	-0.302	0.024	0.072	-0.092	-0.073	0.062	0.266	0.373	-0.212	0.103	-0.256	-0.010
EVF10005	1968	-0.350	-0.003	0.120	-0.122	0.015	0.104	0.275	0.389	-0.242	0.113	-0.265	-0.016
EVA10340	1968	-0.216	0.016	-0.059	0.066	-0.037	0.029	0.270	0.440	-0.065	0.207	-0.207	0.037

cyp03_pit129.EVA

EVA10240	1968	-0.220	0.024	-0.052	0.049	-0.058	0.022	0.265	0.422	-0.085	0.187	-0.213	0.030
EVB10040	1968	-0.319	0.014	0.089	-0.103	-0.041	0.077	0.269	0.379	-0.223	0.107	-0.259	-0.012
EVB10270	1968	-0.239	0.035	-0.012	-0.007	-0.101	0.025	0.263	0.393	-0.133	0.143	-0.230	0.014
EVQAD412	1968	-0.220	0.000	-0.230	0.240	0.190	-0.020	0.220	0.430	-0.020	0.290	-0.170	0.060
EVQAD413	1968	-0.150	0.110	-0.080	0.000	-0.350	-0.070	0.240	0.320	-0.120	0.070	-0.230	0.010
EVQAD512	1968	-0.180	-0.010	0.080	-0.020	-0.170	0.110	0.350	0.550	0.000	0.230	-0.210	0.050
EV 513	1968	-0.380	-0.020	0.150	-0.140	0.070	0.130	0.280	0.400	-0.260	0.120	-0.270	-0.020
EVA10200	1969	0.021	-0.003	0.041	0.106	0.068	0.416	0.476	0.511	0.274	0.067	-0.071	-0.144
EVB10170	1969	0.003	-0.021	-0.003	0.089	0.104	0.447	0.548	0.518	0.258	0.006	-0.205	-0.242
EVB10070	1969	0.008	-0.032	-0.016	0.078	0.126	0.449	0.536	0.523	0.256	0.016	-0.252	-0.238
EVF10005	1969	0.064	-0.062	-0.049	0.036	0.135	0.480	0.551	0.521	0.265	0.025	-0.306	-0.208
EVA10340	1969	0.048	-0.025	0.001	0.095	0.040	0.450	0.590	0.515	0.252	-0.013	-0.039	-0.191
EVA10240	1969	0.027	-0.021	0.005	0.102	0.054	0.440	0.576	0.519	0.250	-0.009	-0.060	-0.204
EVB10040	1969	0.028	-0.043	-0.028	0.063	0.129	0.460	0.541	0.523	0.259	0.019	-0.271	-0.227
EVB10270	1969	-0.004	-0.014	0.009	0.107	0.084	0.432	0.552	0.522	0.250	0.000	-0.129	-0.232
EVQAD412	1969	0.100	-0.070	-0.020	0.100	0.020	0.420	0.590	0.550	0.220	0.000	0.130	-0.090
EVQAD413	1969	-0.170	0.060	0.090	0.210	0.100	0.350	0.490	0.530	0.230	-0.010	-0.080	-0.330
EVQAD512	1969	0.100	0.000	0.000	0.050	-0.020	0.530	0.670	0.460	0.300	-0.050	-0.090	-0.230
EV 513	1969	0.100	-0.080	-0.070	0.010	0.140	0.500	0.560	0.520	0.270	0.030	-0.340	-0.190
EVA10200	1970	0.077	-0.044	0.113	0.040	0.221	0.291	0.332	0.345	0.193	-0.057	0.043	0.040
EVB10170	1970	0.101	-0.153	0.082	0.019	0.274	0.268	0.292	0.335	0.167	-0.235	0.059	0.017
EVB10070	1970	0.106	-0.150	0.086	0.016	0.292	0.256	0.244	0.331	0.184	-0.246	0.046	-0.003
EVF10005	1970	0.115	-0.144	0.107	0.037	0.322	0.271	0.217	0.398	0.163	-0.273	0.055	-0.007
EVA10340	1970	0.072	-0.091	0.107	0.062	0.259	0.303	0.437	0.405	0.078	-0.171	0.112	0.068
EVA10240	1970	0.075	-0.098	0.099	0.049	0.260	0.289	0.409	0.375	0.102	-0.174	0.098	0.055
EVB10040	1970	0.109	-0.148	0.094	0.024	0.303	0.261	0.234	0.355	0.177	-0.256	0.049	-0.005
EVB10270	1970	0.087	-0.126	0.085	0.025	0.263	0.268	0.342	0.328	0.149	-0.198	0.071	0.030
EVQAD412	1970	0.030	0.060	0.160	0.110	0.300	0.290	0.510	0.450	0.010	-0.050	0.140	0.070
EVQAD413	1970	0.080	-0.170	0.020	-0.050	0.200	0.210	0.330	0.120	0.250	-0.160	0.020	0.010
EVQAD512	1970	0.100	-0.210	0.090	0.080	0.210	0.390	0.520	0.520	0.020	-0.280	0.160	0.140
EV 513	1970	0.120	-0.140	0.120	0.050	0.340	0.280	0.200	0.440	0.150	-0.290	0.060	-0.010
EVA10200	1971	0.101	0.000	0.229	0.214	0.110	0.489	0.020	0.199	0.260	0.171	0.004	-0.278
EVB10170	1971	0.126	-0.030	0.227	0.240	0.157	0.492	-0.022	0.145	0.226	0.081	-0.026	-0.285
EVB10070	1971	0.123	-0.043	0.216	0.233	0.163	0.480	-0.022	0.127	0.224	0.100	-0.030	-0.261
EVF10005	1971	0.139	-0.041	0.231	0.243	0.186	0.474	0.047	0.129	0.209	0.112	-0.030	-0.236

EVA10340	1971	0.130	0.010	0.283	0.278	0.149	0.526	0.044	0.187	0.209	0.093	0.026	-0.388
EVA10240	1971	0.123	0.000	0.268	0.267	0.145	0.519	0.015	0.174	0.215	0.096	0.019	-0.374
EVB10040	1971	0.129	-0.043	0.221	0.237	0.171	0.478	0.003	0.127	0.219	0.104	-0.030	-0.252
EVB10270	1971	0.117	-0.021	0.238	0.247	0.145	0.503	-0.029	0.152	0.225	0.092	-0.005	-0.330
EVQAD412	1971	0.100	0.020	0.320	0.310	0.130	0.540	0.100	0.170	0.180	0.220	0.120	-0.510
EVQAD413	1971	0.070	-0.050	0.170	0.200	0.090	0.500	-0.240	0.120	0.270	0.060	-0.030	-0.340
EVQAD512	1971	0.200	0.060	0.330	0.300	0.190	0.550	0.140	0.280	0.210	-0.060	-0.030	-0.340
EV 513	1971	0.150	-0.040	0.240	0.250	0.200	0.470	0.090	0.130	0.200	0.120	-0.030	-0.220
EVA10200	1972	-0.038	0.171	0.202	0.206	0.210	0.246	0.299	0.440	0.114	-0.140	-0.176	-0.066
EVB10170	1972	-0.156	0.211	0.207	0.225	0.274	0.158	0.268	0.446	0.057	-0.245	-0.225	-0.136
EVB10070	1972	-0.182	0.210	0.187	0.207	0.276	0.138	0.240	0.446	0.053	-0.257	-0.240	-0.147
EVF10005	1972	-0.230	0.216	0.183	0.191	0.291	0.108	0.240	0.455	0.069	-0.259	-0.228	-0.143
EVA10340	1972	-0.078	0.208	0.254	0.265	0.271	0.213	0.379	0.452	0.067	-0.228	-0.155	-0.082
EVA10240	1972	-0.082	0.206	0.241	0.258	0.268	0.207	0.355	0.449	0.059	-0.235	-0.173	-0.094
EVB10040	1972	-0.199	0.212	0.185	0.201	0.281	0.127	0.240	0.449	0.059	-0.257	-0.236	-0.145
EVB10270	1972	-0.111	0.205	0.218	0.241	0.266	0.186	0.301	0.445	0.050	-0.244	-0.210	-0.120
EVQAD412	1972	0.010	0.180	0.240	0.270	0.260	0.250	0.460	0.460	0.040	-0.260	-0.110	-0.030
EVQAD413	1972	-0.030	0.190	0.200	0.260	0.230	0.230	0.240	0.420	0.000	-0.250	-0.280	-0.160
EVQAD512	1972	-0.140	0.250	0.340	0.300	0.300	0.210	0.430	0.460	0.140	-0.160	-0.100	-0.070
EV 513	1972	-0.260	0.220	0.180	0.180	0.300	0.090	0.240	0.460	0.080	-0.260	-0.220	-0.140
EVA10200	1973	-0.062	0.045	-0.047	-0.084	0.218	0.039	0.216	0.433	-0.130	-0.054	-0.005	0.015
EVB10170	1973	-0.129	0.062	-0.081	-0.061	0.332	-0.074	0.159	0.460	-0.260	-0.248	-0.001	0.016
EVB10070	1973	-0.140	0.069	-0.081	-0.036	0.349	-0.074	0.117	0.459	-0.251	-0.235	-0.014	0.007
EVF10005	1973	-0.152	0.094	-0.038	0.041	0.380	-0.065	0.094	0.484	-0.232	-0.189	0.019	0.009
EVA10340	1973	-0.097	0.051	-0.051	-0.090	0.275	-0.056	0.282	0.470	-0.274	-0.153	0.078	0.023
EVA10240	1973	-0.101	0.047	-0.069	-0.100	0.278	-0.060	0.258	0.460	-0.274	-0.171	0.053	0.018
EVB10040	1973	-0.144	0.078	-0.066	-0.008	0.360	-0.071	0.109	0.468	-0.244	-0.218	-0.002	0.007
EVB10270	1973	-0.114	0.048	-0.091	-0.100	0.300	-0.070	0.201	0.450	-0.271	-0.221	0.009	0.012
EVQAD412	1973	-0.070	0.030	-0.050	-0.110	0.200	-0.020	0.340	0.450	-0.270	0.090	0.130	-0.020
EVQAD413	1973	-0.100	-0.010	-0.220	-0.280	0.250	-0.100	0.190	0.380	-0.310	-0.380	-0.120	0.000
EVQAD512	1973	-0.100	0.090	0.040	-0.020	0.330	-0.070	0.360	0.540	-0.280	-0.310	0.160	0.100
EV 513	1973	-0.160	0.110	-0.010	0.090	0.400	-0.060	0.080	0.500	-0.220	-0.160	0.040	0.010
EVA10200	1974	-0.139	0.142	0.227	0.143	0.128	0.137	0.370	0.091	-0.208	0.076	-0.124	0.024
EVB10170	1974	-0.233	0.159	0.265	0.207	0.134	0.070	0.387	-0.008	-0.331	0.005	-0.119	0.061
EVB10070	1974	-0.263	0.150	0.266	0.197	0.136	0.057	0.356	-0.017	-0.343	0.000	-0.121	0.066

cyp03_pit129.EVA

EVF10005	1974	-0.279	0.150	0.281	0.187	0.151	0.139	0.365	-0.019	-0.341	-0.006	-0.096	0.087
EVA10340	1974	-0.152	0.178	0.260	0.185	0.163	0.180	0.490	0.022	-0.330	0.020	-0.103	0.027
EVA10240	1974	-0.169	0.172	0.256	0.187	0.156	0.137	0.462	0.016	-0.336	0.018	-0.113	0.026
EVB10040	1974	-0.269	0.150	0.271	0.193	0.141	0.087	0.359	-0.017	-0.343	-0.002	-0.112	0.074
EVB10270	1974	-0.206	0.162	0.255	0.196	0.141	0.068	0.410	0.001	-0.340	0.012	-0.126	0.037
EVQAD412	1974	-0.130	0.170	0.230	0.090	0.220	0.240	0.520	0.040	-0.410	0.030	-0.110	-0.050
EVQAD413	1974	-0.210	0.150	0.220	0.230	0.090	-0.200	0.330	-0.010	-0.350	0.020	-0.200	0.000
EVQAD512	1974	-0.080	0.220	0.310	0.280	0.140	0.350	0.610	0.040	-0.210	0.020	-0.040	0.110
EV 513	1974	-0.290	0.150	0.290	0.180	0.160	0.190	0.370	-0.020	-0.340	-0.010	-0.080	0.100
EVA10200	1975	0.074	0.033	0.073	0.120	-0.021	0.171	0.303	0.357	0.316	0.286	-0.003	-0.022
EVB10170	1975	0.068	-0.051	0.080	0.103	0.009	0.110	0.354	0.342	0.299	0.218	-0.001	-0.037
EVB10070	1975	0.054	-0.073	0.070	0.097	0.009	0.094	0.346	0.343	0.303	0.194	-0.023	-0.041
EVF10005	1975	0.039	-0.077	0.070	0.087	0.034	0.079	0.373	0.359	0.319	0.173	-0.021	-0.022
EVA10340	1975	0.087	0.056	0.077	0.133	0.001	0.130	0.379	0.357	0.300	0.304	0.070	-0.020
EVA10240	1975	0.084	0.037	0.073	0.131	-0.006	0.126	0.364	0.351	0.296	0.291	0.052	-0.030
EVB10040	1975	0.049	-0.075	0.070	0.093	0.018	0.089	0.356	0.349	0.309	0.187	-0.023	-0.034
EVB10270	1975	0.076	-0.014	0.072	0.119	-0.008	0.117	0.346	0.340	0.293	0.253	0.016	-0.042
EVQAD412	1975	0.060	0.170	0.010	0.180	-0.050	0.100	0.350	0.370	0.300	0.380	0.090	-0.030
EVQAD413	1975	0.100	-0.060	0.070	0.130	-0.070	0.140	0.260	0.290	0.250	0.260	-0.030	-0.100
EVQAD512	1975	0.140	0.050	0.170	0.100	0.090	0.190	0.490	0.380	0.320	0.300	0.150	0.040
EV 513	1975	0.030	-0.080	0.070	0.080	0.050	0.070	0.390	0.370	0.330	0.160	-0.020	-0.010
EVA10200	1976	0.091	0.098	-0.118	0.059	-0.031	0.132	0.197	0.429	0.044	0.011	0.042	-0.045
EVB10170	1976	0.018	0.087	-0.194	0.098	-0.040	-0.034	0.160	0.385	-0.054	-0.030	0.071	-0.132
EVB10070	1976	-0.006	0.079	-0.217	0.127	-0.040	-0.054	0.141	0.364	-0.051	-0.018	0.060	-0.147
EVF10005	1976	-0.021	0.098	-0.207	0.129	-0.040	-0.045	0.110	0.337	-0.032	0.012	0.066	-0.143
EVA10340	1976	0.119	0.137	-0.127	0.001	-0.044	0.095	0.201	0.445	-0.043	-0.060	0.106	-0.049
EVA10240	1976	0.102	0.122	-0.148	0.023	-0.043	0.070	0.198	0.438	-0.049	-0.061	0.095	-0.066
EVB10040	1976	-0.011	0.086	-0.213	0.127	-0.040	-0.051	0.130	0.354	-0.044	-0.007	0.062	-0.145
EVB10270	1976	0.057	0.095	-0.184	0.071	-0.042	0.008	0.183	0.414	-0.057	-0.052	0.076	-0.106
EVQAD412	1976	0.220	0.180	-0.130	-0.050	-0.050	0.260	0.220	0.490	-0.020	-0.090	0.110	0.040
EVQAD413	1976	0.040	0.020	-0.250	0.120	-0.040	-0.080	0.240	0.450	-0.110	-0.110	0.040	-0.160
EVQAD512	1976	0.110	0.170	-0.010	-0.070	-0.040	0.060	0.200	0.440	-0.040	-0.030	0.160	-0.050
EV 513	1976	-0.030	0.110	-0.200	0.130	-0.040	-0.040	0.090	0.320	-0.020	0.030	0.070	-0.140
EVA10200	1977	-0.077	0.055	0.033	0.174	0.250	0.284	0.350	0.250	0.258	0.286	-0.167	0.093
EVB10170	1977	-0.109	0.061	0.009	0.293	0.338	0.232	0.360	0.167	0.188	0.273	-0.176	0.066

cyp03_pit129.EVA

EVB10070	1977	-0.114	0.066	0.009	0.323	0.340	0.233	0.333	0.141	0.173	0.273	-0.174	0.053
EVF10005	1977	-0.105	0.087	0.040	0.346	0.346	0.231	0.331	0.104	0.183	0.277	-0.147	0.057
EVA10340	1977	-0.101	0.060	0.032	0.175	0.317	0.241	0.444	0.223	0.258	0.284	-0.164	0.124
EVA10240	1977	-0.106	0.055	0.020	0.193	0.318	0.241	0.424	0.217	0.241	0.281	-0.173	0.111
EVB10040	1977	-0.111	0.074	0.020	0.331	0.342	0.233	0.333	0.128	0.177	0.275	-0.164	0.055
EVB10270	1977	-0.113	0.052	0.003	0.245	0.326	0.238	0.382	0.196	0.205	0.276	-0.184	0.082
EVQAD412	1977	-0.120	0.060	0.040	0.050	0.270	0.270	0.470	0.240	0.310	0.300	-0.160	0.170
EVQAD413	1977	-0.140	0.000	-0.090	0.250	0.320	0.240	0.340	0.260	0.140	0.260	-0.260	0.040
EVQAD512	1977	-0.050	0.080	0.090	0.200	0.360	0.210	0.530	0.240	0.300	0.280	-0.120	0.150
EV 513	1977	-0.100	0.100	0.060	0.360	0.350	0.230	0.330	0.080	0.190	0.280	-0.130	0.060
EVA10200	1978	-0.137	-0.018	0.058	0.214	0.095	0.430	0.487	0.488	0.299	0.330	-0.371	-0.078
EVB10170	1978	-0.242	-0.015	0.058	0.275	0.135	0.446	0.494	0.456	0.216	0.281	-0.414	-0.146
EVB10070	1978	-0.263	-0.004	0.059	0.276	0.137	0.453	0.481	0.447	0.207	0.264	-0.422	-0.167
EVF10005	1978	-0.273	0.011	0.084	0.297	0.139	0.463	0.456	0.431	0.197	0.255	-0.359	-0.169
EVA10340	1978	-0.168	-0.049	0.059	0.278	0.115	0.430	0.553	0.501	0.269	0.359	-0.355	-0.078
EVA10240	1978	-0.182	-0.045	0.051	0.271	0.118	0.431	0.549	0.497	0.263	0.346	-0.385	-0.094
EVB10040	1978	-0.267	0.001	0.068	0.284	0.137	0.457	0.472	0.441	0.203	0.261	-0.400	-0.167
EVB10270	1978	-0.216	-0.031	0.046	0.265	0.126	0.437	0.526	0.480	0.240	0.310	-0.426	-0.127
EVQAD412	1978	-0.110	-0.080	0.030	0.260	0.080	0.420	0.640	0.570	0.350	0.440	-0.360	-0.050
EVQAD413	1978	-0.230	-0.050	-0.020	0.210	0.130	0.420	0.560	0.500	0.240	0.290	-0.620	-0.160
EVQAD512	1978	-0.150	-0.040	0.130	0.330	0.140	0.430	0.490	0.450	0.220	0.350	-0.190	-0.020
EV 513	1978	-0.280	0.020	0.100	0.310	0.140	0.470	0.440	0.420	0.190	0.250	-0.320	-0.170
EVA10200	1979	-0.142	-0.081	0.012	0.043	-0.046	0.283	0.022	0.267	0.140	0.141	-0.007	-0.061
EVB10170	1979	-0.341	-0.140	-0.054	0.046	0.003	0.261	-0.053	0.286	0.022	0.128	-0.014	-0.099
EVB10070	1979	-0.392	-0.147	-0.061	0.045	0.025	0.239	-0.078	0.302	0.014	0.123	-0.046	-0.100
EVF10005	1979	-0.446	-0.137	-0.024	0.091	0.065	0.258	-0.042	0.350	0.005	0.146	-0.061	-0.100
EVA10340	1979	-0.166	-0.099	0.023	0.089	-0.062	0.323	0.066	0.250	0.069	0.140	0.068	-0.097
EVA10240	1979	-0.190	-0.109	0.000	0.070	-0.058	0.301	0.031	0.245	0.063	0.129	0.050	-0.098
EVB10040	1979	-0.411	-0.143	-0.048	0.062	0.040	0.246	-0.065	0.319	0.011	0.131	-0.051	-0.100
EVB10270	1979	-0.264	-0.131	-0.044	0.040	-0.034	0.265	-0.034	0.253	0.043	0.117	0.011	-0.099
EVQAD412	1979	0.000	-0.060	0.100	0.120	-0.130	0.300	0.130	0.200	0.140	0.100	0.080	-0.100
EVQAD413	1979	-0.220	-0.180	-0.180	-0.100	-0.100	0.180	-0.190	0.150	0.040	0.050	0.000	-0.100
EVQAD512	1979	-0.200	-0.080	0.070	0.160	-0.020	0.470	0.190	0.320	0.030	0.240	0.160	-0.090
EV 513	1979	-0.480	-0.130	0.000	0.120	0.090	0.270	-0.020	0.380	0.000	0.160	-0.070	-0.100
EVA10200	1980	-0.074	0.115	0.112	0.100	0.034	0.282	0.582	0.589	0.115	0.167	0.003	0.076

cyp03_pit129.EVA

EVB10170	1980	-0.077	0.160	0.067	0.111	0.062	0.300	0.654	0.597	0.111	0.152	-0.005	0.084
EVB10070	1980	-0.074	0.162	0.044	0.090	0.034	0.299	0.657	0.590	0.128	0.149	-0.013	0.090
EVF10005	1980	-0.047	0.192	0.035	0.078	0.013	0.330	0.659	0.584	0.197	0.174	-0.017	0.102
EVA10340	1980	-0.091	0.155	0.138	0.148	0.087	0.293	0.669	0.636	0.081	0.166	0.033	0.074
EVA10240	1980	-0.097	0.147	0.123	0.139	0.079	0.283	0.668	0.631	0.070	0.156	0.027	0.074
EVB10040	1980	-0.064	0.173	0.041	0.086	0.027	0.310	0.657	0.588	0.153	0.158	-0.015	0.094
EVB10270	1980	-0.096	0.143	0.089	0.121	0.067	0.279	0.661	0.614	0.071	0.143	0.010	0.076
EVQAD412	1980	-0.140	0.120	0.170	0.120	0.000	0.220	0.720	0.690	0.020	0.150	0.080	0.070
EVQAD413	1980	-0.160	0.070	0.070	0.130	0.100	0.200	0.650	0.610	-0.090	0.070	0.000	0.050
EVQAD512	1980	-0.010	0.230	0.190	0.230	0.230	0.420	0.620	0.610	0.200	0.240	0.020	0.080
EV 513	1980	-0.030	0.210	0.030	0.070	0.000	0.350	0.660	0.580	0.240	0.190	-0.020	0.110
EVA10200	1981	0.120	0.027	0.116	0.197	-0.223	0.246	0.247	0.337	0.317	-0.166	0.080	0.168
EVB10170	1981	0.099	-0.018	0.078	0.229	-0.308	0.127	0.256	0.271	0.236	-0.329	0.054	0.180
EVB10070	1981	0.094	-0.034	0.070	0.224	-0.314	0.117	0.245	0.243	0.217	-0.322	0.034	0.173
EVF10005	1981	0.085	-0.025	0.076	0.215	-0.281	0.107	0.291	0.253	0.201	-0.266	0.019	0.171
EVA10340	1981	0.124	0.054	0.123	0.237	-0.239	0.198	0.332	0.385	0.307	-0.256	0.143	0.202
EVA10240	1981	0.121	0.037	0.113	0.236	-0.260	0.190	0.304	0.357	0.296	-0.278	0.129	0.197
EVB10040	1981	0.091	-0.031	0.072	0.221	-0.302	0.113	0.262	0.247	0.211	-0.302	0.029	0.173
EVB10270	1981	0.111	0.000	0.090	0.234	-0.299	0.159	0.259	0.300	0.265	-0.321	0.090	0.187
EVQAD412	1981	0.160	0.110	0.170	0.230	-0.170	0.320	0.370	0.460	0.380	-0.120	0.240	0.210
EVQAD413	1981	0.120	-0.060	0.050	0.250	-0.420	0.150	0.100	0.210	0.270	-0.500	0.080	0.180
EVQAD512	1981	0.100	0.090	0.130	0.250	-0.200	0.120	0.440	0.460	0.290	-0.280	0.120	0.220
EV 513	1981	0.080	-0.020	0.080	0.210	-0.260	0.100	0.320	0.260	0.190	-0.230	0.010	0.170
EVA10200	1982	-0.033	-0.018	0.158	0.057	0.071	0.068	0.311	0.341	0.368	0.032	-0.335	-0.348
EVB10170	1982	-0.076	-0.050	0.148	0.001	-0.003	-0.050	0.368	0.371	0.343	-0.062	-0.393	-0.448
EVB10070	1982	-0.084	-0.057	0.143	-0.020	-0.011	-0.044	0.369	0.369	0.330	-0.077	-0.408	-0.491
EVF10005	1982	-0.069	-0.047	0.141	-0.026	0.008	-0.011	0.388	0.394	0.336	-0.073	-0.378	-0.466
EVA10340	1982	-0.034	-0.017	0.162	0.090	0.103	-0.007	0.358	0.362	0.390	-0.004	-0.334	-0.330
EVA10240	1982	-0.047	-0.027	0.159	0.073	0.083	-0.019	0.354	0.354	0.377	-0.018	-0.356	-0.369
EVB10040	1982	-0.079	-0.053	0.143	-0.022	-0.004	-0.032	0.376	0.378	0.332	-0.075	-0.397	-0.482
EVB10270	1982	-0.070	-0.045	0.153	0.032	0.031	-0.045	0.354	0.352	0.353	-0.047	-0.391	-0.435
EVQAD412	1982	-0.010	0.000	0.170	0.170	0.280	0.080	0.320	0.290	0.410	0.030	-0.330	-0.360
EVQAD413	1982	-0.130	-0.090	0.150	0.000	-0.070	-0.150	0.310	0.290	0.310	-0.090	-0.500	-0.570
EVQAD512	1982	0.010	0.020	0.170	0.100	0.030	-0.030	0.420	0.480	0.440	0.040	-0.220	-0.080
EV 513	1982	-0.060	-0.040	0.140	-0.030	0.020	0.010	0.400	0.410	0.340	-0.070	-0.360	-0.450

cyp03_pit129.EVA

EVA10200	1983	0.067	-0.032	0.121	0.186	-0.057	0.143	0.294	0.345	0.375	0.158	-0.077	-0.145
EVB10170	1983	0.066	-0.166	0.114	0.248	-0.103	0.037	0.328	0.285	0.342	0.146	-0.131	-0.237
EVB10070	1983	0.056	-0.196	0.117	0.246	-0.113	0.036	0.325	0.277	0.333	0.146	-0.156	-0.266
EVF10005	1983	0.065	-0.223	0.119	0.279	-0.129	0.051	0.383	0.254	0.331	0.155	-0.165	-0.275
EVA10340	1983	0.093	-0.039	0.105	0.264	-0.076	0.081	0.386	0.312	0.377	0.132	-0.036	-0.150
EVA10240	1983	0.083	-0.057	0.106	0.251	-0.078	0.072	0.360	0.313	0.370	0.131	-0.054	-0.169
EVB10040	1983	0.059	-0.206	0.117	0.258	-0.119	0.041	0.346	0.269	0.333	0.149	-0.159	-0.269
EVB10270	1983	0.067	-0.112	0.110	0.236	-0.088	0.049	0.321	0.305	0.354	0.135	-0.099	-0.211
EVQAD412	1983	0.080	0.110	0.100	0.240	-0.050	0.160	0.420	0.360	0.410	0.090	0.040	-0.120
EVQAD413	1983	0.030	-0.110	0.110	0.140	-0.060	-0.010	0.140	0.350	0.340	0.120	-0.130	-0.240
EVQAD512	1983	0.160	-0.090	0.100	0.360	-0.090	0.050	0.490	0.260	0.380	0.180	-0.010	-0.070
EV 513	1983	0.070	-0.240	0.120	0.300	-0.140	0.060	0.420	0.240	0.330	0.160	-0.170	-0.280
EVA10200	1984	-0.005	-0.045	-0.010	0.207	0.062	0.397	0.223	0.327	0.193	-0.424	-0.068	-0.034
EVB10170	1984	-0.022	-0.170	-0.056	0.281	0.111	0.374	0.253	0.280	0.145	-0.660	-0.163	-0.049
EVB10070	1984	-0.020	-0.197	-0.048	0.285	0.115	0.373	0.238	0.262	0.125	-0.707	-0.196	-0.060
EVF10005	1984	-0.014	-0.193	0.006	0.331	0.173	0.377	0.294	0.292	0.165	-0.684	-0.205	-0.048
EVA10340	1984	-0.027	-0.026	-0.019	0.289	0.131	0.395	0.327	0.372	0.224	-0.484	-0.011	-0.023
EVA10240	1984	-0.028	-0.055	-0.037	0.276	0.112	0.391	0.294	0.345	0.195	-0.531	-0.040	-0.035
EVB10040	1984	-0.018	-0.195	-0.029	0.302	0.136	0.375	0.258	0.273	0.140	-0.699	-0.199	-0.056
EVB10270	1984	-0.027	-0.123	-0.064	0.263	0.091	0.381	0.247	0.295	0.147	-0.622	-0.110	-0.051
EVQAD412	1984	-0.040	0.130	0.040	0.270	0.120	0.430	0.320	0.430	0.230	-0.410	0.140	-0.050
EVQAD413	1984	-0.040	-0.210	-0.220	0.140	-0.070	0.360	0.060	0.170	0.000	-0.780	-0.170	-0.100
EVQAD512	1984	-0.010	-0.030	0.010	0.380	0.240	0.380	0.510	0.460	0.380	-0.300	-0.010	0.070
EV 513	1984	-0.010	-0.190	0.040	0.360	0.210	0.380	0.330	0.310	0.190	-0.670	-0.210	-0.040
EVA10200	1985	0.016	-0.059	0.049	0.053	0.126	0.297	0.264	0.532	0.288	-0.113	-0.221	-0.031
EVB10170	1985	-0.030	-0.100	0.041	0.085	0.222	0.307	0.234	0.562	0.236	-0.317	-0.337	-0.067
EVB10070	1985	-0.043	-0.109	0.045	0.086	0.222	0.315	0.214	0.556	0.230	-0.345	-0.347	-0.060
EVF10005	1985	-0.047	-0.128	0.085	0.119	0.258	0.373	0.205	0.571	0.242	-0.391	-0.343	-0.048
EVA10340	1985	0.018	-0.093	0.053	0.091	0.204	0.314	0.310	0.592	0.279	-0.222	-0.245	-0.066
EVA10240	1985	0.008	-0.092	0.041	0.080	0.194	0.298	0.296	0.581	0.268	-0.230	-0.260	-0.067
EVB10040	1985	-0.045	-0.116	0.060	0.098	0.235	0.336	0.211	0.561	0.234	-0.362	-0.345	-0.056
EVB10270	1985	-0.014	-0.093	0.028	0.070	0.194	0.284	0.260	0.564	0.245	-0.267	-0.303	-0.069
EVQAD412	1985	0.050	-0.110	0.050	0.060	0.110	0.300	0.370	0.600	0.320	-0.110	-0.100	-0.040
EVQAD413	1985	-0.030	-0.050	-0.080	-0.020	0.110	0.130	0.240	0.510	0.190	-0.200	-0.360	-0.100
EVQAD512	1985	0.040	-0.080	0.120	0.180	0.350	0.410	0.330	0.640	0.300	-0.290	-0.310	-0.090

cyp03_pit129.EVA

EV 513	1985	-0.050	-0.140	0.110	0.140	0.280	0.410	0.200	0.580	0.250	-0.420	-0.340	-0.040
EVA10200	1986	0.172	0.043	0.230	-0.076	0.012	0.055	0.403	0.429	0.130	-0.025	-0.234	-0.096
EVB10170	1986	0.194	0.058	0.280	-0.115	-0.054	-0.132	0.480	0.370	-0.015	-0.138	-0.364	-0.208
EVB10070	1986	0.190	0.063	0.285	-0.098	-0.056	-0.195	0.479	0.351	-0.028	-0.156	-0.393	-0.223
EVF10005	1986	0.184	0.061	0.325	-0.056	-0.071	-0.259	0.504	0.332	0.020	-0.177	-0.391	-0.227
EVA10340	1986	0.195	0.023	0.282	-0.109	-0.014	0.025	0.486	0.446	0.122	-0.097	-0.218	-0.123
EVA10240	1986	0.195	0.030	0.271	-0.115	-0.014	0.002	0.477	0.436	0.087	-0.102	-0.247	-0.138
EVB10040	1986	0.188	0.063	0.300	-0.083	-0.061	-0.218	0.488	0.344	-0.011	-0.164	-0.393	-0.225
EVB10270	1986	0.195	0.047	0.263	-0.124	-0.029	-0.065	0.469	0.403	0.013	-0.119	-0.317	-0.177
EVQAD412	1986	0.180	-0.020	0.260	-0.050	0.090	0.090	0.460	0.530	0.290	-0.080	-0.070	-0.020
EVQAD413	1986	0.210	0.070	0.160	-0.230	-0.010	0.010	0.400	0.410	-0.180	-0.090	-0.400	-0.210
EVQAD512	1986	0.210	0.030	0.360	-0.140	-0.120	0.100	0.560	0.420	0.140	-0.080	-0.210	-0.150
EV 513	1986	0.180	0.060	0.350	-0.030	-0.080	-0.300	0.520	0.320	0.050	-0.190	-0.390	-0.230
EVA10200	1987	0.030	-0.120	0.244	0.312	0.034	0.120	0.231	0.442	0.181	0.112	-0.357	-0.220
EVB10170	1987	0.027	-0.283	0.362	0.393	0.066	0.045	0.228	0.434	0.133	0.065	-0.538	-0.352
EVB10070	1987	0.026	-0.316	0.389	0.390	0.074	0.038	0.213	0.417	0.127	0.053	-0.591	-0.377
EVF10005	1987	0.047	-0.337	0.408	0.402	0.065	0.008	0.229	0.413	0.129	0.076	-0.572	-0.367
EVA10340	1987	0.038	-0.134	0.237	0.402	0.015	0.029	0.289	0.482	0.138	0.115	-0.305	-0.240
EVA10240	1987	0.030	-0.158	0.256	0.395	0.027	0.037	0.271	0.471	0.134	0.097	-0.359	-0.266
EVB10040	1987	0.034	-0.324	0.396	0.394	0.071	0.027	0.219	0.415	0.127	0.061	-0.584	-0.373
EVB10270	1987	0.020	-0.225	0.312	0.388	0.052	0.049	0.237	0.447	0.130	0.068	-0.475	-0.322
EVQAD412	1987	0.030	0.030	0.090	0.380	-0.040	-0.010	0.310	0.490	0.110	0.120	-0.120	-0.150
EVQAD413	1987	-0.040	-0.250	0.330	0.350	0.100	0.130	0.160	0.430	0.120	-0.020	-0.650	-0.410
EVQAD512	1987	0.090	-0.170	0.280	0.460	0.010	0.030	0.370	0.540	0.190	0.210	-0.200	-0.190
EV 513	1987	0.060	-0.350	0.420	0.410	0.060	-0.010	0.240	0.410	0.130	0.090	-0.560	-0.360
EVA10200	1988	0.147	0.035	0.044	0.191	0.328	0.446	0.157	0.233	0.305	-0.009	-0.335	-0.085
EVB10170	1988	0.197	0.029	0.031	0.247	0.424	0.445	0.240	0.203	0.312	-0.075	-0.353	-0.172
EVB10070	1988	0.199	0.020	0.027	0.249	0.433	0.446	0.252	0.166	0.323	-0.087	-0.352	-0.190
EVF10005	1988	0.218	0.020	0.029	0.268	0.449	0.455	0.306	0.193	0.339	-0.083	-0.277	-0.190
EVA10340	1988	0.181	0.047	0.028	0.243	0.407	0.457	0.191	0.305	0.274	-0.055	-0.314	-0.094
EVA10240	1988	0.177	0.041	0.025	0.238	0.407	0.453	0.184	0.269	0.278	-0.064	-0.342	-0.111
EVB10040	1988	0.206	0.020	0.027	0.256	0.439	0.449	0.271	0.176	0.329	-0.085	-0.325	-0.190
EVB10270	1988	0.181	0.032	0.026	0.236	0.413	0.447	0.195	0.211	0.293	-0.076	-0.376	-0.148
EVQAD412	1988	0.130	0.030	-0.010	0.220	0.400	0.480	0.070	0.270	0.230	-0.090	-0.330	-0.030
EVQAD413	1988	0.140	0.020	0.020	0.190	0.380	0.420	0.080	0.080	0.270	-0.100	-0.590	-0.190

cyp03_pit129.EVA

EVQAD512	1988	0.250	0.100	0.080	0.290	0.410	0.450	0.350	0.540	0.300	0.030	-0.150	-0.070
EV 513	1988	0.230	0.020	0.030	0.280	0.460	0.460	0.340	0.210	0.350	-0.080	-0.230	-0.190
EVA10200	1989	-0.064	-0.007	-0.002	0.230	-0.092	0.053	0.048	0.274	0.284	0.217	0.139	0.109
EVB10170	1989	-0.137	-0.096	-0.119	0.303	-0.087	-0.250	0.057	0.233	0.274	0.175	0.167	0.087
EVB10070	1989	-0.163	-0.110	-0.153	0.309	-0.064	-0.325	0.042	0.216	0.273	0.167	0.154	0.070
EVF10005	1989	-0.186	-0.104	-0.163	0.346	-0.031	-0.371	0.084	0.249	0.283	0.169	0.145	0.058
EVA10340	1989	-0.076	-0.002	0.010	0.305	-0.135	0.052	0.094	0.313	0.267	0.212	0.213	0.136
EVA10240	1989	-0.086	-0.020	-0.015	0.295	-0.131	0.001	0.070	0.286	0.264	0.204	0.205	0.127
EVB10040	1989	-0.171	-0.108	-0.157	0.322	-0.052	-0.342	0.057	0.228	0.277	0.167	0.151	0.066
EVB10270	1989	-0.113	-0.065	-0.076	0.287	-0.113	-0.135	0.042	0.240	0.264	0.185	0.184	0.105
EVQAD412	1989	-0.060	0.120	0.110	0.290	-0.150	0.340	0.030	0.340	0.230	0.240	0.250	0.160
EVQAD413	1989	-0.090	-0.130	-0.120	0.190	-0.170	-0.180	-0.090	0.110	0.240	0.160	0.180	0.110
EVQAD512	1989	-0.030	-0.030	0.050	0.370	-0.150	0.040	0.290	0.430	0.320	0.230	0.220	0.160
EV 513	1989	-0.200	-0.100	-0.170	0.370	-0.010	-0.400	0.110	0.270	0.290	0.170	0.140	0.050
EVA10200	1990	-0.218	0.016	-0.122	0.090	-0.104	0.334	0.170	0.371	0.109	-0.042	-0.175	-0.100
EVB10170	1990	-0.383	-0.015	-0.146	0.156	-0.137	0.326	0.187	0.355	0.059	-0.146	-0.206	-0.123
EVB10070	1990	-0.393	-0.018	-0.129	0.159	-0.144	0.323	0.173	0.337	0.056	-0.165	-0.227	-0.121
EVF10005	1990	-0.409	0.018	-0.068	0.196	-0.123	0.346	0.183	0.321	0.065	-0.125	-0.229	-0.084
EVA10340	1990	-0.311	0.041	-0.167	0.140	-0.097	0.346	0.210	0.383	0.051	-0.049	-0.154	-0.109
EVA10240	1990	-0.318	0.023	-0.176	0.131	-0.111	0.335	0.198	0.377	0.048	-0.080	-0.168	-0.121
EVB10040	1990	-0.399	-0.005	-0.107	0.172	-0.137	0.331	0.177	0.331	0.059	-0.150	-0.227	-0.108
EVB10270	1990	-0.347	-0.010	-0.177	0.130	-0.135	0.320	0.183	0.365	0.049	-0.135	-0.194	-0.136
EVQAD412	1990	-0.180	0.100	-0.190	0.070	-0.080	0.340	0.160	0.360	0.000	0.000	-0.160	-0.120
EVQAD413	1990	-0.340	-0.130	-0.320	0.040	-0.210	0.250	0.140	0.390	0.030	-0.290	-0.220	-0.240
EVQAD512	1990	-0.410	0.080	-0.100	0.260	-0.040	0.410	0.330	0.440	0.120	0.070	-0.070	-0.030
EV 513	1990	-0.420	0.040	-0.030	0.220	-0.110	0.360	0.190	0.310	0.070	-0.100	-0.230	-0.060
EVA10200	1991	0.002	-0.017	0.162	-0.276	-0.009	0.294	0.264	0.228	0.193	-0.010	-0.083	0.009
EVB10170	1991	-0.067	-0.042	0.159	-0.465	0.001	0.174	0.278	0.129	0.114	-0.070	-0.122	-0.189
EVB10070	1991	-0.077	-0.053	0.146	-0.540	-0.033	0.154	0.250	0.100	0.099	-0.059	-0.147	-0.219
EVF10005	1991	-0.061	-0.051	0.155	-0.552	-0.043	0.133	0.262	0.100	0.118	0.020	-0.124	-0.256
EVA10340	1991	0.009	-0.014	0.200	-0.215	0.058	0.271	0.359	0.238	0.186	-0.032	-0.007	-0.015
EVA10240	1991	-0.009	-0.023	0.187	-0.270	0.040	0.259	0.334	0.214	0.165	-0.057	-0.038	-0.034
EVB10040	1991	-0.071	-0.053	0.149	-0.544	-0.037	0.147	0.254	0.100	0.106	-0.031	-0.139	-0.232
EVB10270	1991	-0.048	-0.038	0.165	-0.391	0.011	0.217	0.290	0.160	0.127	-0.089	-0.098	-0.108
EVQAD412	1991	0.100	-0.020	0.200	-0.090	-0.010	0.400	0.350	0.310	0.230	0.010	0.070	0.260

cyp03_pit129.EVA

EVQAD413	1991	-0.130	-0.060	0.120	-0.500	0.000	0.220	0.210	0.100	0.040	-0.310	-0.220	-0.100
EVQAD512	1991	0.010	0.040	0.270	-0.030	0.230	0.210	0.510	0.300	0.250	0.050	0.080	-0.190
EV 513	1991	-0.050	-0.050	0.160	-0.560	-0.050	0.120	0.270	0.100	0.130	0.070	-0.110	-0.280
EVA10200	1992	0.048	0.020	0.124	0.114	0.069	0.043	0.098	0.375	0.026	0.182	-0.178	-0.072
EVB10170	1992	-0.075	-0.011	0.107	0.154	0.051	-0.050	0.242	0.346	-0.061	0.048	-0.207	-0.130
EVB10070	1992	-0.099	-0.017	0.093	0.152	0.037	-0.064	0.267	0.337	-0.079	0.018	-0.227	-0.147
EVF10005	1992	-0.124	-0.013	0.116	0.188	0.033	-0.031	0.367	0.333	-0.018	-0.012	-0.211	-0.143
EVA10340	1992	0.045	0.021	0.170	0.176	0.106	0.015	0.146	0.378	0.031	0.173	-0.139	-0.072
EVA10240	1992	0.030	0.013	0.149	0.161	0.095	-0.009	0.136	0.372	-0.006	0.155	-0.160	-0.087
EVB10040	1992	-0.108	-0.015	0.101	0.165	0.035	-0.052	0.303	0.335	-0.057	0.007	-0.221	-0.145
EVB10270	1992	-0.022	-0.003	0.114	0.144	0.069	-0.047	0.160	0.357	-0.063	0.101	-0.198	-0.116
EVQAD412	1992	0.210	0.050	0.190	0.160	0.150	0.030	-0.060	0.400	0.050	0.310	-0.130	-0.050
EVQAD413	1992	-0.020	-0.030	0.020	0.040	0.050	-0.170	-0.050	0.350	-0.270	0.110	-0.280	-0.160
EVQAD512	1992	-0.040	0.030	0.260	0.270	0.120	0.130	0.410	0.390	0.210	0.130	-0.030	-0.010
EV 513	1992	-0.140	-0.010	0.130	0.210	0.030	-0.010	0.430	0.330	0.020	-0.030	-0.200	-0.140
EVA10200	1993	0.003	0.036	0.042	0.037	0.046	0.163	0.594	0.387	0.253	-0.157	-0.054	0.059
EVB10170	1993	-0.046	-0.035	-0.009	0.031	0.062	-0.082	0.646	0.360	0.225	-0.265	-0.074	0.027
EVB10070	1993	-0.064	-0.041	-0.024	0.029	0.039	-0.157	0.629	0.312	0.213	-0.269	-0.103	0.015
EVF10005	1993	-0.043	-0.004	0.003	0.066	0.070	-0.257	0.654	0.342	0.236	-0.184	-0.101	0.055
EVA10340	1993	0.037	0.065	0.071	0.074	0.142	0.139	0.750	0.520	0.267	-0.176	0.020	0.114
EVA10240	1993	0.014	0.040	0.047	0.057	0.113	0.114	0.724	0.472	0.250	-0.215	-0.004	0.087
EVB10040	1993	-0.057	-0.028	-0.014	0.042	0.050	-0.193	0.638	0.323	0.221	-0.239	-0.103	0.030
EVB10270	1993	-0.031	-0.013	0.003	0.029	0.067	0.026	0.669	0.387	0.224	-0.274	-0.051	0.038
EVQAD412	1993	0.090	0.210	0.120	0.110	0.140	0.320	0.850	0.550	0.250	-0.120	0.050	0.190
EVQAD413	1993	-0.130	-0.160	-0.110	-0.090	-0.060	0.160	0.550	0.220	0.140	-0.540	-0.110	-0.110
EVQAD512	1993	0.110	0.050	0.150	0.130	0.300	0.100	0.790	0.750	0.380	-0.030	0.120	0.180
EV 513	1993	-0.030	0.020	0.020	0.090	0.090	-0.320	0.670	0.360	0.250	-0.130	-0.100	0.080
EVA10200	1994	-0.051	-0.029	0.150	0.110	0.016	0.318	0.123	0.325	0.376	-0.172	0.003	-0.104
EVB10170	1994	-0.122	-0.127	0.097	0.168	-0.090	0.251	0.119	0.249	0.378	-0.453	0.006	-0.239
EVB10070	1994	-0.147	-0.153	0.093	0.160	-0.112	0.230	0.099	0.218	0.373	-0.483	0.011	-0.267
EVF10005	1994	-0.131	-0.169	0.116	0.160	-0.142	0.242	0.136	0.188	0.377	-0.506	0.078	-0.269
EVA10340	1994	-0.019	-0.026	0.171	0.152	0.018	0.347	0.192	0.335	0.383	-0.279	0.077	-0.108
EVA10240	1994	-0.046	-0.043	0.154	0.150	0.006	0.323	0.163	0.322	0.379	-0.303	0.051	-0.133
EVB10040	1994	-0.141	-0.159	0.101	0.160	-0.123	0.234	0.112	0.207	0.375	-0.491	0.035	-0.267
EVB10270	1994	-0.100	-0.088	0.116	0.155	-0.039	0.274	0.119	0.284	0.375	-0.380	0.006	-0.195

cyp03_pit129.EVA

EVQAD412	1994	0.040	0.070	0.280	0.060	0.170	0.420	0.180	0.380	0.360	-0.030	0.180	0.030
EVQAD413	1994	-0.200	-0.100	0.020	0.160	-0.020	0.190	-0.020	0.310	0.360	-0.410	-0.200	-0.260
EVQAD512	1994	0.070	-0.030	0.150	0.260	-0.070	0.400	0.360	0.370	0.430	-0.400	0.110	-0.110
EV 513	1994	-0.120	-0.180	0.130	0.160	-0.160	0.250	0.160	0.170	0.380	-0.520	0.120	-0.270
EVA10200	1995	0.150	0.055	0.130	-0.034	0.033	0.294	0.278	0.425	0.102	0.281	0.099	-0.051
EVB10170	1995	0.209	0.086	0.068	-0.103	0.033	0.283	0.289	0.397	0.062	0.261	0.141	-0.135
EVB10070	1995	0.216	0.096	0.057	-0.127	0.048	0.289	0.273	0.390	0.056	0.243	0.129	-0.175
EVF10005	1995	0.243	0.117	0.059	-0.111	0.104	0.326	0.277	0.396	0.077	0.259	0.148	-0.215
EVA10340	1995	0.183	0.054	0.140	0.009	0.057	0.289	0.337	0.444	0.063	0.333	0.191	-0.040
EVA10240	1995	0.180	0.055	0.126	-0.019	0.043	0.279	0.324	0.434	0.054	0.312	0.175	-0.056
EVB10040	1995	0.226	0.104	0.057	-0.121	0.068	0.302	0.275	0.392	0.064	0.249	0.136	-0.190
EVB10270	1995	0.187	0.066	0.092	-0.076	0.023	0.269	0.299	0.410	0.047	0.273	0.146	-0.096
EVQAD412	1995	0.130	0.010	0.230	0.090	0.130	0.290	0.340	0.500	0.000	0.360	0.210	-0.020
EVQAD413	1995	0.130	0.030	0.050	-0.180	-0.130	0.170	0.260	0.370	-0.010	0.190	0.070	-0.050
EVQAD512	1995	0.250	0.090	0.120	0.080	0.050	0.340	0.410	0.440	0.180	0.420	0.260	0.030
EV 513	1995	0.260	0.130	0.060	-0.100	0.140	0.350	0.280	0.400	0.090	0.270	0.160	-0.240
EVA10200	1996	0.052	0.219	0.124	0.132	0.132	0.096	-0.031	0.064	0.001	0.098	-0.105	-0.007
EVB10170	1996	0.050	0.205	0.134	0.138	0.220	0.011	0.016	-0.035	-0.147	0.023	-0.165	-0.024
EVB10070	1996	0.040	0.190	0.123	0.130	0.231	-0.015	0.001	-0.041	-0.196	0.013	-0.179	-0.024
EVF10005	1996	0.040	0.202	0.146	0.142	0.304	0.031	0.062	-0.022	-0.217	0.036	-0.204	-0.015
EVA10340	1996	0.067	0.296	0.167	0.182	0.222	0.122	0.025	0.002	-0.017	0.089	-0.115	-0.022
EVA10240	1996	0.060	0.275	0.151	0.169	0.203	0.084	-0.002	-0.010	-0.046	0.070	-0.118	-0.025
EVB10040	1996	0.040	0.194	0.131	0.134	0.257	0.002	0.023	-0.034	-0.204	0.021	-0.188	-0.021
EVB10270	1996	0.051	0.230	0.129	0.146	0.188	0.020	-0.022	-0.032	-0.108	0.034	-0.137	-0.028
EVQAD412	1996	0.040	0.390	0.140	0.210	0.190	0.150	-0.130	0.030	0.000	0.140	-0.050	-0.030
EVQAD413	1996	0.040	0.150	0.050	0.090	0.000	-0.160	-0.190	-0.100	-0.130	-0.060	-0.100	-0.050
EVQAD512	1996	0.130	0.310	0.280	0.220	0.350	0.300	0.330	0.040	0.130	0.140	-0.160	0.000
EV 513	1996	0.040	0.210	0.160	0.150	0.350	0.060	0.100	-0.010	-0.230	0.050	-0.220	-0.010
EVA10200	1997	0.012	-0.110	0.120	-0.120	0.085	0.156	0.334	0.207	0.333	-0.089	-0.117	-0.112
EVB10170	1997	-0.054	-0.203	0.083	-0.263	0.161	0.077	0.344	0.140	0.277	-0.217	-0.143	-0.203
EVB10070	1997	-0.067	-0.210	0.062	-0.310	0.159	0.069	0.320	0.126	0.266	-0.247	-0.161	-0.217
EVF10005	1997	-0.069	-0.204	0.092	-0.298	0.190	0.094	0.332	0.135	0.293	-0.237	-0.142	-0.201
EVA10340	1997	0.009	-0.144	0.182	-0.057	0.152	0.130	0.433	0.191	0.360	-0.115	-0.068	-0.119
EVA10240	1997	-0.002	-0.156	0.153	-0.104	0.142	0.113	0.409	0.177	0.338	-0.143	-0.090	-0.140
EVB10040	1997	-0.067	-0.208	0.073	-0.306	0.170	0.078	0.324	0.129	0.276	-0.243	-0.154	-0.211

cyp03_pit129.EVA

EVB10270	1997	-0.032	-0.184	0.099	-0.206	0.138	0.083	0.363	0.150	0.293	-0.195	-0.130	-0.183
EVQAD412	1997	0.080	-0.060	0.240	0.100	0.070	0.170	0.470	0.210	0.440	-0.080	-0.030	-0.040
EVQAD413	1997	-0.060	-0.230	-0.030	-0.350	0.060	-0.010	0.280	0.100	0.180	-0.280	-0.220	-0.270
EVQAD512	1997	0.000	-0.170	0.280	0.040	0.290	0.180	0.530	0.250	0.400	0.000	0.010	-0.090
EV 513	1997	-0.070	-0.200	0.110	-0.290	0.210	0.110	0.340	0.140	0.310	-0.230	-0.130	-0.190
EVA10200	1998	-0.119	-0.101	0.198	0.222	0.178	0.467	0.471	0.321	-0.072	-0.058	-0.056	0.008
EVB10170	1998	-0.187	-0.160	0.198	0.282	0.230	0.479	0.529	0.261	-0.281	-0.212	-0.161	-0.053
EVB10070	1998	-0.179	-0.178	0.188	0.276	0.222	0.476	0.515	0.242	-0.324	-0.200	-0.169	-0.073
EVF10005	1998	-0.118	-0.148	0.146	0.285	0.270	0.503	0.561	0.284	-0.309	-0.188	-0.194	-0.096
EVA10340	1998	-0.137	-0.079	0.185	0.289	0.292	0.514	0.619	0.379	-0.097	-0.181	-0.079	0.003
EVA10240	1998	-0.158	-0.105	0.195	0.283	0.266	0.500	0.588	0.344	-0.140	-0.183	-0.083	-0.004
EVB10040	1998	-0.157	-0.167	0.173	0.279	0.239	0.486	0.532	0.257	-0.319	-0.196	-0.178	-0.081
EVB10270	1998	-0.191	-0.150	0.208	0.277	0.227	0.478	0.536	0.280	-0.232	-0.197	-0.115	-0.027
EVQAD412	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100	0.040
EVQAD413	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090	0.000
EVQAD512	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240	0.010
EV 513	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210	-0.110

cyp03_pit129.FLO

IN 513	1948	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1948	39837	54683	47268	18644	80804	2587	1317	387	556	538	1879	2191
INB10000	1948	85421	140304	163444	51133	152410	18308	3893	387	556	981	3951	6612
INC10000	1948	29882	63557	70415	21164	55875	5249	1664	114	3	10	1918	3235
IND10000	1948	28684	61008	67592	20315	53634	5039	1597	109	3	9	1841	3105
INE10000	1948	51160	108813	120555	36234	95661	8987	2848	195	6	17	3284	5538
INF10000	1948	245818	461732	523372	160270	448842	48059	12411	1026	834	1487	13517	22719
INQAD412	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1948	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1949	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1949	53230	29211	29964	22062	12371	4506	2639	873	2377	104149	7855	15562
INB10000	1949	53230	79641	71509	48647	32490	9267	9567	2955	6378	147337	47440	30625
INC10000	1949	15790	29611	30349	31147	26382	3474	11109	6217	4319	33309	31430	13587
IND10000	1949	15156	28423	29132	29898	25324	3335	10664	5967	4146	31973	30169	13042
INE10000	1949	27033	50696	51959	53326	45168	5948	19020	10643	7394	57027	53810	23262
INF10000	1949	141843	236198	227144	196580	153638	27600	58619	29262	26715	350976	195930	99641
INQAD412	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1949	100	100	100	100	100	100	100	100	100	100	100	100

INQAD512	1949	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1950	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1950	84084	136888	36163	11532	110724	12673	5932	3612	58208	3290	2395	2978
INB10000	1950	187555	272450	76563	30284	251282	35799	9234	8581	155414	14209	8728	9703
INC10000	1950	86809	92543	27263	17358	91101	20008	5707	6373	31989	6056	5245	5624
IND10000	1950	83328	88832	26169	16662	87448	19205	5478	6118	30707	5813	5034	5398
INE10000	1950	148621	158440	46675	29718	155970	34255	9771	10911	54768	10368	8979	9628
INF10000	1950	624630	772963	222247	114240	735927	132996	36492	38196	357618	45235	33893	36850
INQAD412	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1950	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1951	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1951	16542	57208	12996	8613	8590	5420	5144	199	1147	899	2076	3077
INB10000	1951	33346	116218	58828	40721	35763	14242	7049	199	5204	2240	6586	10674
INC10000	1951	13869	39454	28760	19086	22833	4502	964	127	4610	544	2517	7191
IND10000	1951	13313	37872	27607	18320	21918	4322	925	122	4425	522	2417	6903
INE10000	1951	23744	67547	49240	32676	39092	7708	1650	218	7893	931	4310	12311
INF10000	1951	104787	329631	202057	136571	144259	39062	14268	803	26149	5485	19808	44561
INQAD412	1951	100	100	100	100	100	100	100	100	100	100	100	100

INQAD413	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1951	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1952	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1952	15269	6229	20312	106196	33309	8586	1038	149	0	61	3848	21941
INB10000	1952	24386	25447	48508	181164	39031	45318	1423	149	0	61	5193	44782
INC10000	1952	10868	15772	22429	47240	23845	16873	459	171	0	0	516	8299
IND10000	1952	10432	15140	21530	45346	22889	16196	441	164	0	0	495	7966
INE10000	1952	18607	27003	38400	80878	40824	28887	786	292	0	0	883	14208
INF10000	1952	79538	100745	161461	456724	153136	134496	3941	904	0	90	9734	99366
INQAD412	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1952	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1953	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1953	12501	16796	13933	19484	92921	939	6803	1210	4340	824	2510	16909
INB10000	1953	36309	37043	50537	37893	259460	3792	14916	3402	7144	824	6125	29045
INC10000	1953	18011	20055	41452	19220	128023	4029	6754	3811	2405	56	2787	15206
IND10000	1953	17288	19251	39790	18449	122890	3868	6483	3658	2308	54	2676	14596
INE10000	1953	30835	34336	70969	32906	219183	6898	11563	6524	4117	96	4772	26033
INF10000	1953	125749	135023	240643	132932	895876	21736	49076	20287	20180	1440	20208	103789

INQAD412	1953	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1953	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1953	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1954	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1954	34592	10249	4346	3930	34988	7503	82	0	0	1301	1479	4320
INB10000	1954	53201	29468	14046	15677	51873	31348	82	0	0	2369	8121	11423
INC10000	1954	22861	18526	9864	11676	27447	11592	149	0	0	14	3651	4731
IND10000	1954	21945	17783	9468	11207	26346	11127	143	0	0	13	3505	4542
INE10000	1954	39140	31718	16887	19989	46990	19847	255	0	0	24	6251	8100
INF10000	1954	170121	117712	60245	69911	186524	92718	717	1	0	3555	26614	35817
INQAD412	1954	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1954	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1954	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1955	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1955	3909	8712	20726	21377	1715	738	57	1593	807	4091	340	1348
INB10000	1955	14380	38210	57838	73577	8259	2614	2164	3703	807	5612	1073	4024
INC10000	1955	8560	24144	48860	42703	9072	2784	1730	5415	2925	1872	554	2559
IND10000	1955	8217	23176	46901	40991	8709	2672	1661	5198	2808	1797	532	2457
INE10000	1955	14656	41336	83651	73111	15533	4766	2962	9271	5008	3205	949	4381

INF10000	1955	55519	153120	281092	279677	48531	15010	10124	27155	12907	15786	3804	16191
INQAD412	1955	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1955	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1955	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1956	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1956	1353	27842	3063	1589	8554	56	0	0	0	0	134	383
INB10000	1956	5974	48491	16298	8375	25107	56	0	0	0	0	362	383
INC10000	1956	4229	25959	10025	5086	21658	323	17	0	0	0	1	19
IND10000	1956	4059	24918	9623	4882	20789	310	17	0	0	0	1	18
INE10000	1956	7240	44444	17163	8707	37079	552	30	0	0	0	1	33
INF10000	1956	25757	175573	64217	32737	123813	1374	69	0	0	0	537	643
INQAD412	1956	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1956	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1956	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1957	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1957	731	3601	20126	94381	52405	43544	966	440	4657	13734	83633	14848
INB10000	1957	1582	12913	25857	187015	152038	134887	11906	1116	6133	42022	221153	60538
INC10000	1957	299	5516	12695	109178	102831	81815	4875	761	740	22053	94139	32666
IND10000	1957	287	5295	12186	104800	98708	78535	4680	730	711	21168	90364	31356

INE10000	1957	512	9443	21735	186918	176053	140073	8346	1302	1267	37755	161171	55926
INF10000	1957	3533	41158	89027	713419	636350	526857	37106	4694	12021	150374	703602	220223
INQAD412	1957	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1957	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1957	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1958	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1958	45440	5670	31795	152128	85637	24521	15670	3599	7617	2544	21997	9779
INB10000	1958	115786	37473	71708	374361	271125	63415	58314	16163	19375	14349	21997	23062
INC10000	1958	58853	26980	28613	71506	151261	17282	20653	2353	6261	7198	4780	8772
IND10000	1958	56493	25898	27466	68638	145196	16589	19825	2259	6010	6909	4588	8421
INE10000	1958	100760	46191	48988	122422	258968	29587	35359	4028	10719	12323	8184	15019
INF10000	1958	406688	163390	220487	839203	1006168	162859	168828	33292	53686	50017	51627	69190
INQAD412	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1958	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1959	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1959	3592	22580	30981	30696	8110	3717	5523	1692	1389	1301	2868	35067
INB10000	1959	16004	70047	83001	112234	45291	27214	14969	8320	3473	4950	6289	55152
INC10000	1959	8250	28915	33924	58852	39468	24297	6599	3481	979	2168	2996	21731

IND10000	1959	7919	27755	32564	56492	37885	23322	6334	3342	940	2081	2876	20859
INE10000	1959	14124	49503	58080	100758	67571	41597	11298	5960	1676	3711	5129	37204
INF10000	1959	56674	219242	258433	401439	224948	137495	48534	26229	9050	15991	21286	168474
INQAD412	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1959	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1960	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1960	64111	25252	25532	4205	3388	8325	12483	504	5546	5487	5374	70491
INB10000	1960	155989	56577	91723	18213	17439	10582	31757	753	8254	16378	17132	210302
INC10000	1960	61651	30869	52451	10422	7095	4185	2060	187	967	4143	8345	121797
IND10000	1960	59179	29631	50348	10004	6810	4017	1977	180	928	3977	8010	116913
INE10000	1960	105550	52850	89800	17843	12147	7164	3527	321	1655	7093	14287	208524
INF10000	1960	477262	207177	345514	68636	54167	32386	55145	1863	16062	40778	58721	798350
INQAD412	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1960	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1961	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1961	34285	30639	35695	14373	3950	19421	7537	1591	1699	1114	12849	34310
INB10000	1961	84572	91522	116979	61979	19411	44289	34486	2032	3308	4762	19562	107170

INC10000	1961	52864	47946	57301	52215	7961	11581	23998	1878	3648	4119	11233	55312
IND10000	1961	50744	46023	55003	50121	7642	11116	23035	1803	3502	3953	10783	53094
INE10000	1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232	94697
INF10000	1961	336605	327172	402232	300644	60550	111783	147035	10521	19496	23527	73876	379781
INQAD412	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1961	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1962	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1962	33638	25699	28421	22735	12989	4879	2624	292	2931	2007	7460	7101
INB10000	1962	90002	81056	108133	53472	42717	13680	9641	1255	10739	13073	19445	28643
INC10000	1962	41302	39541	53153	26365	27183	4664	2296	384	1527	3264	4084	7723
IND10000	1962	39645	37955	51022	25307	26093	4477	2204	368	1465	3133	3920	7413
INE10000	1962	70711	67696	91002	45138	46538	7985	3931	657	2614	5587	6992	13222
INF10000	1962	298318	278055	372559	184553	171946	38882	23433	3390	21972	32375	45070	73227
INQAD412	1962	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1962	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1962	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1963	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1963	9929	5878	14341	10426	18910	1444	0	0	0	309	0	826

INB10000	1963	23294	13788	33643	24460	44363	3388	0	0	0	726	0	1939
INC10000	1963	8998	6716	12016	11131	35052	1207	337	35	1	0	117	1148
IND10000	1963	7675	5268	12014	14911	23019	1142	106	6	0	0	179	1461
INE10000	1963	15406	11498	20573	19057	60012	2067	577	60	2	0	200	2104
INF10000	1963	70437	47259	97806	80700	205895	9837	1351	139	5	1072	467	7667
INQAD412	1963	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1963	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1963	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1964	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1964	1600	3295	11447	12118	6728	1654	0	2395	2582	1058	1164	2941
INB10000	1964	3753	7729	26854	28429	15783	3881	0	5619	6057	2482	2731	6900
INC10000	1964	1447	3074	8763	6476	5769	401	9	483	834	1022	764	5969
IND10000	1964	1553	3192	7645	6994	2944	317	0	567	855	298	189	1013
INE10000	1964	2477	5262	15003	11088	9878	687	15	827	1428	1750	1308	10219
INF10000	1964	11338	23723	74751	67919	46414	7338	35	10233	12285	7759	7093	34093
INQAD412	1964	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1964	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1964	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1965	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

INA10000	1965	8028	46220	19775	7158	24331	11578	384	415	449	0	154	0
INB10000	1965	18833	108430	46393	16791	57079	27161	900	974	1054	0	361	0
INC10000	1965	12049	32040	23480	14544	22544	21179	1464	9	120	31	38	605
IND10000	1965	5034	25764	15645	7651	23660	12824	528	0	184	0	43	547
INE10000	1965	20628	54855	40199	24900	38596	36260	2507	16	206	113	66	1083
INF10000	1965	76065	288441	162545	83045	174576	124930	7193	1476	2039	212	686	2492
INQAD412	1965	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1965	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1965	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1966	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1966	1756	6176	4745	138284	103327	4307	125	201	2160	1934	3102	5161
INB10000	1966	4119	14490	11131	324412	242403	10104	293	471	5066	4538	7277	12107
INC10000	1966	1680	4897	3591	159318	113530	2358	257	411	1177	661	1248	2683
IND10000	1966	1664	3313	2482	178898	84637	1087	73	82	525	535	1514	2567
INE10000	1966	2876	8384	6149	272761	194370	4036	440	704	2015	1131	2136	4594
INF10000	1966	12811	41010	30821	1117124	812643	24362	1462	2342	12195	9347	15743	28624
INQAD412	1966	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1966	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1966	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1967	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1967	7672	4362	7059	24275	31206	22852	1364	534	786	122	3355	16435
INB10000	1967	17998	10232	16561	56949	73209	53611	3200	1254	1843	286	7871	38556
INC10000	1967	4850	3918	3993	9023	19814	40356	1750	50	113	27	487	4387
IND10000	1967	4031	3111	3613	11929	17600	40450	604	0	126	0	716	7445
INE10000	1967	8303	6708	6837	15447	33923	69092	2996	85	194	46	782	7829
INF10000	1967	46001	30802	40450	120232	187465	240793	11734	2051	3175	530	13498	74976
INQAD412	1967	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1967	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1967	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1968	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1968	35450	19593	45168	22304	64758	24297	3798	1549	13329	2035	12282	34404
INB10000	1968	72222	38392	92482	54215	152730	54038	22002	4153	19517	7811	19101	76214
INC10000	1968	25170	15828	29421	31752	95207	11218	7478	1402	4239	2646	7058	27399
IND10000	1968	28805	14096	33568	28802	112683	10239	9070	1230	3752	1998	6340	26910
INE10000	1968	43141	27098	50370	54361	163001	19205	12802	2401	7258	4530	12083	46908
INF10000	1968	207527	120085	254399	207224	606840	124725	62438	11750	45799	22131	56473	222276
INQAD412	1968	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1968	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

INQAD512	1968	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1969	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1969	9862	71203	68764	34682	64871	2377	608	359	356	395	2048	4942
INB10000	1969	26700	141236	157880	114767	114352	11219	608	683	3271	751	12770	28641
INC10000	1969	15590	46757	66884	75155	35604	6193	177	7	2	6	8176	15521
IND10000	1969	12224	56748	75881	57363	35774	3775	197	0	0	0	5324	15430
INE10000	1969	23641	65009	145506	123210	61156	8136	425	19	32	12	8065	18077
INF10000	1969	97361	373614	546786	462407	311753	37727	1786	1046	4880	1134	42842	91910
INQAD412	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1969	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1970	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1970	8790	17815	55225	41060	6893	3566	673	597	262	1566	1983	1733
INB10000	1970	38886	43529	126894	93678	32796	14829	3576	916	678	1809	8287	9724
INC10000	1970	36824	24865	53935	28189	22029	14220	2233	467	254	898	4520	4697
IND10000	1970	28773	20003	54323	35341	15269	2731	253	0	274	1453	3388	2517
INE10000	1970	46144	30013	78080	37641	43263	5122	3482	336	312	1540	6689	5843
INF10000	1970	179943	145320	382337	235549	144848	50460	13721	2539	1838	6271	28792	29924
INQAD412	1970	100	100	100	100	100	100	100	100	100	100	100	100

INQAD413	1970	100	100	100	100	100	100	100	100	100	100	100		100
INQAD512	1970	100	100	100	100	100	100	100	100	100	100	100		100
IN 513	1971	100	100	100	100	100	100	100	100	100	100	100		100
INA10000	1971	2661	7903	6276	1956	1490	294	5324	2912	224	582	4790		47949
INB10000	1971	14069	19441	17139	9723	3632	401	6208	13993	224	2355	5612		71949
INC10000	1971	6085	9057	12879	6476	6450	385	134	4687	436	368	1867		16580
IND10000	1971	2586	5109	6226	3161	1631	54	721	2611	0	225	2571		20267
INE10000	1971	6234	9192	12339	6995	3765	254	767	3209	444	273	2617		20411
INF10000	1971	38969	55657	62549	34250	20448	1537	10498	32324	1630	4425	14908		160873
INQAD412	1971	100	100	100	100	100	100	100	100	100	100	100		100
INQAD413	1971	100	100	100	100	100	100	100	100	100	100	100		100
INQAD512	1971	100	100	100	100	100	100	100	100	100	100	100		100
IN 513	1972	100	100	100	100	100	100	100	100	100	100	100		100
INA10000	1972	35778	9851	7109	2513	1692	5897	11293	398	0	2635	12900		22253
INB10000	1972	79469	29439	24340	12145	4433	9308	11293	398	8259	2635	30463		51060
INC10000	1972	32462	16336	10713	7863	6312	695	489	99	506	2189	18942		31893
IND10000	1972	44226	13021	8530	3954	2374	3379	353	0	497	2201	12034		23601
INE10000	1972	55802	24585	16776	6895	5856	3775	1956	0	520	4521	25702		51367
INF10000	1972	247696	103902	76537	39728	24516	20347	20287	734	13712	13799	110912		198353

INQAD412	1972	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1972	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1972	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1973	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1973	29332	25393	75060	85083	20070	29548	1491	912	3616	17587	64229	43676
INB10000	1973	54925	63968	190340	267839	38236	71666	1491	2412	12342	37605	129727	110506
INC10000	1973	28122	33041	82869	119369	24972	37704	5036	995	9883	25530	43304	72548
IND10000	1973	25124	30975	83482	157256	17182	51858	2498	854	21007	24938	53961	60365
INE10000	1973	38724	58359	114968	244572	53542	95187	6158	1789	33801	53003	70831	135374
INF10000	1973	179822	229436	573228	932962	172407	302074	18732	7672	82735	171501	360115	470229
INQAD412	1973	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1973	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1973	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1974	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1974	50748	16594	6657	71771	9611	34032	870	4421	66183	14013	92424	53192
INB10000	1974	111481	54480	35324	149529	26629	95157	5822	8941	115941	37321	210102	121841
INC10000	1974	49316	33311	21527	62076	16191	78580	1995	1745	34600	15539	79975	50468
IND10000	1974	34550	23741	23682	34158	12847	53806	1111	1161	36449	15068	89661	53394
INE10000	1974	93858	59562	46131	45999	32803	122049	3007	1523	52711	21457	111560	93367

INF10000	1974	376053	217600	152074	380408	111674	436793	15985	18029	300146	109745	593105	392329
INQAD412	1974	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1974	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1974	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1975	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1975	30772	75906	65654	32988	72893	15264	3062	2192	324	619	909	1616
INB10000	1975	74874	206821	147102	79718	168997	44896	9862	5783	324	619	3345	8887
INC10000	1975	33952	89507	57694	26734	73979	23384	6101	1880	728	469	2985	5572
IND10000	1975	37060	73243	46454	36184	52283	21553	5777	1277	504	293	2587	4406
INE10000	1975	59428	132265	70814	55253	106273	34994	10508	2644	912	337	3124	5582
INF10000	1975	248464	632912	406998	238792	515741	152507	39091	15221	2901	2105	13961	29594
INQAD412	1975	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1975	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1975	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1976	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1976	1693	6125	31916	16780	37982	2776	11755	876	528	0	0	3155
INB10000	1976	27181	23721	80819	32874	59042	10218	18765	876	1075	0	0	21205
INC10000	1976	19986	17857	52884	14349	16822	8321	8519	350	1127	1057	2174	16467
IND10000	1976	9280	8290	32233	10547	19425	3527	24944	477	1526	1341	1429	12639

INE10000	1976	21887	19884	55590	20294	26800	9474	37504	2258	2332	2426	3574	25176
INF10000	1976	101972	90764	279532	99703	151606	41367	95673	5146	6695	5143	8488	92809
INQAD412	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1976	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1977	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1977	2891	37018	52131	51556	3156	1143	0	887	0	0	2902	2729
INB10000	1977	15058	92488	104229	113228	19453	6092	0	2879	5182	0	14597	14967
INC10000	1977	15073	48068	49445	62201	8172	3950	238	405	323	66	5940	17501
IND10000	1977	10943	53343	60751	57196	5803	2459	245	5377	5044	963	5174	8589
INE10000	1977	26347	95422	90727	101597	21623	4388	389	7447	6567	1010	6161	12636
INF10000	1977	83401	348474	360911	409089	72725	21309	925	15846	17827	1589	39427	66606
INQAD412	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1977	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1978	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1978	9239	8957	23608	1819	9836	0	0	0	0	0	2969	2050
INB10000	1978	27973	30163	63702	15145	33285	2855	0	0	0	0	3796	7748
INC10000	1978	23372	25607	36204	13555	27025	3713	55	3	2	0	1200	8371

IND10000	1978	15498	16792	33055	7493	12719	1653	93	6	0	0	1956	2806
INE10000	1978	21187	29617	46329	19655	18866	2470	93	19	0	0	1955	4653
INF10000	1978	107109	126093	215948	71406	116920	13347	219	34	3	0	10264	30674
INQAD412	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1978	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1979	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1979	43190	24586	56791	40201	32919	18649	5112	14783	50198	1002	6613	16339
INB10000	1979	81889	47193	133465	145963	91577	25220	18756	46957	78909	6477	22804	51682
INC10000	1979	48112	27427	62739	78532	42553	30433	7507	38296	9022	4428	17077	27851
IND10000	1979	31842	17663	53037	78651	64462	14203	14963	23991	30546	4365	14441	30013
INE10000	1979	68957	52198	87681	168728	122150	36226	17277	35301	55955	15810	25167	43596
INF10000	1979	293805	187274	419217	580681	378453	135681	64296	178024	212478	39450	96057	181826
INQAD412	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1979	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1980	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1980	53071	29725	17586	45364	39960	3877	0	0	2649	1518	1786	5547
INB10000	1980	126757	77108	59289	108543	75932	17295	0	0	3311	5563	6823	10895

INC10000	1980	55729	42670	30979	48528	35624	8831	692	29	28	916	4269	6494
IND10000	1980	43734	41024	26885	41703	36805	4408	243	0	0	708	1374	2148
INE10000	1980	98383	88464	41292	74496	72221	9671	772	0	0	685	2406	3809
INF10000	1980	414764	307515	194277	341961	271388	52863	2162	43	4931	10579	19933	31304
INQAD412	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1980	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1981	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1981	2689	7604	9699	1530	48644	92577	8942	0	0	26846	9591	1677
INB10000	1981	8939	15943	25752	11344	100836	144608	8942	0	0	37274	16622	7752
INC10000	1981	6541	8667	13465	7289	45600	45539	3305	267	324	10430	8629	7489
IND10000	1981	2317	3696	7684	3697	38040	38572	4016	300	40	4272	5387	5102
INE10000	1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7594	10941
INF10000	1981	28913	45241	74018	39160	282497	364854	27127	1510	1639	76747	48503	38663
INQAD412	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1981	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1982	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1982	7152	13787	14215	17450	49290	28343	4103	0	0	0	8920	102460

INB10000	1982	18892	30960	30526	33162	81879	35067	4659	0	0	0	15955	164549
INC10000	1982	10787	23282	15937	15645	20075	17458	5408	1617	4	0	2430	61906
IND10000	1982	6995	12869	12884	8877	11579	2221	1367	0	0	34	2161	32555
INE10000	1982	10636	24253	21939	14184	21720	5489	3275	313	0	29	2156	57993
INF10000	1982	59532	115915	101010	93020	182631	85672	19702	2851	5	43	30334	420051
INQAD412	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1982	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1983	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1983	7064	30373	49796	12528	7755	4048	0	0	0	573	0	2457
INB10000	1983	26776	89984	93444	35613	31814	10536	6516	0	0	573	0	5349
INC10000	1983	25337	55472	34266	19830	22571	6757	8766	962	0	0	806	10916
IND10000	1983	13857	48749	47837	16999	17207	3710	2039	400	0	0	581	4534
INE10000	1983	29468	79834	75246	32176	25616	11473	4658	431	0	0	583	22561
INF10000	1983	120472	332692	299709	129389	118139	42481	29446	2057	0	847	2051	57336
INQAD412	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1983	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1984	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

INA10000	1984	3287	10858	12612	4737	0	0	0	0	0	35115	15074	28047
INB10000	1984	12186	31370	39305	18416	0	0	0	0	0	42445	28974	49544
INC10000	1984	9421	21788	31020	17651	3112	270	57	94	0	11474	19204	27152
IND10000	1984	4219	13284	19818	10133	1348	180	0	0	0	632	3515	7321
INE10000	1984	8510	33051	37829	21116	4444	1260	250	0	0	6385	10791	18082
INF10000	1984	44474	127307	159712	84443	11157	2259	453	139	0	89051	87081	139961
INQAD412	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1984	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1985	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1985	8613	60107	32881	27370	46746	6476	0	0	0	5558	8448	52840
INB10000	1985	22945	98798	76257	75521	94076	13122	4052	0	0	9893	21956	92542
INC10000	1985	19961	27238	36499	30315	36279	6501	1574	238	0	1046	9702	46966
IND10000	1985	8501	21354	32035	26580	39114	3671	358	0	0	728	9331	39581
INE10000	1985	19212	24535	54980	44182	55250	12252	904	70	0	1673	18435	75263
INF10000	1985	91731	222351	247699	221535	274086	47069	9643	454	0	18625	73972	317156
INQAD412	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1985	100	100	100	100	100	100	100	100	100	100	100	100

IN 513	1986	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1986	4625	63607	5058	26658	20923	37037	0	0	414	473	2742	11230
INB10000	1986	16430	98505	6300	40940	48501	50634	0	0	414	473	10545	47419
INC10000	1986	8905	31640	9794	19353	25309	32120	14580	223	430	1804	14799	55621
IND10000	1986	6480	36293	6131	10883	14253	10286	316	0	0	240	3798	22875
INE10000	1986	13707	57923	12288	24999	24789	28333	2962	3	436	1431	7689	49399
INF10000	1986	57654	277723	41913	125952	145604	164045	25905	333	1890	5476	48780	225110
INQAD412	1986	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1986	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1986	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1987	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1987	11488	35327	123391	4755	0	5018	1314	0	0	0	13493	135750
INB10000	1987	34144	66351	232533	18107	5257	13853	5973	0	0	0	44833	300753
INC10000	1987	29369	38444	65287	10853	4179	4646	2950	238	192	610	26021	132637
IND10000	1987	15153	29692	90735	5059	4282	12599	3407	0	0	310	14745	120709
INE10000	1987	29610	50950	131392	18451	6456	18177	5071	43	0	321	15037	174351
INF10000	1987	137517	229991	633826	70014	23467	54160	20664	415	283	1375	126837	897464
INQAD412	1987	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1987	100	100	100	100	100	100	100	100	100	100	100	100

INQAD512	1987	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1988	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1988	40466	35480	33607	16300	934	0	0	0	0	37	38739	16240
INB10000	1988	67973	80168	73280	45724	5215	489	746	0	0	3621	38739	46012
INC10000	1988	47277	36247	41830	26642	3324	466	1157	94	0	397	8773	30557
IND10000	1988	33952	34156	43518	19391	1809	430	1015	0	0	0	2913	6295
INE10000	1988	84765	54719	69041	36635	3895	434	1283	0	0	406	6637	10486
INF10000	1988	295366	252717	271938	160964	18362	2051	4705	139	0	6533	79962	128556
INQAD412	1988	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1988	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1988	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1989	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1989	19807	68523	50439	23561	92550	31861	2908	0	0	0	0	689
INB10000	1989	39666	122602	137096	66777	195291	58001	10254	0	0	0	0	1616
INC10000	1989	28656	45684	74638	50854	71542	35279	19627	4792	944	430	1607	3813
IND10000	1989	16591	40480	31901	31506	88387	12112	5583	526	0	0	97	102
INE10000	1989	27768	76079	129853	85067	148213	43689	22416	4776	1053	1039	3025	3667
INF10000	1989	141899	360858	504428	299328	612908	202265	77228	14129	2949	2169	6840	13432
INQAD412	1989	100	100	100	100	100	100	100	100	100	100	100	100

INQAD413	1989	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1989	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1990	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1990	22820	25971	109708	57230	52990	13392	0	3174	3779	1446	29055	32067
INB10000	1990	53536	60927	257372	134260	124313	31417	0	7445	8865	3393	68163	75229
INC10000	1990	30645	35540	98738	61045	34243	13666	884	1279	1296	5455	23255	32288
IND10000	1990	36797	32309	82854	77498	50708	21903	847	334	2294	4169	34402	39666
INE10000	1990	56095	68600	84906	106808	65003	41936	2753	2017	4217	7055	48479	65890
INF10000	1990	207147	243758	651258	446137	330134	128503	5372	15862	21232	23484	206588	256073
INQAD412	1990	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1990	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1990	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1991	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1991	72764	46565	25841	38421	68597	25991	3177	0	1346	6656	25795	51231
INB10000	1991	170703	109239	60622	90135	160928	60975	7453	0	3158	15615	60515	120188
INC10000	1991	92714	52766	38488	62785	118917	25628	2857	3059	10274	2012	38194	61849
IND10000	1991	78313	47431	28963	49010	67836	18616	1657	661	883	971	12686	46350
INE10000	1991	163660	68336	78526	127224	146576	44928	8264	4882	3530	1311	21789	86523
INF10000	1991	630674	340150	262318	413693	629705	194234	27429	11726	25049	27966	177941	396587

INQAD412	1991	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1991	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1991	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1992	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1992	26432	40166	64358	6937	12747	38511	37693	15331	6776	0	17262	68144
INB10000	1992	62008	94228	150982	16275	29903	90345	88427	35966	15897	0	40497	159863
INC10000	1992	30938	70852	64891	16247	15610	19523	35419	9354	9993	3108	24093	69499
IND10000	1992	24744	40623	57305	10893	7366	20303	26129	4103	5382	2334	24192	69739
INE10000	1992	63027	102423	128086	24818	13262	20303	42286	4530	6255	3410	33261	116701
INF10000	1992	230328	395028	507931	84675	86793	192225	245330	73613	47469	9625	144498	511037
INQAD412	1992	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1992	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1992	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1993	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1993	65685	30669	51779	26262	14410	13668	155	1181	744	37157	8727	15998
INB10000	1993	154096	71949	121472	61610	33805	32064	364	2772	1744	87169	20472	37531
INC10000	1993	66252	27187	52978	26068	13172	17228	2599	1710	473	18918	14840	17438
IND10000	1993	73643	33922	46469	20207	18405	23421	2677	3064	67	25275	9390	10654
INE10000	1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	21639	15661

INF10000	1993	483274	233388	399517	196845	111821	176598	19599	11926	3509	193964	84101	104301
INQAD412	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1993	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1994	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1994	14521	37547	41106	11205	20128	5360	28275	0	0	19406	65106	76704
INB10000	1994	34066	88084	96434	26288	47219	12573	66332	0	0	45526	152736	179946
INC10000	1994	17832	38992	46845	16024	25159	29823	23390	1794	514	25408	44849	70600
IND10000	1994	10971	36397	35467	8674	17011	0	20721	0	0	13125	40261	72924
INE10000	1994	15823	47449	92236	31296	41942	9828	30129	2012	653	40037	52302	110523
INF10000	1994	100005	257725	347790	108697	168819	77121	176987	5622	1723	163872	369013	533198
INQAD412	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1994	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1995	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1995	72221	8138	24730	49422	46270	5872	2882	71	316	0	0	1399
INB10000	1995	169429	19093	58015	115942	108548	13774	6762	166	740	0	0	3282
INC10000	1995	86675	35166	33980	46460	52865	7381	3830	243	523	329	966	4044
IND10000	1995	54302	20107	16345	51746	39960	8070	3279	655	498	857	596	786

INE10000	1995	110561	57811	46682	84669	61351	12427	4813	608	665	825	1636	4209
INF10000	1995	541463	165495	204787	364854	328958	49592	22748	1501	2848	1704	3843	17034
INQAD412	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1995	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1996	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1996	4795	2678	3259	6685	2478	4493	1137	8848	6956	12454	28555	26864
INB10000	1996	11249	6283	7646	15683	5812	10540	2667	20757	16318	29216	66990	63022
INC10000	1996	6472	4000	6638	10147	4472	7786	1542	5188	11529	21123	24489	40490
IND10000	1996	2428	2416	3330	4140	3759	4164	410	1721	2643	3442	8501	21277
INE10000	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139
INF10000	1996	33922	21287	27852	49708	22230	41186	8462	46250	71112	106468	163947	232805
INQAD412	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1996	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1997	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1997	19718	84766	59257	73556	14927	25331	9426	3203	0	1699	4996	20292
INB10000	1997	46259	198858	139016	172560	35018	59425	22113	7515	0	3986	11721	47604
INC10000	1997	34726	74263	69844	67281	53779	34287	7765	1238	96	1734	7715	21475

IND10000	1997	20358	83597	60259	62467	35476	15273	14738	5202	1005	4075	5063	32643
INE10000	1997	48119	138138	123156	62596	90294	31642	27906	5202	1021	4088	7181	32654
INF10000	1997	190650	607314	490294	446614	264467	185113	85331	20608	1649	14483	39307	150230
INQAD412	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1997	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1998	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1998	60894	39273	29136	10891	361	0	0	0	12114	15658	13922	38400
INB10000	1998	142855	92133	68352	25550	847	0	0	0	28419	36732	32660	90087
INC10000	1998	59944	48938	44590	16678	3608	102	0	0	12752	21081	19833	42941
IND10000	1998	78855	50112	38323	10245	2418	732	0	0	14059	18101	21884	45247
INE10000	1998	141708	78165	69530	21772	4050	906	0	50	13991	43164	39459	70919
INF10000	1998	508739	323750	269460	94510	12558	1490	0	73	81459	149115	135787	301173
INQAD412	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1998	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_Baseline_woPit129

cyp03_pit129-Baseline

cyp03_pit129-Baseline

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD   51   1948      1      -1      -1      0      5      0      0      3      0      0      0
** ==============================================
JO
RO   -1
**
**FY  1.0  241800   1000    100                              FYLOTP
**FY  1.0   48500   1000    100     10                          BOB
**FY    1   10000   1000    100     10     10405850307
**FY    1   10000   1000    100     10     10405850301
**FY    1   10000   1000    100     10     10405850306
**FY    1   10000   1000    100     10     10405850304
**FY    1   10000   1000    100     10     10405850303
**FY    1   10000   1000    100     10     10405850305
**FY    1   10000   1000    100     10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
UC         0.080   0.084   0.088   0.090   0.090   0.087
```

```
UC   REC    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                      7             NONE
CPPPDISC  TCUSBC                      7             NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                      7              513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                      7             NONE
CP585037  A10120                      7              513
CP585009  A10120                      7             NONE
CP585010  A10120                      7             NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                      7              513
**CP585007  A10000                      7             NONE
**CP585006  A10000                      7             NONE
CP585031  PPDISC                      7              513
CP585007  PPDISC                      7             NONE
CP585006  PPDISC                      7             NONE
CP585036  585034                      7              513
CP585034  585033                      7              513
CP585033  585032                      7              513
CP585035  585032                      7              513
CP585032  585005                      7              513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
```

```
                                              cyp03_pit129-Baseline
**CP585005  A10000                       7          NONE
**CP585004  A10000                       7          NONE
**CP585003  A10000                       7          NONE
**CP585002  A10000                       7          NONE
**CP585001  A10000                       7          NONE
CP585005  PPDISC                       7          NONE
CP585004  TCUSBC                       7          NONE
CP585003  TCUSBC                       7          NONE
CP585002  TCUSBC                       7          NONE
CP585001  TCUSBC                       7          NONE
CP585011  A10070                       7          NONE
CP585012  A10010                       7          NONE
CP585013  A10010                       7          NONE
** add control points for A5814
CP581431  581432                       7        QAD413
CP581432  A10260                       7        QAD413
CP581433  A10240                       7        QAD413
** add control points for A5813
CP581301  D10000                       7          NONE
CP581302  D10000                       7          NONE
CP581303  D10000                       7          NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                       7        B10170
CP458237  B10170                       7        B10170
**
CPA10370  A10340                       7        QAD413
CPA10350  A10340                       7        QAD413
CPA10340  A10300                       7
**CPA10300  A10000                       7          NONE
CPA10300  A10200                       7          NONE
**
CPA10290  A10200                       7          NONE
CPA10280  A10240                       7        QAD413
CPA10260  A10240                       7        QAD413
**CPA10240  A10000                       7
```

CPA10240	A10200	7	
CPA10200	A10000	7	

** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses

**CPA10120	A10000	7	513
**CPA10100	A10000	7	513
**CPA10090	A10000	7	513
CPA10120	TCUSBC	7	513
CPA10100	TCUSBC	7	513
CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513

			cyp03_pit129-Baseline
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412

cyp03_pit129-Baseline

CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE
CPA240DM	OUT	2	NONE	NONE

cyp03_pit129-Baseline

```
CPB270DM      OUT                          2     NONE      NONE
CPB70DUM      OUT                          2     NONE      NONE
CPB20MUN      OUT                          2     NONE      NONE
CPAVNGER      OUT                          2     NONE      NONE
CPDNGRFD      OUT                          2     NONE      NONE
CPHGHSPR      OUT                          2     NONE      NONE
CPJEFFSN      OUT                          2     NONE      NONE
CPLVGSTN      OUT                          2     NONE      NONE
CPORECTY      OUT                          2     NONE      NONE
**
** ======================================================================
CPA-ZERO      OUT                          2     ZERO      ZERO      -3       0
** ======================================================================
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
**WR585100       0     IND20181231   1                                  104000PT129    PT129
**WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231    1                               10405850001     5850
WR585002       0     IND20041231    1                               10405850002     5850
SO                                BACKUP
WR585003       0     IND20041231    1                               10405850003     5850
SO                                BACKUP
WR585004       0     IND20041231    1                               10405850004     5850
SO                                BACKUP
WR585005       0     IND20041231    1                               10405850005     5850
SO                                BACKUP
WR585006       0     IND20041231    1                               10405850006     5850
SO                                BACKUP
WR585007       0     IND20041231    1                               10405850007     5850
SO                                BACKUP
WR585008       0     IND20041231    1                               10405850008     5850
```

```
SO                                    BACKUP
WR585009       0     IND20041231    1                           10405850009    5850
SO                                    BACKUP
WR585010       0     IND20041231    1                           10405850010    5850
SO                                    BACKUP
WR585011       0     IND20041231    1                           10405850011    5850
SO                                    BACKUP
WR585012       0     IND20041231    1                           10405850012    5850
SO                                    BACKUP
WR585013       0     IND20041231    1                           10405850013    5850
SO                                    BACKUP
WR585037       0     IND20041231    1                           10405850307    5850
WSR58507   525.6   0.979  0.5841
WR585031       0     IND20041231    1                           10405850301    5850
WSR58501   271.4   0.979  0.5841
WR585036       0     IND20041231    1                           10405850306    5850
WSR58506     327   0.979  0.5841
WR585034       0     IND20041231    1                           10405850304    5850
WSR58504   509.3   0.979  0.5841
WR585033       0     IND20041231    1                           10405850303    5850
WSR58503   287.3   0.979  0.5841
WR585035       0     IND20041231    1                           10405850305    5850
WSR58505   604.8  0.4012   0.856
WR585032       0     IND20041231    1                           10405850302    5850
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028    1                           10405814301
WS    HR9    356   0.979  0.5841
WR581432       0   OTHER20031028    1                           10405814302
WS   HR21    263   0.979  0.5841
WR581433       0   OTHER20031028    1                           10405814303
WS   HR10   1495  0.4012   0.856
** APPLICATION 5813
WR581301     685    581320031001    1                           10405813001
```

WR581303	0	581320031001		1			10405813003	
SO				BACKUP				
WR581302	0	581320031001		1			10405813002	
SO				BACKUP				
WRD10130	0	REC19830222		1			10404334301	4334
WSWHTOAK	6.7	0.979	0.5841		0			
WRD10160	0	REC19830222		1			10404334302	4334
WSBASSLK	3.4	0.979	0.5841		0			
WRD10140	0	REC19830222		1			10404334303	4334
WSDOGWOD	6	0.979	0.5841		0			
WRD10180	0	REC19830222		1			10404334304	4334
WSLKAUTM	130	0.979	0.5841		0			
WRD10170	0	REC19830222		1			10404334305	4334
WSCATFSH	5	0.979	0.5841		0			
WRD10150	0	REC19830222		1			10404334306	4334
WSLKPINE	10.5	0.979	0.5841		0			
WRD10190	0	REC19830222		1			10404334307	4334
WSLKWALL	5	0.979	0.5841		0			
WRF10080	2343	MUN19830418		1		1	10404349001	4349
WSF10080	8.29	0.979	0.5841		0			
SO	3293.45	2343						
WRF10080	1281	IND19830418		1		1	10404349002	4349
WSF10080	8.29	0.979	0.5841		0			
SO	3293.45	1281						
WRB10250	0	REC19841127		1			10404522301	
WSB10250	380	0.979	0.5841		0			
WRF10180	202.5	IRR19841218		1		1	10404525101	
WRA10370	0	REC19750106		1			60404558301	
WSA10370	350	0.979	0.5841		0			
WRA10350	0	REC19751215		1			60404559301	
WSA10350	230	0.979	0.5841		0			

**

**

** Lake Cypress Springs

**

```
**
WRA10340   10500     MUN19700720   1                                          60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                          60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                          60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720   1                                          60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                          60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                          60404561001
WRA10290    24.0     IRR19630801   1                                          60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                                          60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                          60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1                                          60404564301    4564      BOB
```

```
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                    60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1                                    60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                    60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1                                2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                    1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                    60404564304    4564  BOBROR
**
** ==============================================================
WRA10120    1680     MUN19550822   1                                    60404565301    4565
WSTANKSL    2700  0.4012   0.856        0
WRA10120     550     IND19550822   1                                    60404565302    4565
WSTANKSL    2700  0.4012   0.856        0
WRA10120       0     REC19550822   1                                    60404565303    4565
WSTANKSL    2700  0.4012   0.856        0
WRA10090   21.44     IRR19591231   1                                    60404566301
WSA10090    0.23   0.979  0.5841        0
WRA10100       6     IRR19561231   1                                    60404567301
WSA10100       5   0.979  0.5841        0
WRA10050     7.5     IRR19631231   1                                    60404568301
WSA10050      35   0.979  0.5841        0
WRA10070     400     MUN19380317   1                                    60404569301    4569
WSNEWCTY    1176  0.4012   0.856        0
```

```
WRA10070       0     REC19380317   1                                      60404569302    4569
WSNEWCTY    1176  0.4012   0.856        0
WRA10060     144     MUN19750120   1                                      60404570301    4570
WSOLDCTY     100   0.979  0.5841        0
WRA10060       0     REC19750120   1                                      60404570302    4570
WSOLDCTY     100   0.979  0.5841        0
WRA10040       4     IRR19631231   1                                      60404571301
WSA10040      12   0.979  0.5841        0
WRA10030     4.4     IRR19631231   1                                      60404572301
WSA10030      10   0.979  0.5841        0
WRE10020    25.3     IND19850604   1                                      10404573301
WSE10020      42   0.979  0.5841        0
WRA10010      11     IRR19551231   1                                      60404573001
WRB10320       0     IRR19511231   1                                      60404574001    4574
WSOFF320     5.0   0.979  0.5841        0
SO          5.43    1.40
WRB10320     1.4     IRR19511231   1                                      60404574301    4574
WSB10320     0.5   0.979  0.5841        0
WSOFF320     5.0   0.979  0.5841        0
OR           5.0
SO          5.43    1.40
WRB10290       0     REC19730430   1                                      60404575301
WSB10290      80   0.979  0.5841        0
**
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                      60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                      60404576302    4576
WS WELSH   23587
**
**
```

```
**
WRB10230     124     IRR19500930   1                                       60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                       60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                       60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                       60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                       60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                       60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                       60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                       60404582004    4582 ELLISON
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                           60404582303    4582   barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                                4582BU    4582   barnes
WSBARNES   24000
SO                        458237   BACKUP
**
```

```
**
WRB10120    38.3     IRR19620731   1                                     60404583301
WSB10120    4.79   0.979  0.5841        0
WRB10110    14.2     IRR19480930   1                                     60404584301
WSB10110      60   0.979  0.5841        0
WRB10100    0.56     IRR19550331   1                                     60404585301
WSB10100      50   0.979  0.5841        0
WRB10090       1     IRR19641231   1                                     60404586301
WSB10090      12   0.979  0.5841        0
WRB10080     150     IRR19561231   1                                     60404587301
WSSIMPSN    2500  0.4012   0.856        0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                                     60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                     60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                     60404589301
WSB10050     240   0.979  0.5841        0
**
**
**  Lake O'the Pines
** ===============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                            1MUN    4590   FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                            2IND    4590   FYLOTP
WSLKOPNS  251000
** ===============================================================================
**
```

WRF10250	8		IRR19670430	1	
WSF10250	6	0.979	0.5841		0
WRF10230	96.88		IRR19690930	1	
WRF10240	85		IRR19620531	1	
WSF10240	100	0.979	0.5841		0
WRF10220	1080		IRR19550103	1	
WRF10210	2000		MUN19630218	1	
WRF10190	80.21		IRR19570319	1	
WRC10040	25		IRR19760621	1	
WSC10040	35	0.979	0.5841		0
WRC10030	10		IND19700126	1	
WSC10030	5	0.979	0.5841		0
WRC10010	47		IRR19530731	1	
WSC10010	7	0.979	0.5841		0
SO	40.42	47			
WRF10170	62.5		IRR19660630	1	
WRD10090	0		REC19461121	1	
WSD10090	135	0.979	0.5841		0
WRD10080	0		REC19600211	1	
WSD10080	1414	0.4012	0.856		0
WRD10070	0		REC19730312	1	
WSELWOOD	116	0.979	0.5841		0
WRD10060	7.03		IRR19670630	1	
WSD10060	28	0.979	0.5841		0
WRD10030	0		REC19741209	1	
WSD10030	36	0.979	0.5841		0
WRD10040	0		REC19741209	1	
WSD10040	114	0.979	0.5841		0
WRD10020	0		REC19740812	1	
WSD10020	294	0.979	0.5841		0
WRD10010	0		REC19740812	1	
WSD10010	330	0.979	0.5841		0
WRE10070	18.2		IRR19520630	1	
WSE10070	20	0.979	0.5841		0
WRE10060	15		IND19680318	1	

cyp03_pit129-Baseline

1	60404591301	
1	60404592001	
1	60404593301	
1	60404594002	
1	60404595001	
1	60404596001	
	60404597301	
	60404598301	
	60404599001	
1	60404600001	
	60404601301	
	60404602301	
	60404603301	
	60404604301	
	60404605301	4605
	60404605302	4605
	60404606301	
	60404607301	
	60404608301	
	60404609001	4609

WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0		REC19470922	1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0		REC19860404	1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0		REC19860729	1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0		REC19861125	1		1	10405112301	
WSF10100	277	0.979	0.5841		0			
WRA10280	0		IND19880121	1			10405167301	
WSPONDH1	477	0.979	0.5841		0			
WRB10300	0		IRR19890112	1			10405212301	

```
WSB10300    0.09    0.979  0.5841        0
WRB10260       0      IRR19890810   1                                   10405251301
WSB10260      86    0.979  0.5841        0
IFD10110  1025.6    CONST19891214   1    1                  IF5272
**
WRD10110    6180      MUN19891214   1                                   10405272301    5272
WSLKGILM   12720
WRD10110       0      REC19891214   1                                   10405272302    5272
WSLKGILM   12720
WRF10090       0      REC19900710   1                             1     10405302301
WSF10090      80    0.979  0.5841        0
WRA10260       0      IND19950522   1                                   10405529301
WSPONDH4   173.7    0.979  0.5841        0
WRE10080       0      REC19950801   1                                   10405537301
WSE10080     296    0.979  0.5841        0
WRE10090      34      IRR19980320   1                                   10405608301    5608
WSE10090    55.6    0.979  0.5841        0
WRE10090       0      REC19980320   1                                   10405608302    5608
WSE10090    55.6    0.979  0.5841        0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0    OTHER99999999   1                                   60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000      MUN99999999   1                                   60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT        0   1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT        0    175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN        0      0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN        0    300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN        0    150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN        0     50     110     170     245     340     445     550     650     790     900     950
```

```
SVLKCYPS      0    3000     6000    11000    20000    30000    47000    72000    92000   120000   186000
SALKCYPS      0     500      750     1100     1600     2100     2700     3450     4150     5100     7150
SVELLISN      0    3500     6000     7500     9250    11750    15500    20500    27500    36500    47000
SAELLISN      0     500      580      660      780      920     1090     1340     1620     1860     2200
SVLKOPNS      0      50      400     6000    18000    36000    74000   130000   200000   259000
SALKOPNS      0      50      500     1000     3000     6000     9500    12750    16250    18500
SV CADDO      0   10000    35000    70000   140000   235000   370000   560000   865000
SA CADDO      0    8500    15000    20500    27750    34500    42250    51500    64250
SV WELSH      0     500     2600     4000     8200    12000    17400    20000    30100    36000    40000    44600
SA WELSH      0     130      370      470      710      890     1130     1230     1600     1740     1865     1930
SVLKGILM      0     670     2470     4980     8230    12270    17270    23420    30860
SALKGILM      0     285      430      570      720      895     1100     1350     1630
**
** Carollo add additional SVSA curve for Pit 129.
**SVPIT129       0      94      161      251      359      479     1054     1410     2079     3759     4090     5355
**SAPIT129       0      12       16       20       23       25       33       39       50       62       72       98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129-FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ===============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ===============================================
JO
RO    -1
**
FY   1.0  241800    1000     100                              FYLOTP
**FY   1.0    48500    1000     100      10                          BOB
**FY     1    10000    1000     100      10       10405850307
**FY     1    10000    1000     100      10       10405850301
**FY     1    10000    1000     100      10       10405850306
**FY     1    10000    1000     100      10       10405850304
**FY     1    10000    1000     100      10       10405850303
**FY     1    10000    1000     100      10       10405850305
**FY     1    10000    1000     100      10       10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
UC         0.080   0.084   0.088   0.090   0.090   0.087
UC   REC   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER   0.083   0.083   0.083   0.083   0.083   0.083
```

```
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                      7            NONE
CPPPDISC  TCUSBC                      7            NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                      7             513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                      7            NONE
CP585037  A10120                      7             513
CP585009  A10120                      7            NONE
CP585010  A10120                      7            NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                      7             513
**CP585007  A10000                      7            NONE
**CP585006  A10000                      7            NONE
CP585031  PPDISC                      7             513
CP585007  PPDISC                      7            NONE
CP585006  PPDISC                      7            NONE
CP585036  585034                      7             513
CP585034  585033                      7             513
CP585033  585032                      7             513
CP585035  585032                      7             513
CP585032  585005                      7             513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                      7            NONE
**CP585004  A10000                      7            NONE
**CP585003  A10000                      7            NONE
**CP585002  A10000                      7            NONE
**CP585001  A10000                      7            NONE
CP585005  PPDISC                      7            NONE
```

cyp03_pit129-FYLOTP

```
CP585004  TCUSBC        7      NONE
CP585003  TCUSBC        7      NONE
CP585002  TCUSBC        7      NONE
CP585001  TCUSBC        7      NONE
CP585011  A10070        7      NONE
CP585012  A10010        7      NONE
CP585013  A10010        7      NONE
** add control points for A5814
CP581431  581432        7      QAD413
CP581432  A10260        7      QAD413
CP581433  A10240        7      QAD413
** add control points for A5813
CP581301  D10000        7      NONE
CP581302  D10000        7      NONE
CP581303  D10000        7      NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170        7      B10170
CP458237  B10170        7      B10170
**
CPA10370  A10340        7      QAD413
CPA10350  A10340        7      QAD413
CPA10340  A10300        7
**CPA10300  A10000        7      NONE
CPA10300  A10200        7      NONE
**
CPA10290  A10200        7      NONE
CPA10280  A10240        7      QAD413
CPA10260  A10240        7      QAD413
**CPA10240  A10000        7
CPA10240  A10200        7
CPA10200  A10000        7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000        7      513
**CPA10100  A10000        7      513
**CPA10090  A10000        7      513
CPA10120  TCUSBC        7      513
CPA10100  TCUSBC        7      513
CPA10090  TCUSBC        7      513
```

cyp03_pit129-FYLOTP

CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412

cyp03_pit129-FYLOTP

CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10130	F10080	7	NONE

```
CPF10120  F10080                        7            513
CPF10110  F10080                        7            513
CPF10100  F10080                        7         QAD512
CPF10090  F10080                        7         QAD413
CPF10080  F10005                        7            513
CPF10030  F10020                        7         QAD412
CPF10020  F10005                        7            513
CPF10005  F10000                        7
CPF10000     OUT                        0           NONE
CP 10050   10040                        7         QAD413
CP 10040   10010                        7         QAD413
CP 10020   10010                        7         QAD413
CP 10010     OUT                        7           NONE
CPQAD412     OUT                        0
CPQAD413     OUT                        0
CPQAD512     OUT                        0
CP   513     OUT                        0
CPSABINE     OUT                        2   NONE    NONE
CPSULPHR     OUT                        2   NONE    NONE
CPA240DM     OUT                        2   NONE    NONE
CPB270DM     OUT                        2   NONE    NONE
CPB70DUM     OUT                        2   NONE    NONE
CPB20MUN     OUT                        2   NONE    NONE
CPAVNGER     OUT                        2   NONE    NONE
CPDNGRFD     OUT                        2   NONE    NONE
CPHGHSPR     OUT                        2   NONE    NONE
CPJEFFSN     OUT                        2   NONE    NONE
CPLVGSTN     OUT                        2   NONE    NONE
CPORECTY     OUT                        2   NONE    NONE
**
** ==================================================================
CPA-ZERO     OUT                        2   ZERO    ZERO      -3       0
** ==================================================================
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
**WR585100      0     IND20181231   1                                104000PT129   PT129
```

```
**WSPIT129    5355
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231   1                            10405850001    5850
WR585002       0     IND20041231   1                            10405850002    5850
SO                                BACKUP
WR585003       0     IND20041231   1                            10405850003    5850
SO                                BACKUP
WR585004       0     IND20041231   1                            10405850004    5850
SO                                BACKUP
WR585005       0     IND20041231   1                            10405850005    5850
SO                                BACKUP
WR585006       0     IND20041231   1                            10405850006    5850
SO                                BACKUP
WR585007       0     IND20041231   1                            10405850007    5850
SO                                BACKUP
WR585008       0     IND20041231   1                            10405850008    5850
SO                                BACKUP
WR585009       0     IND20041231   1                            10405850009    5850
SO                                BACKUP
WR585010       0     IND20041231   1                            10405850010    5850
SO                                BACKUP
WR585011       0     IND20041231   1                            10405850011    5850
SO                                BACKUP
WR585012       0     IND20041231   1                            10405850012    5850
SO                                BACKUP
WR585013       0     IND20041231   1                            10405850013    5850
SO                                BACKUP
WR585037       0     IND20041231   1                            10405850307    5850
WSR58507   525.6   0.979  0.5841
WR585031       0     IND20041231   1                            10405850301    5850
WSR58501   271.4   0.979  0.5841
WR585036       0     IND20041231   1                            10405850306    5850
WSR58506     327   0.979  0.5841
WR585034       0     IND20041231   1                            10405850304    5850
WSR58504   509.3   0.979  0.5841
WR585033       0     IND20041231   1                            10405850303    5850
WSR58503   287.3   0.979  0.5841
```

WR585035	0		IND20041231	1			10405850305	5850
WSR58505	604.8	0.4012	0.856					
WR585032	0		IND20041231	1			10405850302	5850
WSR58502	245.1	0.979	0.5841					
**								
** APPLICATION 5814								
WR581431	0		OTHER20031028	1			10405814301	
WS HR9	356	0.979	0.5841					
WR581432	0		OTHER20031028	1			10405814302	
WS HR21	263	0.979	0.5841					
WR581433	0		OTHER20031028	1			10405814303	
WS HR10	1495	0.4012	0.856					
** APPLICATION 5813								
WR581301	685		581320031001	1			10405813001	
WR581303	0		581320031001	1			10405813003	
SO				BACKUP				
WR581302	0		581320031001	1			10405813002	
SO				BACKUP				
WRD10130	0		REC19830222	1			10404334301	4334
WSWHTOAK	6.7	0.979	0.5841		0			
WRD10160	0		REC19830222	1			10404334302	4334
WSBASSLK	3.4	0.979	0.5841		0			
WRD10140	0		REC19830222	1			10404334303	4334
WSDOGWOD	6	0.979	0.5841		0			
WRD10180	0		REC19830222	1			10404334304	4334
WSLKAUTM	130	0.979	0.5841		0			
WRD10170	0		REC19830222	1			10404334305	4334
WSCATFSH	5	0.979	0.5841		0			
WRD10150	0		REC19830222	1			10404334306	4334
WSLKPINE	10.5	0.979	0.5841		0			
WRD10190	0		REC19830222	1			10404334307	4334
WSLKWALL	5	0.979	0.5841		0			
WRF10080	2343		MUN19830418	1		1	10404349001	4349
WSF10080	8.29	0.979	0.5841		0			
SO	3293.45	2343						
WRF10080	1281		IND19830418	1		1	10404349002	4349
WSF10080	8.29	0.979	0.5841		0			
SO	3293.45	1281						

```
WRB10250       0      REC19841127   1                                         10404522301
WSB10250     380   0.979  0.5841          0
WRF10180   202.5      IRR19841218   1                                   1     10404525101
WRA10370       0      REC19750106   1                                         60404558301
WSA10370     350   0.979  0.5841          0
WRA10350       0      REC19751215   1                                         60404559301
WSA10350     230   0.979  0.5841          0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500      MUN19700720   1                                         60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000      MUN19660131   1                                         60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210      IRR19700720   1                                         60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590      IND19700720   1                                         60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0      REC19660131   1                                         60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61      IRR19630831   1                                         60404561001
WRA10290    24.0      IRR19630801   1                                         60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300      IND19700406   1                                         60404563301    4563
WSLKMONT   40100
**
```

```
WRA10240    1000     IND19730604   1                                   60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1                                   60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                   60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1                                   60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                   60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1                                 2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                    1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                   60404564304    4564   BOBROR
**
** ===================================================================
WRA10120    1680     MUN19550822   1                                   60404565301    4565
WSTANKSL    2700  0.4012   0.856        0
WRA10120     550     IND19550822   1                                   60404565302    4565
WSTANKSL    2700  0.4012   0.856        0
WRA10120       0     REC19550822   1                                   60404565303    4565
WSTANKSL    2700  0.4012   0.856        0
WRA10090   21.44     IRR19591231   1                                   60404566301
WSA10090    0.23   0.979  0.5841        0
WRA10100       6     IRR19561231   1                                   60404567301
```

```
WSA10100      5   0.979  0.5841        0
WRA10050    7.5     IRR19631231   1                              60404568301
WSA10050     35   0.979  0.5841        0
WRA10070    400     MUN19380317   1                              60404569301    4569
WSNEWCTY   1176  0.4012   0.856        0
WRA10070      0     REC19380317   1                              60404569302    4569
WSNEWCTY   1176  0.4012   0.856        0
WRA10060    144     MUN19750120   1                              60404570301    4570
WSOLDCTY    100   0.979  0.5841        0
WRA10060      0     REC19750120   1                              60404570302    4570
WSOLDCTY    100   0.979  0.5841        0
WRA10040      4     IRR19631231   1                              60404571301
WSA10040     12   0.979  0.5841        0
WRA10030    4.4     IRR19631231   1                              60404572301
WSA10030     10   0.979  0.5841        0
WRE10020   25.3     IND19850604   1                              10404573301
WSE10020     42   0.979  0.5841        0
WRA10010     11     IRR19551231   1                              60404573001
WRB10320      0     IRR19511231   1                              60404574001    4574
WSOFF320    5.0   0.979  0.5841        0
SO         5.43    1.40
WRB10320    1.4     IRR19511231   1                              60404574301    4574
WSB10320    0.5   0.979  0.5841        0
WSOFF320    5.0   0.979  0.5841        0
OR          5.0
SO         5.43    1.40
WRB10290      0     REC19730430   1                              60404575301
WSB10290     80   0.979  0.5841        0
**
**
**
**  Welsh Reservoir
WRB10270  11000     IND19730910   1                              60404576301    4576
WS WELSH  23587
**
**
WRB10270      0     REC19730910   1                              60404576302    4576
WS WELSH  23587
```

```
**
**
**
WRB10230     124     IRR19500930   1                                      60404577301
WSB10230      96   0.979  0.5841        0
WRB10220       6     IRR19521231   1                                      60404578301
WSB10220       1   0.979  0.5841        0
WRB10210      75     IRR19531231   1                                      60404579301
WSB10210      64   0.979  0.5841        0
WRB10200       2     IRR19581231   1                                      60404580301
WSB10200     0.5   0.979  0.5841        0
WRB10180       0     REC19690922   1                                      60404581301
WSB10180     510   0.979  0.5841        0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                      60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                      60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                      60404582004    4582 ELLISON
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                          60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856        0
WR458232       0   OTHER19720508                                               4582BU    4582  barnes
WSBARNES   24000
SO                        458237   BACKUP
**
**
```

```
WRB10120    38.3      IRR19620731   1                                        60404583301
WSB10120    4.79   0.979  0.5841        0
WRB10110    14.2      IRR19480930   1                                        60404584301
WSB10110      60   0.979  0.5841        0
WRB10100    0.56      IRR19550331   1                                        60404585301
WSB10100      50   0.979  0.5841        0
WRB10090       1      IRR19641231   1                                        60404586301
WSB10090      12   0.979  0.5841        0
WRB10080     150      IRR19561231   1                                        60404587301
WSSIMPSN    2500  0.4012   0.856        0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668      IND19600504   1                                        60404588301    4588
WSJOHNSN   10100
**
WRB10070       0      REC19600504   1                                        60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0      REC19751208   1                                        60404589301
WSB10050     240   0.979  0.5841        0
**
**
**  Lake O'the Pines
** ==============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070      MUN19570916   1                                               1MUN    4590   FYLOTP
WSLKOPNS  251000        -1
WRB10040  151800      IND19570916   1                                               2IND    4590   FYLOTP
WSLKOPNS  251000
** ==============================================================================
**
WRF10250       8      IRR19670430   1                           1            60404591301
WSF10250       6   0.979  0.5841        0
WRF10230   96.88      IRR19690930   1                           1            60404592001
WRF10240      85      IRR19620531   1                           1            60404593301
```

WSF10240	100	0.979	0.5841		0			
WRF10220	1080		IRR19550103	1		1	60404594002	
WRF10210	2000		MUN19630218	1		1	60404595001	
WRF10190	80.21		IRR19570319	1		1	60404596001	
WRC10040	25		IRR19760621	1			60404597301	
WSC10040	35	0.979	0.5841		0			
WRC10030	10		IND19700126	1			60404598301	
WSC10030	5	0.979	0.5841		0			
WRC10010	47		IRR19530731	1			60404599001	
WSC10010	7	0.979	0.5841		0			
SO	40.42	47						
WRF10170	62.5		IRR19660630	1		1	60404600001	
WRD10090	0		REC19461121	1			60404601301	
WSD10090	135	0.979	0.5841		0			
WRD10080	0		REC19600211	1			60404602301	
WSD10080	1414	0.4012	0.856		0			
WRD10070	0		REC19730312	1			60404603301	
WSELWOOD	116	0.979	0.5841		0			
WRD10060	7.03		IRR19670630	1			60404604301	
WSD10060	28	0.979	0.5841		0			
WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	

cyp03_pit129-FYLOTP

WRF10140	165.21	MIN19690224		1		1	60404613001	
WRF10130	7558	MUN19470418		1		1	60404614001	4614
WRF10130	8442	MUN19561127		1		1	60404614002	4614
WRF10120	10	IRR19751215		1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0	REC19690811		1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0	REC19720207		1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42	IRR19790221		1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51	IRR19810413		1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0	REC19760524		1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0	REC19781016		1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0	REC19470922		1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0	REC19860404		1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0	REC19860729		1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0	REC19861125		1		1	10405112301	
WSF10100	277	0.979	0.5841		0			
WRA10280	0	IND19880121		1			10405167301	
WSPONDH1	477	0.979	0.5841		0			
WRB10300	0	IRR19890112		1			10405212301	
WSB10300	0.09	0.979	0.5841		0			
WRB10260	0	IRR19890810		1			10405251301	
WSB10260	86	0.979	0.5841		0			
IFD10110	1025.6	CONST19891214		1	1	IF5272		
**								
WRD10110	6180	MUN19891214		1			10405272301	5272
WSLKGILM	12720							
WRD10110	0	REC19891214		1			10405272302	5272
WSLKGILM	12720							
WRF10090	0	REC19900710		1		1	10405302301	

```
WSF10090      80   0.979  0.5841        0
WRA10260       0     IND19950522   1                                    10405529301
WSPONDH4   173.7   0.979  0.5841        0
WRE10080       0     REC19950801   1                                    10405537301
WSE10080     296   0.979  0.5841        0
WRE10090      34     IRR19980320   1                                    10405608301    5608
WSE10090    55.6   0.979  0.5841        0
WRE10090       0     REC19980320   1                                    10405608302    5608
WSE10090    55.6   0.979  0.5841        0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                    60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                    60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
```

```
** Carollo add additional SVSA curve for Pit 129.
**SVPIT129       0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
**SAPIT129       0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129.DIS

```
**
** Carollo add additional CPs for 1 reservoir (pit 129) ad flow analyses.
FD585100  A10000       0
WP585100 1.26875
FDTCUSBC  A10000       0
WPTCUSBC 35.3043
FDPPDISC  A10000       0
WPPPDISC 21.8636
**
**TXU app 5850, 6/24/05, kb
** TXU MINING add additional CPs for 13 diversion and 7 reservoirs
FD585008  A10000       0
WP585008  5.0368
FD585037  A10000       0
WP585037  0.4791
FD585009  A10000       0
WP585009  1.1166
FD585010  A10000       0
WP585010  1.2373
FD585031  A10000       0
WP585031  0.4284
FD585007  A10000       0
WP585007  0.2604
FD585006  A10000       0
WP585006  2.8062
FD585036  A10000       0
WP585036  0.4570
FD585034  A10000       0
WP585034  0.5905
FD585033  A10000       0
WP585033  2.9988
FD585035  A10000       0
WP585035  0.6235
FD585032  A10000       0
WP585032  4.2301
```

```
FD585005  A10000       0
WP585005  5.8348
FD585004  A10000       0
WP585004  0.1356
FD585003  A10000       0
WP585003  1.9687
FD585002  A10000       0
WP585002  0.1512
FD585001  A10000       0
WP585001  0.1708
FD585011  A10000       0
WP585011  2.2375
FD585012  A10000       0
WP585012  2.6298
FD585013  A10000       0
WP585013  1.0074
**
**  Flow Distribution and Coefficients for all nine scenarios
** ADD ADDITIONAL CPS FOR A5814
FD581431  A10000       0
WP581431    .855
FD581432  A10000       0
WP581432    .930
FD581433  A10000       0
WP581433    .401
** ADD ADDITIONAL CPS FOR A5813
FD581301  D10000       0
WP581301   7.151
**
FD581302  D10000       0
WP581302   0.303
**
FD581303  D10000       0
WP581303   2.545
**
```

```
** ADD ADDITIONAL CPS FOR BARNES CREEK WATERSHED
FD458232  B10000       0  A10000
WP458232   3.364
**
FD458237  B10000       0  A10000
WP458237    .227
**
FDA10370  A10000       0
FDA10350  A10000       0
FDA10340  A10000       0
FDA10300  A10000       0
FDA10290  A10000       0
FDA10280  A10000       0
FDA10260  A10000       0
FDA10240  A10000       0
FDA10200  A10000       0
FDA10120  A10000       0
FDA10100  A10000       0
FDA10090  A10000       0
FDA10070  A10000       0
FDA10060  A10000       0
FDA10050  A10000       0
FDA10040  A10000       0
FDA10030  A10000       0
FDA10020  A10000       0
FDA10010  A10000       0
FDB10320  B10000       0  A10000
FDB10310  B10000       0  A10000
FDB10300  B10000       0  A10000
FDB10290  B10000       0  A10000
FDB10270  B10000       0  A10000
FDB10260  B10000       0  A10000
FDB10250  B10000       0  A10000
FDB10230  B10000       0  A10000
FDB10220  B10000       0  A10000
```

FDB10210	B10000	0	A10000
FDB10200	B10000	0	A10000
FDB10180	B10000	0	A10000
FDB10170	B10000	0	A10000
FDB10150	B10000	1	A10000
FDB10120	B10000	0	A10000
FDB10110	B10000	0	A10000
FDB10100	B10000	0	A10000
FDB10090	B10000	0	A10000
FDB10080	B10000	0	A10000
FDB10070	B10000	0	A10000
FDB10050	B10000	0	A10000
FDB10040	B10000	1	A10000
FDC10050	C10000	0	
FDC10040	C10000	0	
FDC10030	C10000	0	
FDC10010	C10000	0	
FDD10190	D10000	0	
FDD10180	D10000	0	
FDD10170	D10000	0	
FDD10160	D10000	0	
FDD10150	D10000	0	
FDD10140	D10000	0	
FDD10130	D10000	0	
FDD10120	D10000	0	
FDD10110	D10000	0	
FDD10090	D10000	0	
FDD10080	D10000	0	
FDD10070	D10000	0	
FDD10060	D10000	0	
FDD10050	D10000	0	
FDD10030	D10000	0	
FDD10040	D10000	0	
FDD10020	D10000	0	
FDD10010	D10000	0	

```
FDE10090  E10000      0  D10000
FDE10080  E10000      0  D10000
FDE10070  E10000      0  D10000
FDE10060  E10000      1  D10000
FDE10050  E10000      0  D10000
FDE10040  E10000      1  D10000
FDE10020  E10000      0  D10000
FDE10010  E10000      0  D10000
FDF10250  F10000      0  B10000  C10000  E10000
FDF10240  F10000      0  B10000  C10000  E10000
FDF10230  F10000      1  B10000  C10000  E10000
FDF10220  F10000      1  B10000  C10000  E10000
FDF10210  F10000      1  B10000  C10000  E10000
FDF10190  F10000      1  B10000  C10000  E10000
FDF10180  F10000      1  C10000  B10000  E10000
FDF10170  F10000      1  C10000  B10000  E10000
FDF10160  F10000      1  E10000  B10000  C10000
FDF10140  F10000      0  B10000  C10000  E10000
FDF10130  F10000      3  B10000  C10000  E10000
FDF10120  F10000      0  B10000  C10000  E10000
FDF10110  F10000      0  B10000  C10000  E10000
FDF10100  F10000      0  B10000  C10000  E10000
FDF10090  F10000      0  B10000  C10000  E10000
FDF10080  F10000      3  B10000  C10000  E10000
FDF10030  F10000      0  B10000  C10000  E10000
FDF10020  F10000      0  B10000  C10000  E10000
FDF10005  F10000      3  B10000  C10000  E10000
FD 10050  F10000      0  B10000  C10000  E10000
FD 10040  F10000      0  B10000  C10000  E10000
FD 10020  F10000      0  B10000  C10000  E10000
FD 10010  F10000      0  B10000  C10000  E10000
**
**  Watershed Parameters
**
WPA10370  6.8736   72.93   43.42
```

WPA10350	0.705	32.78	44.21
WPA10340	74.0257	65.96	43.92
WPA10300	165.78	68.53	43.83
WPA10290	3.8945	68.95	45.12
WPA10280	0.8391	69.57	45.12
WPA10260	2.4997	62.95	45.24
WPA10240	36.26	71.65	45.28
WPA10200	240.042	70.22	44.26
WPA10120	8.6031	69.44	46.42
WPA10100	0.149	65.79	46.3
WPA10090	0.8048	69.67	46.51
WPA10070	3.6154	62.41	46.49
WPA10060	0.4779	70.53	46.57
WPA10050	0.0784	79.65	46.54
WPA10040	0.1014	66.97	46.46
WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10150	682.23	69.54	44.98
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79

WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10000	885.97	68.96	45.11
WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99
WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	7.1486	67.87	45.01
WPD10040	0.7809	64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69

WPE10050	0.4741	57.7	46.38
WPE10040	594.00	65.86	44.86
WPE10020	0.4527	65.03	47.46
WPE10010	9.9421	61.84	47.5
WPE10000	691.28	65.25	45.16
WPF10250	0.1139	68.6	46.67
WPF10240	1.0911	58.52	46.67
WPF10230	927.86	68.58	45.18
WPF10220	940.39	68.52	45.2
WPF10210	941.34	68.52	45.2
WPF10190	947.39	68.51	45.21
WPF10180	371.10	64.64	46.75
WPF10170	388.06	64.64	46.75
WPF10160	709.18	65.26	45.21
WPF10140	5.7082	64.03	47.1
WPF10130	2080.13	66.58	45.53
WPF10120	0.4119	55.16	47.76
WPF10110	2.9505	63.56	47.78
WPF10100	1.0985	61.45	47.81
WPF10090	0.3736	55	47.8
WPF10080	2158.50	66.53	45.62
WPF10030	1.1542	61.58	47.74
WPF10020	304.96	61.15	47.59
WPF10005	2791.60	66.21	46.08
WPF10000	2791.60	66.21	46.08
WP 10050	0.8384	75.04	47.24
WP 10040	3.8182	74.8	47.25
WP 10020	0.5407	67.2	47.12
WP 10010	105.81	34.29	47.2
WPSABINE	100	100	100
WPSULPHR	100	100	100
WPA240DM	100	100	100
WPB270DM	100	100	100
WPB70DUM	100	100	100
WPB20MUN	100	100	100

cyp03_pit129.DIS

WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
**WPQAD412	100	100	100
**WPQAD413	100	100	100
**WPQAD512	100	100	100
**WP 513	100	100	100

ED

cyp03_pit129.EVA

EVA10200	1948	0.129	0.151	0.019	0.073	0.032	0.442	0.244	0.375	0.467	0.225	-0.059	0.051
EVB10170	1948	0.015	0.061	0.138	0.068	-0.067	0.421	0.235	0.315	0.386	0.217	-0.155	0.031
EVB10070	1948	-0.016	0.053	0.162	0.070	-0.081	0.417	0.246	0.297	0.370	0.216	-0.186	0.023
EVF10005	1948	-0.037	0.069	0.204	0.076	-0.056	0.413	0.273	0.299	0.364	0.249	-0.219	0.027
EVA10340	1948	0.164	0.185	-0.004	0.076	0.075	0.447	0.252	0.401	0.493	0.243	-0.034	0.063
EVA10240	1948	0.142	0.163	0.009	0.074	0.046	0.444	0.247	0.383	0.477	0.229	-0.049	0.055
EVb10040	1948	-0.024	0.059	0.177	0.072	-0.072	0.415	0.256	0.297	0.368	0.228	-0.198	0.025
EVB10270	1948	0.075	0.104	0.066	0.069	-0.024	0.433	0.235	0.342	0.428	0.210	-0.101	0.038
EV 513	1948	-0.050	0.080	0.230	0.080	-0.040	0.410	0.290	0.300	0.360	0.270	-0.240	0.030
EVQAD412	1948	0.350	0.400	-0.240	0.100	0.280	0.490	0.320	0.480	0.650	0.250	0.100	0.080
EVQAD413	1948	0.050	0.000	0.030	0.050	-0.160	0.430	0.160	0.290	0.390	0.110	-0.080	0.010
EVQAD512	1948	0.100	0.080	0.170	0.060	0.020	0.420	0.210	0.420	0.420	0.310	-0.080	0.090
EVA10200	1949	-0.366	0.055	-0.057	-0.007	0.125	0.281	0.089	0.480	0.368	0.024	0.214	-0.027
EVB10170	1949	-0.427	0.040	-0.034	-0.007	0.191	0.080	0.007	0.462	0.352	-0.073	0.320	-0.068
EVB10070	1949	-0.427	0.033	-0.040	-0.009	0.187	0.049	-0.049	0.428	0.330	-0.094	0.326	-0.080
EVF10005	1949	-0.423	0.031	-0.034	-0.034	0.189	0.086	-0.086	0.398	0.318	-0.165	0.341	-0.080
EVA10340	1949	-0.472	0.062	-0.079	-0.043	0.172	0.326	0.142	0.542	0.395	-0.077	0.297	-0.031
EVA10240	1949	-0.469	0.057	-0.079	-0.032	0.171	0.274	0.115	0.528	0.384	-0.064	0.297	-0.040
EVB10040	1949	-0.425	0.033	-0.038	-0.018	0.187	0.062	-0.062	0.417	0.326	-0.120	0.331	-0.080

EVB10270	1949	-0.450	0.047	-0.062	-0.011	0.178	0.152	0.054	0.493	0.364	-0.050	0.305	-0.059
EVQAD412	1949	-0.580	0.070	-0.230	-0.100	0.100	0.650	0.160	0.550	0.370	-0.120	0.260	-0.020
EVQAD413	1949	-0.440	0.040	-0.060	0.070	0.180	-0.070	0.070	0.520	0.370	0.130	0.280	-0.080
EVQAD512	1949	-0.380	0.080	0.080	-0.040	0.250	0.270	0.280	0.620	0.480	-0.100	0.330	0.010
EV 513	1949	-0.420	0.030	-0.030	-0.050	0.190	0.110	-0.110	0.380	0.310	-0.210	0.350	-0.080
EVA10200	1950	0.054	0.065	0.127	0.022	0.040	0.250	0.121	0.420	-0.063	0.246	0.119	0.159
EVB10170	1950	0.004	0.045	0.157	0.019	0.013	0.261	0.116	0.476	-0.211	0.218	0.136	0.168
EVB10070	1950	-0.003	0.047	0.153	0.027	0.003	0.250	0.106	0.463	-0.237	0.207	0.127	0.157
EVF10005	1950	-0.007	0.031	0.157	0.023	0.019	0.244	0.133	0.473	-0.214	0.203	0.111	0.147
EVA10340	1950	0.048	0.035	0.136	-0.009	0.080	0.236	0.153	0.473	-0.107	0.250	0.169	0.192
EVA10240	1950	0.041	0.042	0.135	-0.001	0.063	0.236	0.136	0.464	-0.137	0.243	0.167	0.188
EVB10040	1950	-0.005	0.041	0.155	0.025	0.009	0.248	0.116	0.467	-0.229	0.205	0.121	0.153
EVB10270	1950	0.022	0.051	0.143	0.013	0.028	0.246	0.112	0.461	-0.193	0.228	0.154	0.178
EVQAD412	1950	0.110	0.050	0.060	-0.020	0.150	0.120	0.140	0.370	-0.060	0.260	0.210	0.190
EVQAD413	1950	0.010	0.100	0.140	0.040	-0.050	0.270	0.020	0.430	-0.310	0.220	0.180	0.190
EVQAD512	1950	0.020	-0.020	0.220	-0.040	0.100	0.360	0.260	0.630	0.010	0.280	0.140	0.220
EV 513	1950	-0.010	0.020	0.160	0.020	0.030	0.240	0.150	0.480	-0.200	0.200	0.100	0.140
EVA10200	1951	-0.131	-0.015	0.113	0.023	0.124	0.166	0.147	0.376	-0.046	0.160	0.033	-0.009
EVB10170	1951	-0.208	-0.024	0.080	0.021	0.143	-0.026	0.148	0.333	-0.132	0.129	0.038	-0.072

cyp03_pit129.EVA

EVB10070	1951	-0.233	-0.020	0.055	0.019	0.160	-0.042	0.136	0.307	-0.141	0.136	0.030	-0.102
EVF10005	1951	-0.243	-0.014	0.015	0.056	0.166	0.008	0.151	0.297	-0.116	0.163	0.036	-0.132
EVA10340	1951	-0.146	-0.041	0.115	0.060	0.115	0.165	0.178	0.409	-0.113	0.135	0.083	0.000
EVA10240	1951	-0.160	-0.039	0.112	0.043	0.124	0.122	0.165	0.393	-0.127	0.128	0.073	-0.011
EVB10040	1951	-0.237	-0.018	0.040	0.032	0.162	-0.024	0.141	0.303	-0.132	0.146	0.032	-0.113
EVB10270	1951	-0.190	-0.033	0.101	0.017	0.138	0.024	0.146	0.357	-0.143	0.121	0.050	-0.042
EVQAD412	1951	-0.140	-0.060	0.090	0.080	0.150	0.440	0.150	0.440	-0.160	0.150	0.130	0.020
EVQAD413	1951	-0.200	-0.040	0.180	-0.100	0.140	-0.200	0.090	0.340	-0.220	0.050	0.010	-0.010
EVQAD512	1951	-0.070	-0.030	0.160	0.130	0.030	0.110	0.280	0.470	0.010	0.150	0.090	0.050
EV 513	1951	-0.250	-0.010	-0.010	0.080	0.170	0.040	0.160	0.290	-0.100	0.180	0.040	-0.150
EVA10200	1952	-0.056	-0.105	-0.015	-0.042	0.026	0.389	0.233	0.360	0.455	0.275	-0.282	-0.151
EVB10170	1952	-0.110	-0.155	-0.059	-0.073	0.031	0.384	0.271	0.353	0.445	0.250	-0.333	-0.192
EVB10070	1952	-0.120	-0.159	-0.057	-0.066	0.037	0.386	0.267	0.339	0.434	0.243	-0.318	-0.183
EVF10005	1952	-0.126	-0.178	-0.047	-0.075	0.027	0.395	0.257	0.358	0.425	0.241	-0.264	-0.181
EVA10340	1952	-0.081	-0.163	-0.056	-0.094	0.004	0.385	0.244	0.398	0.479	0.276	-0.312	-0.227
EVA10240	1952	-0.086	-0.158	-0.059	-0.086	0.012	0.384	0.249	0.382	0.473	0.271	-0.325	-0.220
EVB10040	1952	-0.122	-0.166	-0.053	-0.069	0.033	0.389	0.263	0.346	0.431	0.243	-0.299	-0.183
EVB10270	1952	-0.100	-0.151	-0.062	-0.074	0.028	0.382	0.262	0.355	0.458	0.259	-0.343	-0.204
EVQAD412	1952	-0.070	-0.180	-0.050	-0.090	-0.010	0.390	0.170	0.390	0.500	0.300	-0.250	-0.260

EVQAD413	1952	-0.100	-0.100	-0.090	-0.040	0.070	0.360	0.300	0.280	0.460	0.250	-0.490	-0.190
EVQAD512	1952	-0.060	-0.170	-0.050	-0.140	-0.030	0.390	0.300	0.500	0.490	0.280	-0.310	-0.230
EV 513	1952	-0.130	-0.190	-0.040	-0.080	0.020	0.400	0.250	0.370	0.420	0.240	-0.230	-0.180
EVA10200	1953	-0.081	-0.053	-0.045	-0.017	-0.049	0.391	0.104	0.438	0.414	0.266	-0.012	-0.121
EVB10170	1953	-0.118	-0.063	-0.117	-0.094	0.021	0.369	0.118	0.470	0.397	0.242	0.029	-0.186
EVB10070	1953	-0.137	-0.073	-0.123	-0.114	0.023	0.354	0.090	0.467	0.393	0.240	0.023	-0.199
EVF10005	1953	-0.127	-0.096	-0.127	-0.099	0.027	0.333	0.084	0.457	0.391	0.240	0.021	-0.230
EVA10340	1953	-0.068	-0.084	-0.092	0.014	-0.049	0.395	0.145	0.445	0.417	0.258	0.021	-0.178
EVA10240	1953	-0.085	-0.079	-0.096	-0.011	-0.043	0.392	0.131	0.450	0.414	0.255	0.020	-0.175
EVB10040	1953	-0.133	-0.081	-0.125	-0.109	0.025	0.347	0.088	0.463	0.393	0.240	0.023	-0.210
EVB10270	1953	-0.113	-0.066	-0.107	-0.065	-0.012	0.383	0.116	0.462	0.405	0.248	0.023	-0.174
EVQAD412	1953	-0.090	-0.160	-0.070	0.120	-0.210	0.390	0.040	0.380	0.440	0.280	-0.030	-0.200
EVQAD413	1953	-0.170	0.000	-0.110	-0.160	0.010	0.420	0.110	0.500	0.400	0.240	0.030	-0.100
EVQAD512	1953	0.050	-0.030	-0.090	0.040	0.080	0.420	0.330	0.490	0.410	0.250	0.080	-0.170
EV 513	1953	-0.120	-0.110	-0.130	-0.090	0.030	0.320	0.080	0.450	0.390	0.240	0.020	-0.250
EVA10200	1954	-0.091	0.179	0.234	0.088	-0.142	0.499	0.487	0.627	0.383	-0.156	0.019	-0.042
EVB10170	1954	-0.117	0.204	0.245	0.084	-0.239	0.553	0.548	0.636	0.418	-0.310	-0.013	-0.076
EVB10070	1954	-0.120	0.196	0.233	0.086	-0.258	0.549	0.533	0.601	0.416	-0.281	-0.026	-0.084
EVF10005	1954	-0.114	0.217	0.243	0.119	-0.228	0.574	0.556	0.570	0.431	-0.238	-0.047	-0.063

EVA10340	1954	-0.120	0.245	0.289	0.124	-0.120	0.561	0.617	0.722	0.403	-0.308	0.042	-0.034
EVA10240	1954	-0.123	0.231	0.275	0.110	-0.150	0.550	0.596	0.708	0.399	-0.309	0.037	-0.049
EVB10040	1954	-0.118	0.204	0.237	0.098	-0.247	0.558	0.541	0.590	0.421	-0.266	-0.034	-0.077
EVB10270	1954	-0.124	0.207	0.252	0.085	-0.212	0.541	0.557	0.670	0.402	-0.314	0.015	-0.073
EVQAD412	1954	-0.160	0.260	0.300	0.180	0.000	0.520	0.650	0.750	0.330	-0.180	0.120	-0.020
EVQAD413	1954	-0.140	0.130	0.200	-0.020	-0.350	0.470	0.460	0.700	0.370	-0.420	0.040	-0.150
EVQAD512	1954	-0.060	0.310	0.350	0.140	-0.080	0.660	0.700	0.780	0.500	-0.440	-0.010	0.030
EV 513	1954	-0.110	0.230	0.250	0.140	-0.210	0.590	0.570	0.550	0.440	-0.210	-0.060	-0.050
EVA10200	1955	-0.026	-0.056	0.161	0.079	0.032	0.374	0.237	0.118	0.202	0.227	0.179	0.084
EVB10170	1955	-0.071	-0.106	0.148	0.099	0.031	0.337	0.200	0.000	0.158	0.198	0.247	0.069
EVB10070	1955	-0.083	-0.120	0.156	0.103	0.010	0.323	0.157	-0.023	0.142	0.185	0.227	0.060
EVF10005	1955	-0.093	-0.132	0.189	0.126	-0.002	0.333	0.147	-0.039	0.190	0.243	0.223	0.060
EVA10340	1955	-0.044	-0.075	0.172	0.104	0.072	0.401	0.328	0.070	0.237	0.297	0.290	0.100
EVA10240	1955	-0.049	-0.081	0.162	0.097	0.062	0.385	0.299	0.058	0.206	0.262	0.278	0.093
EVB10040	1955	-0.087	-0.124	0.168	0.111	0.006	0.327	0.153	-0.029	0.159	0.206	0.225	0.060
EVB10270	1955	-0.061	-0.094	0.146	0.091	0.043	0.352	0.237	0.027	0.158	0.203	0.256	0.078
EVQAD412	1955	-0.040	-0.070	0.230	0.100	0.050	0.450	0.370	0.110	0.250	0.360	0.270	0.120
EVQAD413	1955	-0.050	-0.080	0.050	0.030	0.050	0.290	0.190	0.030	-0.010	0.000	0.240	0.060
EVQAD512	1955	-0.020	-0.050	0.160	0.140	0.150	0.440	0.450	0.100	0.390	0.420	0.380	0.120

EV 513	1955	-0.100	-0.140	0.210	0.140	-0.010	0.340	0.140	-0.050	0.220	0.280	0.220	0.060
EVA10200	1956	0.005	-0.102	0.143	0.095	0.120	0.288	0.389	0.460	0.414	0.191	-0.135	0.028
EVB10170	1956	-0.038	-0.180	0.095	0.067	0.055	0.234	0.378	0.385	0.343	0.130	-0.122	-0.007
EVB10070	1956	-0.043	-0.184	0.053	0.033	0.031	0.193	0.317	0.343	0.297	0.100	-0.127	-0.023
EVF10005	1956	-0.053	-0.169	0.051	0.037	0.006	0.209	0.319	0.341	0.299	0.100	-0.129	-0.033
EVA10340	1956	-0.022	-0.130	0.226	0.182	0.162	0.366	0.575	0.553	0.512	0.225	-0.136	0.036
EVA10240	1956	-0.022	-0.142	0.195	0.153	0.148	0.328	0.526	0.517	0.473	0.202	-0.136	0.028
EVB10040	1956	-0.047	-0.179	0.053	0.035	0.022	0.199	0.317	0.343	0.297	0.100	-0.127	-0.027
EVB10270	1956	-0.028	-0.167	0.130	0.096	0.102	0.259	0.428	0.436	0.390	0.154	-0.130	0.008
EVQAD412	1956	0.000	-0.060	0.270	0.230	0.290	0.390	0.640	0.680	0.610	0.260	-0.190	0.050
EVQAD413	1956	-0.010	-0.230	0.060	0.020	0.110	0.140	0.310	0.350	0.290	0.100	-0.120	0.010
EVQAD512	1956	-0.040	-0.140	0.360	0.290	0.110	0.550	0.780	0.620	0.630	0.320	-0.080	0.070
EV 513	1956	-0.060	-0.160	0.050	0.040	-0.010	0.220	0.320	0.340	0.300	0.100	-0.130	-0.040
EVA10200	1957	-0.118	-0.114	-0.141	-0.201	0.065	0.170	0.285	0.304	-0.029	-0.148	-0.176	0.007
EVB10170	1957	-0.191	-0.215	-0.224	-0.431	0.088	0.047	0.240	0.251	-0.110	-0.392	-0.246	0.014
EVB10070	1957	-0.204	-0.240	-0.234	-0.431	0.131	0.017	0.190	0.230	-0.117	-0.438	-0.257	0.016
EVF10005	1957	-0.195	-0.246	-0.219	-0.412	0.216	0.019	0.196	0.236	-0.101	-0.488	-0.253	0.043
EVA10340	1957	-0.138	-0.122	-0.182	-0.281	0.066	0.171	0.420	0.327	-0.105	-0.231	-0.180	0.014
EVA10240	1957	-0.152	-0.140	-0.196	-0.303	0.060	0.143	0.377	0.307	-0.114	-0.253	-0.193	0.006

EVB10040	1957	-0.201	-0.242	-0.229	-0.424	0.161	0.017	0.192	0.232	-0.111	-0.456	-0.255	0.026
EVB10270	1957	-0.179	-0.185	-0.219	-0.372	0.059	0.083	0.287	0.269	-0.122	-0.321	-0.225	0.001
EVQAD412	1957	-0.110	-0.050	-0.170	0.040	0.160	0.260	0.510	0.360	-0.160	-0.080	-0.100	-0.010
EVQAD413	1957	-0.230	-0.220	-0.280	-0.490	-0.140	0.010	0.170	0.210	-0.170	-0.280	-0.270	-0.070
EVQAD512	1957	-0.090	-0.090	-0.120	-0.500	-0.010	0.230	0.570	0.400	0.000	-0.260	-0.190	0.080
EV 513	1957	-0.190	-0.250	-0.210	-0.400	0.270	0.020	0.200	0.240	-0.090	-0.520	-0.250	0.060
EVA10200	1958	-0.005	0.064	0.001	-0.070	0.232	0.109	0.123	0.094	-0.086	0.109	-0.099	0.046
EVB10170	1958	-0.015	0.067	-0.025	-0.151	0.342	-0.039	0.132	-0.010	-0.314	0.034	-0.087	0.075
EVB10070	1958	-0.020	0.060	-0.028	-0.179	0.364	-0.093	0.109	-0.048	-0.378	0.029	-0.094	0.077
EVF10005	1958	-0.014	0.060	0.002	-0.210	0.435	-0.109	0.140	-0.006	-0.453	0.048	-0.073	0.079
EVA10340	1958	-0.009	0.078	-0.004	-0.079	0.317	0.128	0.195	0.140	-0.161	0.081	-0.063	0.043
EVA10240	1958	-0.014	0.074	-0.016	-0.089	0.307	0.092	0.168	0.094	-0.182	0.069	-0.075	0.046
EVB10040	1958	-0.018	0.060	-0.017	-0.190	0.390	-0.099	0.120	-0.033	-0.405	0.036	-0.087	0.077
EVB10270	1958	-0.019	0.067	-0.033	-0.119	0.306	0.012	0.129	0.012	-0.244	0.043	-0.092	0.060
EVQAD412	1958	-0.040	0.060	-0.010	-0.040	0.300	0.200	0.150	0.190	-0.100	0.140	-0.080	-0.030
EVQAD413	1958	-0.040	0.060	-0.120	-0.080	0.140	-0.040	0.010	-0.180	-0.140	-0.030	-0.160	0.070
EVQAD512	1958	0.050	0.120	0.070	-0.060	0.380	0.260	0.390	0.340	-0.100	0.090	0.020	0.100
EV 513	1958	-0.010	0.060	0.020	-0.230	0.480	-0.120	0.160	0.020	-0.500	0.060	-0.060	0.080
EVA10200	1959	0.046	-0.102	0.190	0.086	0.040	0.160	0.037	0.339	0.270	0.058	0.009	-0.115

EVB10170	1959	0.043	-0.142	0.218	0.059	-0.024	0.132	-0.028	0.342	0.211	0.038	0.022	-0.233
EVB10070	1959	0.040	-0.144	0.209	0.047	-0.016	0.155	-0.044	0.346	0.203	0.056	0.007	-0.240
EVF10005	1959	0.046	-0.129	0.228	0.037	-0.031	0.201	-0.035	0.361	0.213	0.077	0.009	-0.246
EVA10340	1959	0.048	-0.128	0.241	0.106	-0.002	0.092	0.035	0.327	0.258	-0.019	0.070	-0.170
EVA10240	1959	0.044	-0.135	0.228	0.099	0.004	0.092	0.019	0.326	0.246	-0.012	0.057	-0.177
EVB10040	1959	0.042	-0.139	0.216	0.043	-0.021	0.172	-0.041	0.351	0.207	0.064	0.007	-0.242
EVB10270	1959	0.040	-0.145	0.213	0.078	-0.001	0.104	-0.014	0.330	0.222	0.012	0.033	-0.205
EVQAD412	1959	0.030	-0.130	0.210	0.150	0.120	0.080	0.070	0.300	0.300	-0.070	0.080	-0.060
EVQAD413	1959	0.020	-0.190	0.150	0.080	0.030	0.010	-0.070	0.300	0.170	-0.010	0.000	-0.220
EVQAD512	1959	0.090	-0.090	0.340	0.100	-0.160	0.100	0.090	0.360	0.280	-0.010	0.130	-0.240
EV 513	1959	0.050	-0.120	0.240	0.030	-0.040	0.230	-0.030	0.370	0.220	0.090	0.010	-0.250
EVA10200	1960	-0.024	0.001	0.173	0.249	0.182	0.222	0.316	0.242	0.052	0.121	0.021	-0.101
EVB10170	1960	-0.036	-0.042	0.188	0.334	0.270	0.144	0.410	0.216	-0.082	0.050	-0.009	-0.260
EVB10070	1960	-0.040	-0.050	0.190	0.336	0.282	0.146	0.426	0.216	-0.109	0.047	-0.032	-0.250
EVF10005	1960	-0.034	-0.056	0.196	0.345	0.324	0.161	0.453	0.231	-0.128	0.049	-0.062	-0.244
EVA10340	1960	-0.036	-0.012	0.179	0.307	0.247	0.174	0.348	0.213	-0.005	0.077	0.061	-0.189
EVA10240	1960	-0.040	-0.017	0.179	0.309	0.241	0.167	0.353	0.209	-0.019	0.072	0.053	-0.194
EVB10040	1960	-0.038	-0.052	0.192	0.339	0.297	0.151	0.436	0.221	-0.116	0.047	-0.043	-0.248
EVB10270	1960	-0.042	-0.030	0.182	0.319	0.244	0.151	0.377	0.207	-0.054	0.059	0.024	-0.224

EVQAD412	1960	-0.070	0.020	0.160	0.250	0.210	0.240	0.260	0.190	0.030	0.120	0.120	0.030
EVQAD413	1960	-0.060	-0.030	0.170	0.310	0.150	0.100	0.340	0.170	-0.050	0.040	0.060	-0.270
EVQAD512	1960	0.020	-0.020	0.200	0.360	0.310	0.140	0.410	0.260	0.040	0.060	0.050	-0.390
EV 513	1960	-0.030	-0.060	0.200	0.350	0.350	0.170	0.470	0.240	-0.140	0.050	-0.080	-0.240
EVA10200	1961	0.063	-0.027	-0.005	0.283	0.160	-0.056	0.102	0.311	0.182	0.149	-0.204	-0.107
EVB10170	1961	0.012	-0.042	-0.081	0.407	0.259	-0.276	0.104	0.308	0.109	0.100	-0.219	-0.169
EVB10070	1961	0.014	-0.043	-0.094	0.422	0.272	-0.324	0.095	0.306	0.090	0.086	-0.224	-0.183
EVF10005	1961	-0.019	-0.041	-0.061	0.470	0.308	-0.401	0.141	0.333	0.084	0.113	-0.215	-0.181
EVA10340	1961	0.004	-0.047	0.010	0.368	0.214	-0.163	0.148	0.321	0.157	0.170	-0.214	-0.123
EVA10240	1961	0.017	-0.048	-0.016	0.363	0.213	-0.171	0.125	0.310	0.146	0.147	-0.219	-0.135
EVB10040	1961	0.002	-0.043	-0.082	0.439	0.285	-0.352	0.112	0.316	0.088	0.096	-0.221	-0.183
EVB10270	1961	0.028	-0.046	-0.066	0.373	0.227	-0.213	0.093	0.298	0.122	0.108	-0.224	-0.158
EVQAD412	1961	0.050	-0.070	0.090	0.300	0.140	-0.090	0.130	0.300	0.160	0.200	-0.240	-0.110
EVQAD413	1961	0.120	-0.050	-0.200	0.270	0.160	-0.080	-0.050	0.220	0.110	0.000	-0.250	-0.190
EVQAD512	1961	-0.110	-0.020	0.070	0.460	0.290	-0.180	0.290	0.400	0.220	0.260	-0.160	-0.070
EV 513	1961	-0.040	-0.040	-0.040	0.500	0.330	-0.450	0.170	0.350	0.080	0.130	-0.210	-0.180
EVA10200	1962	-0.079	0.021	0.138	0.072	0.300	0.126	0.340	0.449	0.060	-0.038	-0.035	0.053
EVB10170	1962	-0.114	0.028	0.199	0.071	0.390	0.069	0.398	0.504	0.003	-0.099	-0.122	0.039
EVB10070	1962	-0.120	0.039	0.215	0.074	0.380	0.096	0.413	0.509	0.022	-0.096	-0.136	0.030

EVF10005	1962	-0.114	0.082	0.261	0.065	0.380	0.129	0.423	0.534	0.070	-0.025	-0.145	0.018
EVA10340	1962	-0.102	0.031	0.153	0.059	0.399	0.024	0.353	0.481	-0.023	-0.057	-0.017	0.051
EVA10240	1962	-0.108	0.021	0.151	0.064	0.394	0.030	0.361	0.477	-0.027	-0.082	-0.032	0.050
EVB10040	1962	-0.118	0.054	0.232	0.071	0.380	0.108	0.417	0.518	0.039	-0.070	-0.139	0.026
EVB10270	1962	-0.116	0.012	0.163	0.072	0.388	0.047	0.381	0.483	-0.023	-0.116	-0.079	0.046
EVQAD412	1962	-0.120	0.040	0.080	0.060	0.360	0.040	0.330	0.420	-0.030	-0.040	0.150	0.040
EVQAD413	1962	-0.140	-0.100	0.070	0.100	0.380	-0.010	0.380	0.430	-0.130	-0.320	-0.110	0.070
EVQAD512	1962	-0.050	0.070	0.240	0.030	0.470	-0.030	0.330	0.560	0.000	0.060	-0.110	0.070
EV 513	1962	-0.110	0.110	0.290	0.060	0.380	0.150	0.430	0.550	0.100	0.020	-0.150	0.010
EVA10200	1963	0.033	0.124	0.141	-0.002	0.177	0.316	0.132	0.440	0.351	0.409	-0.004	-0.037
EVB10170	1963	0.023	0.131	0.161	-0.081	0.283	0.294	0.179	0.419	0.289	0.437	-0.025	-0.100
EVB10070	1963	0.017	0.127	0.168	-0.090	0.305	0.299	0.162	0.399	0.267	0.436	-0.037	-0.116
EVF10005	1963	0.019	0.123	0.224	-0.096	0.345	0.318	0.198	0.418	0.251	0.451	-0.039	-0.125
EVA10340	1963	0.036	0.140	0.181	-0.017	0.218	0.296	0.204	0.506	0.361	0.452	0.032	-0.044
EVA10240	1963	0.031	0.139	0.164	-0.025	0.222	0.292	0.182	0.482	0.349	0.446	0.022	-0.055
EVB10040	1963	0.017	0.125	0.188	-0.092	0.320	0.306	0.175	0.406	0.261	0.441	-0.037	-0.119
EVB10270	1963	0.024	0.135	0.144	-0.054	0.246	0.288	0.160	0.436	0.317	0.436	-0.005	-0.081
EVQAD412	1963	0.020	0.140	0.190	0.090	0.150	0.310	0.100	0.560	0.410	0.460	0.100	-0.010
EVQAD413	1963	0.010	0.140	-0.010	-0.070	0.180	0.240	0.050	0.340	0.320	0.390	-0.030	-0.090

EVQAD512	1963	0.080	0.150	0.260	-0.080	0.260	0.300	0.430	0.580	0.380	0.480	0.020	-0.020
EV 513	1963	0.020	0.120	0.260	-0.100	0.370	0.330	0.220	0.430	0.240	0.460	-0.040	-0.130
EVA10200	1964	0.052	-0.017	0.001	-0.077	0.163	0.416	0.434	0.144	0.044	0.283	-0.016	0.005
EVB10170	1964	0.037	-0.031	-0.008	-0.095	0.220	0.418	0.474	0.086	0.012	0.305	0.006	-0.066
EVB10070	1964	0.030	-0.034	-0.010	-0.098	0.227	0.420	0.449	0.053	0.022	0.303	0.013	-0.103
EVF10005	1964	0.018	-0.025	0.002	-0.050	0.229	0.426	0.468	0.069	0.076	0.307	0.023	-0.126
EVA10340	1964	0.041	-0.026	-0.017	-0.052	0.190	0.417	0.567	0.173	-0.008	0.292	-0.006	0.038
EVA10240	1964	0.042	-0.031	-0.021	-0.073	0.195	0.416	0.540	0.143	-0.019	0.291	-0.005	0.018
EVB10040	1964	0.026	-0.031	-0.006	-0.081	0.227	0.422	0.456	0.059	0.041	0.305	0.017	-0.111
EVB10270	1964	0.041	-0.035	-0.020	-0.103	0.209	0.416	0.491	0.095	-0.021	0.295	-0.001	-0.029
EVQAD412	1964	0.030	-0.040	-0.070	-0.040	0.160	0.420	0.600	0.140	-0.070	0.240	0.000	0.080
EVQAD413	1964	0.070	-0.060	-0.050	-0.250	0.220	0.400	0.390	0.000	-0.150	0.290	-0.020	-0.030
EVQAD512	1964	0.050	0.010	0.060	0.050	0.190	0.420	0.680	0.370	0.110	0.350	-0.020	0.110
EV 513	1964	0.010	-0.020	0.010	-0.020	0.230	0.430	0.480	0.080	0.110	0.310	0.030	-0.140
EVA10200	1965	-0.043	-0.111	0.042	0.254	-0.106	0.254	0.446	0.438	0.139	0.274	0.032	-0.018
EVB10170	1965	-0.129	-0.234	-0.015	0.329	-0.216	0.218	0.546	0.437	0.072	0.283	0.087	-0.106
EVB10070	1965	-0.146	-0.240	-0.030	0.346	-0.212	0.206	0.552	0.426	0.070	0.296	0.096	-0.135
EVF10005	1965	-0.161	-0.246	-0.036	0.373	-0.254	0.221	0.600	0.441	0.070	0.311	0.105	-0.181
EVA10340	1965	-0.063	-0.168	0.033	0.297	-0.206	0.256	0.551	0.482	0.072	0.253	0.054	-0.034

EVA10240	1965	-0.073	-0.175	0.023	0.300	-0.192	0.242	0.537	0.468	0.071	0.257	0.058	-0.040
EVB10040	1965	-0.151	-0.242	-0.032	0.356	-0.227	0.211	0.569	0.431	0.070	0.301	0.099	-0.152
EVB10270	1965	-0.102	-0.204	0.001	0.311	-0.186	0.220	0.526	0.443	0.071	0.270	0.073	-0.067
EVQAD412	1965	0.000	-0.040	0.060	0.290	-0.100	0.250	0.530	0.500	0.060	0.240	0.020	0.010
EVQAD413	1965	-0.100	-0.220	-0.010	0.260	-0.080	0.160	0.400	0.380	0.070	0.250	0.070	0.010
EVQAD512	1965	-0.070	-0.260	0.060	0.290	-0.390	0.340	0.640	0.540	0.090	0.240	0.060	-0.040
EV 513	1965	-0.170	-0.250	-0.040	0.390	-0.280	0.230	0.630	0.450	0.070	0.320	0.110	-0.210
EVA10200	1966	-0.111	-0.125	0.251	0.025	0.162	0.493	0.299	0.071	0.124	0.153	0.089	-0.136
EVB10170	1966	-0.164	-0.126	0.273	-0.210	0.312	0.544	0.369	0.013	0.063	0.120	0.107	-0.208
EVB10070	1966	-0.173	-0.114	0.280	-0.195	0.367	0.563	0.378	0.039	0.080	0.119	0.093	-0.221
EVF10005	1966	-0.177	-0.105	0.286	-0.235	0.449	0.579	0.428	0.076	0.092	0.144	0.103	-0.196
EVA10340	1966	-0.148	-0.190	0.262	-0.105	0.171	0.490	0.361	-0.035	0.023	0.142	0.171	-0.141
EVA10240	1966	-0.152	-0.180	0.264	-0.096	0.185	0.499	0.350	-0.031	0.031	0.131	0.155	-0.161
EVB10040	1966	-0.175	-0.111	0.282	-0.210	0.397	0.569	0.396	0.052	0.084	0.128	0.097	-0.212
EVB10270	1966	-0.160	-0.152	0.269	-0.131	0.239	0.522	0.344	-0.013	0.048	0.116	0.122	-0.199
EVQAD412	1966	-0.160	-0.270	0.270	0.290	0.080	0.460	0.330	-0.040	0.020	0.150	0.220	-0.100
EVQAD413	1966	-0.160	-0.140	0.260	-0.070	0.110	0.510	0.220	-0.080	0.040	0.040	0.060	-0.300
EVQAD512	1966	-0.110	-0.160	0.240	-0.560	0.180	0.470	0.450	-0.060	-0.020	0.190	0.210	-0.070
EV 513	1966	-0.180	-0.100	0.290	-0.260	0.500	0.590	0.460	0.100	0.100	0.160	0.110	-0.180

EVA10200	1967	0.095	0.053	0.218	0.007	-0.106	0.407	0.212	0.437	0.146	0.147	0.066	-0.142
EVB10170	1967	0.094	0.044	0.266	-0.027	-0.241	0.436	0.245	0.465	0.116	0.151	0.105	-0.295
EVB10070	1967	0.087	0.040	0.276	-0.024	-0.279	0.441	0.240	0.456	0.156	0.205	0.110	-0.313
EVF10005	1967	0.089	0.046	0.303	-0.009	-0.316	0.514	0.246	0.477	0.177	0.251	0.122	-0.311
EVA10340	1967	0.113	0.064	0.241	-0.004	-0.107	0.474	0.238	0.489	0.009	0.031	0.106	-0.172
EVA10240	1967	0.107	0.057	0.240	-0.009	-0.126	0.449	0.235	0.476	0.031	0.053	0.104	-0.194
EVB10040	1967	0.087	0.042	0.286	-0.019	-0.292	0.467	0.242	0.464	0.164	0.222	0.114	-0.313
EVB10270	1967	0.097	0.047	0.246	-0.022	-0.184	0.417	0.235	0.459	0.081	0.106	0.101	-0.252
EVQAD412	1967	0.110	0.070	0.210	0.050	0.020	0.490	0.180	0.460	-0.020	0.030	0.120	-0.010
EVQAD413	1967	0.080	0.020	0.190	-0.070	-0.160	0.210	0.220	0.390	0.090	0.060	0.070	-0.320
EVQAD512	1967	0.150	0.090	0.280	-0.030	-0.130	0.590	0.320	0.590	-0.090	-0.100	0.100	-0.220
EV 513	1967	0.090	0.050	0.320	0.000	-0.340	0.560	0.250	0.490	0.190	0.280	0.130	-0.310
EVA10200	1968	-0.166	0.045	-0.026	0.055	-0.028	0.086	0.236	0.389	-0.008	0.195	-0.190	0.035
EVB10170	1968	-0.270	0.028	0.049	-0.065	-0.104	0.052	0.272	0.389	-0.173	0.120	-0.246	0.001
EVB10070	1968	-0.302	0.024	0.072	-0.092	-0.073	0.062	0.266	0.373	-0.212	0.103	-0.256	-0.010
EVF10005	1968	-0.350	-0.003	0.120	-0.122	0.015	0.104	0.275	0.389	-0.242	0.113	-0.265	-0.016
EVA10340	1968	-0.216	0.016	-0.059	0.066	-0.037	0.029	0.270	0.440	-0.065	0.207	-0.207	0.037
EVA10240	1968	-0.220	0.024	-0.052	0.049	-0.058	0.022	0.265	0.422	-0.085	0.187	-0.213	0.030
EVB10040	1968	-0.319	0.014	0.089	-0.103	-0.041	0.077	0.269	0.379	-0.223	0.107	-0.259	-0.012

cyp03_pit129.EVA

EVB10270	1968	-0.239	0.035	-0.012	-0.007	-0.101	0.025	0.263	0.393	-0.133	0.143	-0.230	0.014
EVQAD412	1968	-0.220	0.000	-0.230	0.240	0.190	-0.020	0.220	0.430	-0.020	0.290	-0.170	0.060
EVQAD413	1968	-0.150	0.110	-0.080	0.000	-0.350	-0.070	0.240	0.320	-0.120	0.070	-0.230	0.010
EVQAD512	1968	-0.180	-0.010	0.080	-0.020	-0.170	0.110	0.350	0.550	0.000	0.230	-0.210	0.050
EV 513	1968	-0.380	-0.020	0.150	-0.140	0.070	0.130	0.280	0.400	-0.260	0.120	-0.270	-0.020
EVA10200	1969	0.021	-0.003	0.041	0.106	0.068	0.416	0.476	0.511	0.274	0.067	-0.071	-0.144
EVB10170	1969	0.003	-0.021	-0.003	0.089	0.104	0.447	0.548	0.518	0.258	0.006	-0.205	-0.242
EVB10070	1969	0.008	-0.032	-0.016	0.078	0.126	0.449	0.536	0.523	0.256	0.016	-0.252	-0.238
EVF10005	1969	0.064	-0.062	-0.049	0.036	0.135	0.480	0.551	0.521	0.265	0.025	-0.306	-0.208
EVA10340	1969	0.048	-0.025	0.001	0.095	0.040	0.450	0.590	0.515	0.252	-0.013	-0.039	-0.191
EVA10240	1969	0.027	-0.021	0.005	0.102	0.054	0.440	0.576	0.519	0.250	-0.009	-0.060	-0.204
EVB10040	1969	0.028	-0.043	-0.028	0.063	0.129	0.460	0.541	0.523	0.259	0.019	-0.271	-0.227
EVB10270	1969	-0.004	-0.014	0.009	0.107	0.084	0.432	0.552	0.522	0.250	0.000	-0.129	-0.232
EVQAD412	1969	0.100	-0.070	-0.020	0.100	0.020	0.420	0.590	0.550	0.220	0.000	0.130	-0.090
EVQAD413	1969	-0.170	0.060	0.090	0.210	0.100	0.350	0.490	0.530	0.230	-0.010	-0.080	-0.330
EVQAD512	1969	0.100	0.000	0.000	0.050	-0.020	0.530	0.670	0.460	0.300	-0.050	-0.090	-0.230
EV 513	1969	0.100	-0.080	-0.070	0.010	0.140	0.500	0.560	0.520	0.270	0.030	-0.340	-0.190
EVA10200	1970	0.077	-0.044	0.113	0.040	0.221	0.291	0.332	0.345	0.193	-0.057	0.043	0.040
EVB10170	1970	0.101	-0.153	0.082	0.019	0.274	0.268	0.292	0.335	0.167	-0.235	0.059	0.017

EVB10070	1970	0.106	-0.150	0.086	0.016	0.292	0.256	0.244	0.331	0.184	-0.246	0.046	-0.003
EVF10005	1970	0.115	-0.144	0.107	0.037	0.322	0.271	0.217	0.398	0.163	-0.273	0.055	-0.007
EVA10340	1970	0.072	-0.091	0.107	0.062	0.259	0.303	0.437	0.405	0.078	-0.171	0.112	0.068
EVA10240	1970	0.075	-0.098	0.099	0.049	0.260	0.289	0.409	0.375	0.102	-0.174	0.098	0.055
EVB10040	1970	0.109	-0.148	0.094	0.024	0.303	0.261	0.234	0.355	0.177	-0.256	0.049	-0.005
EVB10270	1970	0.087	-0.126	0.085	0.025	0.263	0.268	0.342	0.328	0.149	-0.198	0.071	0.030
EVQAD412	1970	0.030	0.060	0.160	0.110	0.300	0.290	0.510	0.450	0.010	-0.050	0.140	0.070
EVQAD413	1970	0.080	-0.170	0.020	-0.050	0.200	0.210	0.330	0.120	0.250	-0.160	0.020	0.010
EVQAD512	1970	0.100	-0.210	0.090	0.080	0.210	0.390	0.520	0.520	0.020	-0.280	0.160	0.140
EV 513	1970	0.120	-0.140	0.120	0.050	0.340	0.280	0.200	0.440	0.150	-0.290	0.060	-0.010
EVA10200	1971	0.101	0.000	0.229	0.214	0.110	0.489	0.020	0.199	0.260	0.171	0.004	-0.278
EVB10170	1971	0.126	-0.030	0.227	0.240	0.157	0.492	-0.022	0.145	0.226	0.081	-0.026	-0.285
EVB10070	1971	0.123	-0.043	0.216	0.233	0.163	0.480	-0.022	0.127	0.224	0.100	-0.030	-0.261
EVF10005	1971	0.139	-0.041	0.231	0.243	0.186	0.474	0.047	0.129	0.209	0.112	-0.030	-0.236
EVA10340	1971	0.130	0.010	0.283	0.278	0.149	0.526	0.044	0.187	0.209	0.093	0.026	-0.388
EVA10240	1971	0.123	0.000	0.268	0.267	0.145	0.519	0.015	0.174	0.215	0.096	0.019	-0.374
EVB10040	1971	0.129	-0.043	0.221	0.237	0.171	0.478	0.003	0.127	0.219	0.104	-0.030	-0.252
EVB10270	1971	0.117	-0.021	0.238	0.247	0.145	0.503	-0.029	0.152	0.225	0.092	-0.005	-0.330
EVQAD412	1971	0.100	0.020	0.320	0.310	0.130	0.540	0.100	0.170	0.180	0.220	0.120	-0.510

EVQAD413	1971	0.070	-0.050	0.170	0.200	0.090	0.500	-0.240	0.120	0.270	0.060	-0.030	-0.340
EVQAD512	1971	0.200	0.060	0.330	0.300	0.190	0.550	0.140	0.280	0.210	-0.060	-0.030	-0.340
EV 513	1971	0.150	-0.040	0.240	0.250	0.200	0.470	0.090	0.130	0.200	0.120	-0.030	-0.220
EVA10200	1972	-0.038	0.171	0.202	0.206	0.210	0.246	0.299	0.440	0.114	-0.140	-0.176	-0.066
EVB10170	1972	-0.156	0.211	0.207	0.225	0.274	0.158	0.268	0.446	0.057	-0.245	-0.225	-0.136
EVB10070	1972	-0.182	0.210	0.187	0.207	0.276	0.138	0.240	0.446	0.053	-0.257	-0.240	-0.147
EVF10005	1972	-0.230	0.216	0.183	0.191	0.291	0.108	0.240	0.455	0.069	-0.259	-0.228	-0.143
EVA10340	1972	-0.078	0.208	0.254	0.265	0.271	0.213	0.379	0.452	0.067	-0.228	-0.155	-0.082
EVA10240	1972	-0.082	0.206	0.241	0.258	0.268	0.207	0.355	0.449	0.059	-0.235	-0.173	-0.094
EVB10040	1972	-0.199	0.212	0.185	0.201	0.281	0.127	0.240	0.449	0.059	-0.257	-0.236	-0.145
EVB10270	1972	-0.111	0.205	0.218	0.241	0.266	0.186	0.301	0.445	0.050	-0.244	-0.210	-0.120
EVQAD412	1972	0.010	0.180	0.240	0.270	0.260	0.250	0.460	0.460	0.040	-0.260	-0.110	-0.030
EVQAD413	1972	-0.030	0.190	0.200	0.260	0.230	0.230	0.240	0.420	0.000	-0.250	-0.280	-0.160
EVQAD512	1972	-0.140	0.250	0.340	0.300	0.300	0.210	0.430	0.460	0.140	-0.160	-0.100	-0.070
EV 513	1972	-0.260	0.220	0.180	0.180	0.300	0.090	0.240	0.460	0.080	-0.260	-0.220	-0.140
EVA10200	1973	-0.062	0.045	-0.047	-0.084	0.218	0.039	0.216	0.433	-0.130	-0.054	-0.005	0.015
EVB10170	1973	-0.129	0.062	-0.081	-0.061	0.332	-0.074	0.159	0.460	-0.260	-0.248	-0.001	0.016
EVB10070	1973	-0.140	0.069	-0.081	-0.036	0.349	-0.074	0.117	0.459	-0.251	-0.235	-0.014	0.007
EVF10005	1973	-0.152	0.094	-0.038	0.041	0.380	-0.065	0.094	0.484	-0.232	-0.189	0.019	0.009

cyp03_pit129.EVA

EVA10340	1973	-0.097	0.051	-0.051	-0.090	0.275	-0.056	0.282	0.470	-0.274	-0.153	0.078	0.023
EVA10240	1973	-0.101	0.047	-0.069	-0.100	0.278	-0.060	0.258	0.460	-0.274	-0.171	0.053	0.018
EVB10040	1973	-0.144	0.078	-0.066	-0.008	0.360	-0.071	0.109	0.468	-0.244	-0.218	-0.002	0.007
EVB10270	1973	-0.114	0.048	-0.091	-0.100	0.300	-0.070	0.201	0.450	-0.271	-0.221	0.009	0.012
EVQAD412	1973	-0.070	0.030	-0.050	-0.110	0.200	-0.020	0.340	0.450	-0.270	0.090	0.130	-0.020
EVQAD413	1973	-0.100	-0.010	-0.220	-0.280	0.250	-0.100	0.190	0.380	-0.310	-0.380	-0.120	0.000
EVQAD512	1973	-0.100	0.090	0.040	-0.020	0.330	-0.070	0.360	0.540	-0.280	-0.310	0.160	0.100
EV 513	1973	-0.160	0.110	-0.010	0.090	0.400	-0.060	0.080	0.500	-0.220	-0.160	0.040	0.010
EVA10200	1974	-0.139	0.142	0.227	0.143	0.128	0.137	0.370	0.091	-0.208	0.076	-0.124	0.024
EVB10170	1974	-0.233	0.159	0.265	0.207	0.134	0.070	0.387	-0.008	-0.331	0.005	-0.119	0.061
EVB10070	1974	-0.263	0.150	0.266	0.197	0.136	0.057	0.356	-0.017	-0.343	0.000	-0.121	0.066
EVF10005	1974	-0.279	0.150	0.281	0.187	0.151	0.139	0.365	-0.019	-0.341	-0.006	-0.096	0.087
EVA10340	1974	-0.152	0.178	0.260	0.185	0.163	0.180	0.490	0.022	-0.330	0.020	-0.103	0.027
EVA10240	1974	-0.169	0.172	0.256	0.187	0.156	0.137	0.462	0.016	-0.336	0.018	-0.113	0.026
EVB10040	1974	-0.269	0.150	0.271	0.193	0.141	0.087	0.359	-0.017	-0.343	-0.002	-0.112	0.074
EVB10270	1974	-0.206	0.162	0.255	0.196	0.141	0.068	0.410	0.001	-0.340	0.012	-0.126	0.037
EVQAD412	1974	-0.130	0.170	0.230	0.090	0.220	0.240	0.520	0.040	-0.410	0.030	-0.110	-0.050
EVQAD413	1974	-0.210	0.150	0.220	0.230	0.090	-0.200	0.330	-0.010	-0.350	0.020	-0.200	0.000
EVQAD512	1974	-0.080	0.220	0.310	0.280	0.140	0.350	0.610	0.040	-0.210	0.020	-0.040	0.110

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EV   513     1974  -0.290   0.150   0.290   0.180   0.160   0.190   0.370  -0.020  -0.340  -0.010  -0.080
0.100
EVA10200     1975   0.074   0.033   0.073   0.120  -0.021   0.171   0.303   0.357   0.316   0.286  -0.003
-0.022
EVB10170     1975   0.068  -0.051   0.080   0.103   0.009   0.110   0.354   0.342   0.299   0.218  -0.001
-0.037
EVB10070     1975   0.054  -0.073   0.070   0.097   0.009   0.094   0.346   0.343   0.303   0.194  -0.023
-0.041
EVF10005     1975   0.039  -0.077   0.070   0.087   0.034   0.079   0.373   0.359   0.319   0.173  -0.021
-0.022
EVA10340     1975   0.087   0.056   0.077   0.133   0.001   0.130   0.379   0.357   0.300   0.304   0.070
-0.020
EVA10240     1975   0.084   0.037   0.073   0.131  -0.006   0.126   0.364   0.351   0.296   0.291   0.052
-0.030
EVB10040     1975   0.049  -0.075   0.070   0.093   0.018   0.089   0.356   0.349   0.309   0.187  -0.023
-0.034
EVB10270     1975   0.076  -0.014   0.072   0.119  -0.008   0.117   0.346   0.340   0.293   0.253   0.016
-0.042
EVQAD412     1975   0.060   0.170   0.010   0.180  -0.050   0.100   0.350   0.370   0.300   0.380   0.090
-0.030
EVQAD413     1975   0.100  -0.060   0.070   0.130  -0.070   0.140   0.260   0.290   0.250   0.260  -0.030
-0.100
EVQAD512     1975   0.140   0.050   0.170   0.100   0.090   0.190   0.490   0.380   0.320   0.300   0.150
0.040
EV   513     1975   0.030  -0.080   0.070   0.080   0.050   0.070   0.390   0.370   0.330   0.160  -0.020
-0.010
EVA10200     1976   0.091   0.098  -0.118   0.059  -0.031   0.132   0.197   0.429   0.044   0.011   0.042
-0.045
EVB10170     1976   0.018   0.087  -0.194   0.098  -0.040  -0.034   0.160   0.385  -0.054  -0.030   0.071
-0.132
EVB10070     1976  -0.006   0.079  -0.217   0.127  -0.040  -0.054   0.141   0.364  -0.051  -0.018   0.060
-0.147
EVF10005     1976  -0.021   0.098  -0.207   0.129  -0.040  -0.045   0.110   0.337  -0.032   0.012   0.066
-0.143
EVA10340     1976   0.119   0.137  -0.127   0.001  -0.044   0.095   0.201   0.445  -0.043  -0.060   0.106
-0.049
EVA10240     1976   0.102   0.122  -0.148   0.023  -0.043   0.070   0.198   0.438  -0.049  -0.061   0.095
-0.066
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EVB10040	1976	-0.011	0.086	-0.213	0.127	-0.040	-0.051	0.130	0.354	-0.044	-0.007	0.062	-0.145
EVB10270	1976	0.057	0.095	-0.184	0.071	-0.042	0.008	0.183	0.414	-0.057	-0.052	0.076	-0.106
EVQAD412	1976	0.220	0.180	-0.130	-0.050	-0.050	0.260	0.220	0.490	-0.020	-0.090	0.110	0.040
EVQAD413	1976	0.040	0.020	-0.250	0.120	-0.040	-0.080	0.240	0.450	-0.110	-0.110	0.040	-0.160
EVQAD512	1976	0.110	0.170	-0.010	-0.070	-0.040	0.060	0.200	0.440	-0.040	-0.030	0.160	-0.050
EV 513	1976	-0.030	0.110	-0.200	0.130	-0.040	-0.040	0.090	0.320	-0.020	0.030	0.070	-0.140
EVA10200	1977	-0.077	0.055	0.033	0.174	0.250	0.284	0.350	0.250	0.258	0.286	-0.167	0.093
EVB10170	1977	-0.109	0.061	0.009	0.293	0.338	0.232	0.360	0.167	0.188	0.273	-0.176	0.066
EVB10070	1977	-0.114	0.066	0.009	0.323	0.340	0.233	0.333	0.141	0.173	0.273	-0.174	0.053
EVF10005	1977	-0.105	0.087	0.040	0.346	0.346	0.231	0.331	0.104	0.183	0.277	-0.147	0.057
EVA10340	1977	-0.101	0.060	0.032	0.175	0.317	0.241	0.444	0.223	0.258	0.284	-0.164	0.124
EVA10240	1977	-0.106	0.055	0.020	0.193	0.318	0.241	0.424	0.217	0.241	0.281	-0.173	0.111
EVB10040	1977	-0.111	0.074	0.020	0.331	0.342	0.233	0.333	0.128	0.177	0.275	-0.164	0.055
EVB10270	1977	-0.113	0.052	0.003	0.245	0.326	0.238	0.382	0.196	0.205	0.276	-0.184	0.082
EVQAD412	1977	-0.120	0.060	0.040	0.050	0.270	0.270	0.470	0.240	0.310	0.300	-0.160	0.170
EVQAD413	1977	-0.140	0.000	-0.090	0.250	0.320	0.240	0.340	0.260	0.140	0.260	-0.260	0.040
EVQAD512	1977	-0.050	0.080	0.090	0.200	0.360	0.210	0.530	0.240	0.300	0.280	-0.120	0.150
EV 513	1977	-0.100	0.100	0.060	0.360	0.350	0.230	0.330	0.080	0.190	0.280	-0.130	0.060
EVA10200	1978	-0.137	-0.018	0.058	0.214	0.095	0.430	0.487	0.488	0.299	0.330	-0.371	-0.078

cyp03_pit129.EVA

EVB10170	1978	-0.242	-0.015	0.058	0.275	0.135	0.446	0.494	0.456	0.216	0.281	-0.414	-0.146
EVB10070	1978	-0.263	-0.004	0.059	0.276	0.137	0.453	0.481	0.447	0.207	0.264	-0.422	-0.167
EVF10005	1978	-0.273	0.011	0.084	0.297	0.139	0.463	0.456	0.431	0.197	0.255	-0.359	-0.169
EVA10340	1978	-0.168	-0.049	0.059	0.278	0.115	0.430	0.553	0.501	0.269	0.359	-0.355	-0.078
EVA10240	1978	-0.182	-0.045	0.051	0.271	0.118	0.431	0.549	0.497	0.263	0.346	-0.385	-0.094
EVB10040	1978	-0.267	0.001	0.068	0.284	0.137	0.457	0.472	0.441	0.203	0.261	-0.400	-0.167
EVB10270	1978	-0.216	-0.031	0.046	0.265	0.126	0.437	0.526	0.480	0.240	0.310	-0.426	-0.127
EVQAD412	1978	-0.110	-0.080	0.030	0.260	0.080	0.420	0.640	0.570	0.350	0.440	-0.360	-0.050
EVQAD413	1978	-0.230	-0.050	-0.020	0.210	0.130	0.420	0.560	0.500	0.240	0.290	-0.620	-0.160
EVQAD512	1978	-0.150	-0.040	0.130	0.330	0.140	0.430	0.490	0.450	0.220	0.350	-0.190	-0.020
EV 513	1978	-0.280	0.020	0.100	0.310	0.140	0.470	0.440	0.420	0.190	0.250	-0.320	-0.170
EVA10200	1979	-0.142	-0.081	0.012	0.043	-0.046	0.283	0.022	0.267	0.140	0.141	-0.007	-0.061
EVB10170	1979	-0.341	-0.140	-0.054	0.046	0.003	0.261	-0.053	0.286	0.022	0.128	-0.014	-0.099
EVB10070	1979	-0.392	-0.147	-0.061	0.045	0.025	0.239	-0.078	0.302	0.014	0.123	-0.046	-0.100
EVF10005	1979	-0.446	-0.137	-0.024	0.091	0.065	0.258	-0.042	0.350	0.005	0.146	-0.061	-0.100
EVA10340	1979	-0.166	-0.099	0.023	0.089	-0.062	0.323	0.066	0.250	0.069	0.140	0.068	-0.097
EVA10240	1979	-0.190	-0.109	0.000	0.070	-0.058	0.301	0.031	0.245	0.063	0.129	0.050	-0.098
EVB10040	1979	-0.411	-0.143	-0.048	0.062	0.040	0.246	-0.065	0.319	0.011	0.131	-0.051	-0.100
EVB10270	1979	-0.264	-0.131	-0.044	0.040	-0.034	0.265	-0.034	0.253	0.043	0.117	0.011	-0.099

cyp03_pit129.EVA

EVQAD412	1979	0.000	-0.060	0.100	0.120	-0.130	0.300	0.130	0.200	0.140	0.100	0.080	-0.100
EVQAD413	1979	-0.220	-0.180	-0.180	-0.100	-0.100	0.180	-0.190	0.150	0.040	0.050	0.000	-0.100
EVQAD512	1979	-0.200	-0.080	0.070	0.160	-0.020	0.470	0.190	0.320	0.030	0.240	0.160	-0.090
EV 513	1979	-0.480	-0.130	0.000	0.120	0.090	0.270	-0.020	0.380	0.000	0.160	-0.070	-0.100
EVA10200	1980	-0.074	0.115	0.112	0.100	0.034	0.282	0.582	0.589	0.115	0.167	0.003	0.076
EVB10170	1980	-0.077	0.160	0.067	0.111	0.062	0.300	0.654	0.597	0.111	0.152	-0.005	0.084
EVB10070	1980	-0.074	0.162	0.044	0.090	0.034	0.299	0.657	0.590	0.128	0.149	-0.013	0.090
EVF10005	1980	-0.047	0.192	0.035	0.078	0.013	0.330	0.659	0.584	0.197	0.174	-0.017	0.102
EVA10340	1980	-0.091	0.155	0.138	0.148	0.087	0.293	0.669	0.636	0.081	0.166	0.033	0.074
EVA10240	1980	-0.097	0.147	0.123	0.139	0.079	0.283	0.668	0.631	0.070	0.156	0.027	0.074
EVB10040	1980	-0.064	0.173	0.041	0.086	0.027	0.310	0.657	0.588	0.153	0.158	-0.015	0.094
EVB10270	1980	-0.096	0.143	0.089	0.121	0.067	0.279	0.661	0.614	0.071	0.143	0.010	0.076
EVQAD412	1980	-0.140	0.120	0.170	0.120	0.000	0.220	0.720	0.690	0.020	0.150	0.080	0.070
EVQAD413	1980	-0.160	0.070	0.070	0.130	0.100	0.200	0.650	0.610	-0.090	0.070	0.000	0.050
EVQAD512	1980	-0.010	0.230	0.190	0.230	0.230	0.420	0.620	0.610	0.200	0.240	0.020	0.080
EV 513	1980	-0.030	0.210	0.030	0.070	0.000	0.350	0.660	0.580	0.240	0.190	-0.020	0.110
EVA10200	1981	0.120	0.027	0.116	0.197	-0.223	0.246	0.247	0.337	0.317	-0.166	0.080	0.168
EVB10170	1981	0.099	-0.018	0.078	0.229	-0.308	0.127	0.256	0.271	0.236	-0.329	0.054	0.180
EVB10070	1981	0.094	-0.034	0.070	0.224	-0.314	0.117	0.245	0.243	0.217	-0.322	0.034	0.173

EVF10005	1981	0.085	-0.025	0.076	0.215	-0.281	0.107	0.291	0.253	0.201	-0.266	0.019
0.171												
EVA10340	1981	0.124	0.054	0.123	0.237	-0.239	0.198	0.332	0.385	0.307	-0.256	0.143
0.202												
EVA10240	1981	0.121	0.037	0.113	0.236	-0.260	0.190	0.304	0.357	0.296	-0.278	0.129
0.197												
EVB10040	1981	0.091	-0.031	0.072	0.221	-0.302	0.113	0.262	0.247	0.211	-0.302	0.029
0.173												
EVB10270	1981	0.111	0.000	0.090	0.234	-0.299	0.159	0.259	0.300	0.265	-0.321	0.090
0.187												
EVQAD412	1981	0.160	0.110	0.170	0.230	-0.170	0.320	0.370	0.460	0.380	-0.120	0.240
0.210												
EVQAD413	1981	0.120	-0.060	0.050	0.250	-0.420	0.150	0.100	0.210	0.270	-0.500	0.080
0.180												
EVQAD512	1981	0.100	0.090	0.130	0.250	-0.200	0.120	0.440	0.460	0.290	-0.280	0.120
0.220												
EV 513	1981	0.080	-0.020	0.080	0.210	-0.260	0.100	0.320	0.260	0.190	-0.230	0.010
0.170												
EVA10200	1982	-0.033	-0.018	0.158	0.057	0.071	0.068	0.311	0.341	0.368	0.032	-0.335
-0.348												
EVB10170	1982	-0.076	-0.050	0.148	0.001	-0.003	-0.050	0.368	0.371	0.343	-0.062	-0.393
-0.448												
EVB10070	1982	-0.084	-0.057	0.143	-0.020	-0.011	-0.044	0.369	0.369	0.330	-0.077	-0.408
-0.491												
EVF10005	1982	-0.069	-0.047	0.141	-0.026	0.008	-0.011	0.388	0.394	0.336	-0.073	-0.378
-0.466												
EVA10340	1982	-0.034	-0.017	0.162	0.090	0.103	-0.007	0.358	0.362	0.390	-0.004	-0.334
-0.330												
EVA10240	1982	-0.047	-0.027	0.159	0.073	0.083	-0.019	0.354	0.354	0.377	-0.018	-0.356
-0.369												
EVB10040	1982	-0.079	-0.053	0.143	-0.022	-0.004	-0.032	0.376	0.378	0.332	-0.075	-0.397
-0.482												
EVB10270	1982	-0.070	-0.045	0.153	0.032	0.031	-0.045	0.354	0.352	0.353	-0.047	-0.391
-0.435												
EVQAD412	1982	-0.010	0.000	0.170	0.170	0.280	0.080	0.320	0.290	0.410	0.030	-0.330
-0.360												
EVQAD413	1982	-0.130	-0.090	0.150	0.000	-0.070	-0.150	0.310	0.290	0.310	-0.090	-0.500
-0.570												

EVQAD512	1982	0.010	0.020	0.170	0.100	0.030	-0.030	0.420	0.480	0.440	0.040	-0.220
-0.080												
EV 513	1982	-0.060	-0.040	0.140	-0.030	0.020	0.010	0.400	0.410	0.340	-0.070	-0.360
-0.450												
EVA10200	1983	0.067	-0.032	0.121	0.186	-0.057	0.143	0.294	0.345	0.375	0.158	-0.077
-0.145												
EVB10170	1983	0.066	-0.166	0.114	0.248	-0.103	0.037	0.328	0.285	0.342	0.146	-0.131
-0.237												
EVB10070	1983	0.056	-0.196	0.117	0.246	-0.113	0.036	0.325	0.277	0.333	0.146	-0.156
-0.266												
EVF10005	1983	0.065	-0.223	0.119	0.279	-0.129	0.051	0.383	0.254	0.331	0.155	-0.165
-0.275												
EVA10340	1983	0.093	-0.039	0.105	0.264	-0.076	0.081	0.386	0.312	0.377	0.132	-0.036
-0.150												
EVA10240	1983	0.083	-0.057	0.106	0.251	-0.078	0.072	0.360	0.313	0.370	0.131	-0.054
-0.169												
EVB10040	1983	0.059	-0.206	0.117	0.258	-0.119	0.041	0.346	0.269	0.333	0.149	-0.159
-0.269												
EVB10270	1983	0.067	-0.112	0.110	0.236	-0.088	0.049	0.321	0.305	0.354	0.135	-0.099
-0.211												
EVQAD412	1983	0.080	0.110	0.100	0.240	-0.050	0.160	0.420	0.360	0.410	0.090	0.040
-0.120												
EVQAD413	1983	0.030	-0.110	0.110	0.140	-0.060	-0.010	0.140	0.350	0.340	0.120	-0.130
-0.240												
EVQAD512	1983	0.160	-0.090	0.100	0.360	-0.090	0.050	0.490	0.260	0.380	0.180	-0.010
-0.070												
EV 513	1983	0.070	-0.240	0.120	0.300	-0.140	0.060	0.420	0.240	0.330	0.160	-0.170
-0.280												
EVA10200	1984	-0.005	-0.045	-0.010	0.207	0.062	0.397	0.223	0.327	0.193	-0.424	-0.068
-0.034												
EVB10170	1984	-0.022	-0.170	-0.056	0.281	0.111	0.374	0.253	0.280	0.145	-0.660	-0.163
-0.049												
EVB10070	1984	-0.020	-0.197	-0.048	0.285	0.115	0.373	0.238	0.262	0.125	-0.707	-0.196
-0.060												
EVF10005	1984	-0.014	-0.193	0.006	0.331	0.173	0.377	0.294	0.292	0.165	-0.684	-0.205
-0.048												
EVA10340	1984	-0.027	-0.026	-0.019	0.289	0.131	0.395	0.327	0.372	0.224	-0.484	-0.011
-0.023												

cyp03_pit129.EVA

EVA10240	1984	-0.028	-0.055	-0.037	0.276	0.112	0.391	0.294	0.345	0.195	-0.531	-0.040	-0.035
EVB10040	1984	-0.018	-0.195	-0.029	0.302	0.136	0.375	0.258	0.273	0.140	-0.699	-0.199	-0.056
EVB10270	1984	-0.027	-0.123	-0.064	0.263	0.091	0.381	0.247	0.295	0.147	-0.622	-0.110	-0.051
EVQAD412	1984	-0.040	0.130	0.040	0.270	0.120	0.430	0.320	0.430	0.230	-0.410	0.140	-0.050
EVQAD413	1984	-0.040	-0.210	-0.220	0.140	-0.070	0.360	0.060	0.170	0.000	-0.780	-0.170	-0.100
EVQAD512	1984	-0.010	-0.030	0.010	0.380	0.240	0.380	0.510	0.460	0.380	-0.300	-0.010	0.070
EV 513	1984	-0.010	-0.190	0.040	0.360	0.210	0.380	0.330	0.310	0.190	-0.670	-0.210	-0.040
EVA10200	1985	0.016	-0.059	0.049	0.053	0.126	0.297	0.264	0.532	0.288	-0.113	-0.221	-0.031
EVB10170	1985	-0.030	-0.100	0.041	0.085	0.222	0.307	0.234	0.562	0.236	-0.317	-0.337	-0.067
EVB10070	1985	-0.043	-0.109	0.045	0.086	0.222	0.315	0.214	0.556	0.230	-0.345	-0.347	-0.060
EVF10005	1985	-0.047	-0.128	0.085	0.119	0.258	0.373	0.205	0.571	0.242	-0.391	-0.343	-0.048
EVA10340	1985	0.018	-0.093	0.053	0.091	0.204	0.314	0.310	0.592	0.279	-0.222	-0.245	-0.066
EVA10240	1985	0.008	-0.092	0.041	0.080	0.194	0.298	0.296	0.581	0.268	-0.230	-0.260	-0.067
EVB10040	1985	-0.045	-0.116	0.060	0.098	0.235	0.336	0.211	0.561	0.234	-0.362	-0.345	-0.056
EVB10270	1985	-0.014	-0.093	0.028	0.070	0.194	0.284	0.260	0.564	0.245	-0.267	-0.303	-0.069
EVQAD412	1985	0.050	-0.110	0.050	0.060	0.110	0.300	0.370	0.600	0.320	-0.110	-0.100	-0.040
EVQAD413	1985	-0.030	-0.050	-0.080	-0.020	0.110	0.130	0.240	0.510	0.190	-0.200	-0.360	-0.100
EVQAD512	1985	0.040	-0.080	0.120	0.180	0.350	0.410	0.330	0.640	0.300	-0.290	-0.310	-0.090
EV 513	1985	-0.050	-0.140	0.110	0.140	0.280	0.410	0.200	0.580	0.250	-0.420	-0.340	-0.040

cyp03_pit129.EVA

EVA10200	1986	0.172	0.043	0.230	-0.076	0.012	0.055	0.403	0.429	0.130	-0.025	-0.234	-0.096
EVB10170	1986	0.194	0.058	0.280	-0.115	-0.054	-0.132	0.480	0.370	-0.015	-0.138	-0.364	-0.208
EVB10070	1986	0.190	0.063	0.285	-0.098	-0.056	-0.195	0.479	0.351	-0.028	-0.156	-0.393	-0.223
EVF10005	1986	0.184	0.061	0.325	-0.056	-0.071	-0.259	0.504	0.332	0.020	-0.177	-0.391	-0.227
EVA10340	1986	0.195	0.023	0.282	-0.109	-0.014	0.025	0.486	0.446	0.122	-0.097	-0.218	-0.123
EVA10240	1986	0.195	0.030	0.271	-0.115	-0.014	0.002	0.477	0.436	0.087	-0.102	-0.247	-0.138
EVB10040	1986	0.188	0.063	0.300	-0.083	-0.061	-0.218	0.488	0.344	-0.011	-0.164	-0.393	-0.225
EVB10270	1986	0.195	0.047	0.263	-0.124	-0.029	-0.065	0.469	0.403	0.013	-0.119	-0.317	-0.177
EVQAD412	1986	0.180	-0.020	0.260	-0.050	0.090	0.090	0.460	0.530	0.290	-0.080	-0.070	-0.020
EVQAD413	1986	0.210	0.070	0.160	-0.230	-0.010	0.010	0.400	0.410	-0.180	-0.090	-0.400	-0.210
EVQAD512	1986	0.210	0.030	0.360	-0.140	-0.120	0.100	0.560	0.420	0.140	-0.080	-0.210	-0.150
EV 513	1986	0.180	0.060	0.350	-0.030	-0.080	-0.300	0.520	0.320	0.050	-0.190	-0.390	-0.230
EVA10200	1987	0.030	-0.120	0.244	0.312	0.034	0.120	0.231	0.442	0.181	0.112	-0.357	-0.220
EVB10170	1987	0.027	-0.283	0.362	0.393	0.066	0.045	0.228	0.434	0.133	0.065	-0.538	-0.352
EVB10070	1987	0.026	-0.316	0.389	0.390	0.074	0.038	0.213	0.417	0.127	0.053	-0.591	-0.377
EVF10005	1987	0.047	-0.337	0.408	0.402	0.065	0.008	0.229	0.413	0.129	0.076	-0.572	-0.367
EVA10340	1987	0.038	-0.134	0.237	0.402	0.015	0.029	0.289	0.482	0.138	0.115	-0.305	-0.240
EVA10240	1987	0.030	-0.158	0.256	0.395	0.027	0.037	0.271	0.471	0.134	0.097	-0.359	-0.266
EVB10040	1987	0.034	-0.324	0.396	0.394	0.071	0.027	0.219	0.415	0.127	0.061	-0.584	-0.373

EVB10270	1987	0.020	-0.225	0.312	0.388	0.052	0.049	0.237	0.447	0.130	0.068	-0.475	-0.322
EVQAD412	1987	0.030	0.030	0.090	0.380	-0.040	-0.010	0.310	0.490	0.110	0.120	-0.120	-0.150
EVQAD413	1987	-0.040	-0.250	0.330	0.350	0.100	0.130	0.160	0.430	0.120	-0.020	-0.650	-0.410
EVQAD512	1987	0.090	-0.170	0.280	0.460	0.010	0.030	0.370	0.540	0.190	0.210	-0.200	-0.190
EV 513	1987	0.060	-0.350	0.420	0.410	0.060	-0.010	0.240	0.410	0.130	0.090	-0.560	-0.360
EVA10200	1988	0.147	0.035	0.044	0.191	0.328	0.446	0.157	0.233	0.305	-0.009	-0.335	-0.085
EVB10170	1988	0.197	0.029	0.031	0.247	0.424	0.445	0.240	0.203	0.312	-0.075	-0.353	-0.172
EVB10070	1988	0.199	0.020	0.027	0.249	0.433	0.446	0.252	0.166	0.323	-0.087	-0.352	-0.190
EVF10005	1988	0.218	0.020	0.029	0.268	0.449	0.455	0.306	0.193	0.339	-0.083	-0.277	-0.190
EVA10340	1988	0.181	0.047	0.028	0.243	0.407	0.457	0.191	0.305	0.274	-0.055	-0.314	-0.094
EVA10240	1988	0.177	0.041	0.025	0.238	0.407	0.453	0.184	0.269	0.278	-0.064	-0.342	-0.111
EVB10040	1988	0.206	0.020	0.027	0.256	0.439	0.449	0.271	0.176	0.329	-0.085	-0.325	-0.190
EVB10270	1988	0.181	0.032	0.026	0.236	0.413	0.447	0.195	0.211	0.293	-0.076	-0.376	-0.148
EVQAD412	1988	0.130	0.030	-0.010	0.220	0.400	0.480	0.070	0.270	0.230	-0.090	-0.330	-0.030
EVQAD413	1988	0.140	0.020	0.020	0.190	0.380	0.420	0.080	0.080	0.270	-0.100	-0.590	-0.190
EVQAD512	1988	0.250	0.100	0.080	0.290	0.410	0.450	0.350	0.540	0.300	0.030	-0.150	-0.070
EV 513	1988	0.230	0.020	0.030	0.280	0.460	0.460	0.340	0.210	0.350	-0.080	-0.230	-0.190
EVA10200	1989	-0.064	-0.007	-0.002	0.230	-0.092	0.053	0.048	0.274	0.284	0.217	0.139	0.109
EVB10170	1989	-0.137	-0.096	-0.119	0.303	-0.087	-0.250	0.057	0.233	0.274	0.175	0.167	0.087

EVB10070	1989	-0.163	-0.110	-0.153	0.309	-0.064	-0.325	0.042	0.216	0.273	0.167	0.154	0.070
EVF10005	1989	-0.186	-0.104	-0.163	0.346	-0.031	-0.371	0.084	0.249	0.283	0.169	0.145	0.058
EVA10340	1989	-0.076	-0.002	0.010	0.305	-0.135	0.052	0.094	0.313	0.267	0.212	0.213	0.136
EVA10240	1989	-0.086	-0.020	-0.015	0.295	-0.131	0.001	0.070	0.286	0.264	0.204	0.205	0.127
EVB10040	1989	-0.171	-0.108	-0.157	0.322	-0.052	-0.342	0.057	0.228	0.277	0.167	0.151	0.066
EVB10270	1989	-0.113	-0.065	-0.076	0.287	-0.113	-0.135	0.042	0.240	0.264	0.185	0.184	0.105
EVQAD412	1989	-0.060	0.120	0.110	0.290	-0.150	0.340	0.030	0.340	0.230	0.240	0.250	0.160
EVQAD413	1989	-0.090	-0.130	-0.120	0.190	-0.170	-0.180	-0.090	0.110	0.240	0.160	0.180	0.110
EVQAD512	1989	-0.030	-0.030	0.050	0.370	-0.150	0.040	0.290	0.430	0.320	0.230	0.220	0.160
EV 513	1989	-0.200	-0.100	-0.170	0.370	-0.010	-0.400	0.110	0.270	0.290	0.170	0.140	0.050
EVA10200	1990	-0.218	0.016	-0.122	0.090	-0.104	0.334	0.170	0.371	0.109	-0.042	-0.175	-0.100
EVB10170	1990	-0.383	-0.015	-0.146	0.156	-0.137	0.326	0.187	0.355	0.059	-0.146	-0.206	-0.123
EVB10070	1990	-0.393	-0.018	-0.129	0.159	-0.144	0.323	0.173	0.337	0.056	-0.165	-0.227	-0.121
EVF10005	1990	-0.409	0.018	-0.068	0.196	-0.123	0.346	0.183	0.321	0.065	-0.125	-0.229	-0.084
EVA10340	1990	-0.311	0.041	-0.167	0.140	-0.097	0.346	0.210	0.383	0.051	-0.049	-0.154	-0.109
EVA10240	1990	-0.318	0.023	-0.176	0.131	-0.111	0.335	0.198	0.377	0.048	-0.080	-0.168	-0.121
EVB10040	1990	-0.399	-0.005	-0.107	0.172	-0.137	0.331	0.177	0.331	0.059	-0.150	-0.227	-0.108
EVB10270	1990	-0.347	-0.010	-0.177	0.130	-0.135	0.320	0.183	0.365	0.049	-0.135	-0.194	-0.136
EVQAD412	1990	-0.180	0.100	-0.190	0.070	-0.080	0.340	0.160	0.360	0.000	0.000	-0.160	-0.120

EVQAD413	1990	-0.340	-0.130	-0.320	0.040	-0.210	0.250	0.140	0.390	0.030	-0.290	-0.220	-0.240
EVQAD512	1990	-0.410	0.080	-0.100	0.260	-0.040	0.410	0.330	0.440	0.120	0.070	-0.070	-0.030
EV 513	1990	-0.420	0.040	-0.030	0.220	-0.110	0.360	0.190	0.310	0.070	-0.100	-0.230	-0.060
EVA10200	1991	0.002	-0.017	0.162	-0.276	-0.009	0.294	0.264	0.228	0.193	-0.010	-0.083	0.009
EVB10170	1991	-0.067	-0.042	0.159	-0.465	0.001	0.174	0.278	0.129	0.114	-0.070	-0.122	-0.189
EVB10070	1991	-0.077	-0.053	0.146	-0.540	-0.033	0.154	0.250	0.100	0.099	-0.059	-0.147	-0.219
EVF10005	1991	-0.061	-0.051	0.155	-0.552	-0.043	0.133	0.262	0.100	0.118	0.020	-0.124	-0.256
EVA10340	1991	0.009	-0.014	0.200	-0.215	0.058	0.271	0.359	0.238	0.186	-0.032	-0.007	-0.015
EVA10240	1991	-0.009	-0.023	0.187	-0.270	0.040	0.259	0.334	0.214	0.165	-0.057	-0.038	-0.034
EVB10040	1991	-0.071	-0.053	0.149	-0.544	-0.037	0.147	0.254	0.100	0.106	-0.031	-0.139	-0.232
EVB10270	1991	-0.048	-0.038	0.165	-0.391	0.011	0.217	0.290	0.160	0.127	-0.089	-0.098	-0.108
EVQAD412	1991	0.100	-0.020	0.200	-0.090	-0.010	0.400	0.350	0.310	0.230	0.010	0.070	0.260
EVQAD413	1991	-0.130	-0.060	0.120	-0.500	0.000	0.220	0.210	0.100	0.040	-0.310	-0.220	-0.100
EVQAD512	1991	0.010	0.040	0.270	-0.030	0.230	0.210	0.510	0.300	0.250	0.050	0.080	-0.190
EV 513	1991	-0.050	-0.050	0.160	-0.560	-0.050	0.120	0.270	0.100	0.130	0.070	-0.110	-0.280
EVA10200	1992	0.048	0.020	0.124	0.114	0.069	0.043	0.098	0.375	0.026	0.182	-0.178	-0.072
EVB10170	1992	-0.075	-0.011	0.107	0.154	0.051	-0.050	0.242	0.346	-0.061	0.048	-0.207	-0.130
EVB10070	1992	-0.099	-0.017	0.093	0.152	0.037	-0.064	0.267	0.337	-0.079	0.018	-0.227	-0.147
EVF10005	1992	-0.124	-0.013	0.116	0.188	0.033	-0.031	0.367	0.333	-0.018	-0.012	-0.211	-0.143

cyp03_pit129.EVA

EVA10340	1992	0.045	0.021	0.170	0.176	0.106	0.015	0.146	0.378	0.031	0.173	-0.139	-0.072
EVA10240	1992	0.030	0.013	0.149	0.161	0.095	-0.009	0.136	0.372	-0.006	0.155	-0.160	-0.087
EVB10040	1992	-0.108	-0.015	0.101	0.165	0.035	-0.052	0.303	0.335	-0.057	0.007	-0.221	-0.145
EVB10270	1992	-0.022	-0.003	0.114	0.144	0.069	-0.047	0.160	0.357	-0.063	0.101	-0.198	-0.116
EVQAD412	1992	0.210	0.050	0.190	0.160	0.150	0.030	-0.060	0.400	0.050	0.310	-0.130	-0.050
EVQAD413	1992	-0.020	-0.030	0.020	0.040	0.050	-0.170	-0.050	0.350	-0.270	0.110	-0.280	-0.160
EVQAD512	1992	-0.040	0.030	0.260	0.270	0.120	0.130	0.410	0.390	0.210	0.130	-0.030	-0.010
EV 513	1992	-0.140	-0.010	0.130	0.210	0.030	-0.010	0.430	0.330	0.020	-0.030	-0.200	-0.140
EVA10200	1993	0.003	0.036	0.042	0.037	0.046	0.163	0.594	0.387	0.253	-0.157	-0.054	0.059
EVB10170	1993	-0.046	-0.035	-0.009	0.031	0.062	-0.082	0.646	0.360	0.225	-0.265	-0.074	0.027
EVB10070	1993	-0.064	-0.041	-0.024	0.029	0.039	-0.157	0.629	0.312	0.213	-0.269	-0.103	0.015
EVF10005	1993	-0.043	-0.004	0.003	0.066	0.070	-0.257	0.654	0.342	0.236	-0.184	-0.101	0.055
EVA10340	1993	0.037	0.065	0.071	0.074	0.142	0.139	0.750	0.520	0.267	-0.176	0.020	0.114
EVA10240	1993	0.014	0.040	0.047	0.057	0.113	0.114	0.724	0.472	0.250	-0.215	-0.004	0.087
EVB10040	1993	-0.057	-0.028	-0.014	0.042	0.050	-0.193	0.638	0.323	0.221	-0.239	-0.103	0.030
EVB10270	1993	-0.031	-0.013	0.003	0.029	0.067	0.026	0.669	0.387	0.224	-0.274	-0.051	0.038
EVQAD412	1993	0.090	0.210	0.120	0.110	0.140	0.320	0.850	0.550	0.250	-0.120	0.050	0.190
EVQAD413	1993	-0.130	-0.160	-0.110	-0.090	-0.060	0.160	0.550	0.220	0.140	-0.540	-0.110	-0.110
EVQAD512	1993	0.110	0.050	0.150	0.130	0.300	0.100	0.790	0.750	0.380	-0.030	0.120	0.180

EV 513	1993	-0.030	0.020	0.020	0.090	0.090	-0.320	0.670	0.360	0.250	-0.130	-0.100	0.080
EVA10200	1994	-0.051	-0.029	0.150	0.110	0.016	0.318	0.123	0.325	0.376	-0.172	0.003	-0.104
EVB10170	1994	-0.122	-0.127	0.097	0.168	-0.090	0.251	0.119	0.249	0.378	-0.453	0.006	-0.239
EVB10070	1994	-0.147	-0.153	0.093	0.160	-0.112	0.230	0.099	0.218	0.373	-0.483	0.011	-0.267
EVF10005	1994	-0.131	-0.169	0.116	0.160	-0.142	0.242	0.136	0.188	0.377	-0.506	0.078	-0.269
EVA10340	1994	-0.019	-0.026	0.171	0.152	0.018	0.347	0.192	0.335	0.383	-0.279	0.077	-0.108
EVA10240	1994	-0.046	-0.043	0.154	0.150	0.006	0.323	0.163	0.322	0.379	-0.303	0.051	-0.133
EVB10040	1994	-0.141	-0.159	0.101	0.160	-0.123	0.234	0.112	0.207	0.375	-0.491	0.035	-0.267
EVB10270	1994	-0.100	-0.088	0.116	0.155	-0.039	0.274	0.119	0.284	0.375	-0.380	0.006	-0.195
EVQAD412	1994	0.040	0.070	0.280	0.060	0.170	0.420	0.180	0.380	0.360	-0.030	0.180	0.030
EVQAD413	1994	-0.200	-0.100	0.020	0.160	-0.020	0.190	-0.020	0.310	0.360	-0.410	-0.200	-0.260
EVQAD512	1994	0.070	-0.030	0.150	0.260	-0.070	0.400	0.360	0.370	0.430	-0.400	0.110	-0.110
EV 513	1994	-0.120	-0.180	0.130	0.160	-0.160	0.250	0.160	0.170	0.380	-0.520	0.120	-0.270
EVA10200	1995	0.150	0.055	0.130	-0.034	0.033	0.294	0.278	0.425	0.102	0.281	0.099	-0.051
EVB10170	1995	0.209	0.086	0.068	-0.103	0.033	0.283	0.289	0.397	0.062	0.261	0.141	-0.135
EVB10070	1995	0.216	0.096	0.057	-0.127	0.048	0.289	0.273	0.390	0.056	0.243	0.129	-0.175
EVF10005	1995	0.243	0.117	0.059	-0.111	0.104	0.326	0.277	0.396	0.077	0.259	0.148	-0.215
EVA10340	1995	0.183	0.054	0.140	0.009	0.057	0.289	0.337	0.444	0.063	0.333	0.191	-0.040
EVA10240	1995	0.180	0.055	0.126	-0.019	0.043	0.279	0.324	0.434	0.054	0.312	0.175	-0.056

EVB10040	1995	0.226	0.104	0.057	-0.121	0.068	0.302	0.275	0.392	0.064	0.249	0.136	-0.190
EVB10270	1995	0.187	0.066	0.092	-0.076	0.023	0.269	0.299	0.410	0.047	0.273	0.146	-0.096
EVQAD412	1995	0.130	0.010	0.230	0.090	0.130	0.290	0.340	0.500	0.000	0.360	0.210	-0.020
EVQAD413	1995	0.130	0.030	0.050	-0.180	-0.130	0.170	0.260	0.370	-0.010	0.190	0.070	-0.050
EVQAD512	1995	0.250	0.090	0.120	0.080	0.050	0.340	0.410	0.440	0.180	0.420	0.260	0.030
EV 513	1995	0.260	0.130	0.060	-0.100	0.140	0.350	0.280	0.400	0.090	0.270	0.160	-0.240
EVA10200	1996	0.052	0.219	0.124	0.132	0.132	0.096	-0.031	0.064	0.001	0.098	-0.105	-0.007
EVB10170	1996	0.050	0.205	0.134	0.138	0.220	0.011	0.016	-0.035	-0.147	0.023	-0.165	-0.024
EVB10070	1996	0.040	0.190	0.123	0.130	0.231	-0.015	0.001	-0.041	-0.196	0.013	-0.179	-0.024
EVF10005	1996	0.040	0.202	0.146	0.142	0.304	0.031	0.062	-0.022	-0.217	0.036	-0.204	-0.015
EVA10340	1996	0.067	0.296	0.167	0.182	0.222	0.122	0.025	0.002	-0.017	0.089	-0.115	-0.022
EVA10240	1996	0.060	0.275	0.151	0.169	0.203	0.084	-0.002	-0.010	-0.046	0.070	-0.118	-0.025
EVB10040	1996	0.040	0.194	0.131	0.134	0.257	0.002	0.023	-0.034	-0.204	0.021	-0.188	-0.021
EVB10270	1996	0.051	0.230	0.129	0.146	0.188	0.020	-0.022	-0.032	-0.108	0.034	-0.137	-0.028
EVQAD412	1996	0.040	0.390	0.140	0.210	0.190	0.150	-0.130	0.030	0.000	0.140	-0.050	-0.030
EVQAD413	1996	0.040	0.150	0.050	0.090	0.000	-0.160	-0.190	-0.100	-0.130	-0.060	-0.100	-0.050
EVQAD512	1996	0.130	0.310	0.280	0.220	0.350	0.300	0.330	0.040	0.130	0.140	-0.160	0.000
EV 513	1996	0.040	0.210	0.160	0.150	0.350	0.060	0.100	-0.010	-0.230	0.050	-0.220	-0.010
EVA10200	1997	0.012	-0.110	0.120	-0.120	0.085	0.156	0.334	0.207	0.333	-0.089	-0.117	-0.112

EVB10170	1997	-0.054	-0.203	0.083	-0.263	0.161	0.077	0.344	0.140	0.277	-0.217	-0.143	-0.203
EVB10070	1997	-0.067	-0.210	0.062	-0.310	0.159	0.069	0.320	0.126	0.266	-0.247	-0.161	-0.217
EVF10005	1997	-0.069	-0.204	0.092	-0.298	0.190	0.094	0.332	0.135	0.293	-0.237	-0.142	-0.201
EVA10340	1997	0.009	-0.144	0.182	-0.057	0.152	0.130	0.433	0.191	0.360	-0.115	-0.068	-0.119
EVA10240	1997	-0.002	-0.156	0.153	-0.104	0.142	0.113	0.409	0.177	0.338	-0.143	-0.090	-0.140
EVB10040	1997	-0.067	-0.208	0.073	-0.306	0.170	0.078	0.324	0.129	0.276	-0.243	-0.154	-0.211
EVB10270	1997	-0.032	-0.184	0.099	-0.206	0.138	0.083	0.363	0.150	0.293	-0.195	-0.130	-0.183
EVQAD412	1997	0.080	-0.060	0.240	0.100	0.070	0.170	0.470	0.210	0.440	-0.080	-0.030	-0.040
EVQAD413	1997	-0.060	-0.230	-0.030	-0.350	0.060	-0.010	0.280	0.100	0.180	-0.280	-0.220	-0.270
EVQAD512	1997	0.000	-0.170	0.280	0.040	0.290	0.180	0.530	0.250	0.400	0.000	0.010	-0.090
EV 513	1997	-0.070	-0.200	0.110	-0.290	0.210	0.110	0.340	0.140	0.310	-0.230	-0.130	-0.190
EVA10200	1998	-0.119	-0.101	0.198	0.222	0.178	0.467	0.471	0.321	-0.072	-0.058	-0.056	0.008
EVB10170	1998	-0.187	-0.160	0.198	0.282	0.230	0.479	0.529	0.261	-0.281	-0.212	-0.161	-0.053
EVB10070	1998	-0.179	-0.178	0.188	0.276	0.222	0.476	0.515	0.242	-0.324	-0.200	-0.169	-0.073
EVF10005	1998	-0.118	-0.148	0.146	0.285	0.270	0.503	0.561	0.284	-0.309	-0.188	-0.194	-0.096
EVA10340	1998	-0.137	-0.079	0.185	0.289	0.292	0.514	0.619	0.379	-0.097	-0.181	-0.079	0.003
EVA10240	1998	-0.158	-0.105	0.195	0.283	0.266	0.500	0.588	0.344	-0.140	-0.183	-0.083	-0.004
EVB10040	1998	-0.157	-0.167	0.173	0.279	0.239	0.486	0.532	0.257	-0.319	-0.196	-0.178	-0.081
EVB10270	1998	-0.191	-0.150	0.208	0.277	0.227	0.478	0.536	0.280	-0.232	-0.197	-0.115	-0.027

EVQAD412	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100
0.040												
EVQAD413	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090
0.000												
EVQAD512	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240
0.010												
EV 513	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210
-0.110												

cyp03_pit129.FLO

cyp03_pit129.FLO

IN 513	1948	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1948	39837	54683	47268	18644	80804	2587	1317	387	556	538	1879	2191
INB10000	1948	85421	140304	163444	51133	152410	18308	3893	387	556	981	3951	6612
INC10000	1948	29882	63557	70415	21164	55875	5249	1664	114	3	10	1918	3235
IND10000	1948	28684	61008	67592	20315	53634	5039	1597	109	3	9	1841	3105
INE10000	1948	51160	108813	120555	36234	95661	8987	2848	195	6	17	3284	5538
INF10000	1948	245818	461732	523372	160270	448842	48059	12411	1026	834	1487	13517	22719
INQAD412	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1948	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1949	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1949	53230	29211	29964	22062	12371	4506	2639	873	2377	104149	7855	15562
INB10000	1949	53230	79641	71509	48647	32490	9267	9567	2955	6378	147337	47440	30625
INC10000	1949	15790	29611	30349	31147	26382	3474	11109	6217	4319	33309	31430	13587
IND10000	1949	15156	28423	29132	29898	25324	3335	10664	5967	4146	31973	30169	13042
INE10000	1949	27033	50696	51959	53326	45168	5948	19020	10643	7394	57027	53810	23262
INF10000	1949	141843	236198	227144	196580	153638	27600	58619	29262	26715	350976	195930	99641
INQAD412	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1949	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1950	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1950	84084	136888	36163	11532	110724	12673	5932	3612	58208	3290	2395	2978
INB10000	1950	187555	272450	76563	30284	251282	35799	9234	8581	155414	14209	8728	9703
INC10000	1950	86809	92543	27263	17358	91101	20008	5707	6373	31989	6056	5245	5624
IND10000	1950	83328	88832	26169	16662	87448	19205	5478	6118	30707	5813	5034	5398
INE10000	1950	148621	158440	46675	29718	155970	34255	9771	10911	54768	10368	8979	9628
INF10000	1950	624630	772963	222247	114240	735927	132996	36492	38196	357618	45235	33893	36850
INQAD412	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1950	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1951	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1951	16542	57208	12996	8613	8590	5420	5144	199	1147	899	2076	3077
INB10000	1951	33346	116218	58828	40721	35763	14242	7049	199	5204	2240	6586	10674
INC10000	1951	13869	39454	28760	19086	22833	4502	964	127	4610	544	2517	7191
IND10000	1951	13313	37872	27607	18320	21918	4322	925	122	4425	522	2417	6903

cyp03_pit129.FLO

INE10000	1951	23744	67547	49240	32676	39092	7708	1650	218	7893	931	4310	12311
INF10000	1951	104787	329631	202057	136571	144259	39062	14268	803	26149	5485	19808	44561
INQAD412	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1951	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1952	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1952	15269	6229	20312	106196	33309	8586	1038	149	0	61	3848	21941
INB10000	1952	24386	25447	48508	181164	39031	45318	1423	149	0	61	5193	44782
INC10000	1952	10868	15772	22429	47240	23845	16873	459	171	0	0	516	8299
IND10000	1952	10432	15140	21530	45346	22889	16196	441	164	0	0	495	7966
INE10000	1952	18607	27003	38400	80878	40824	28887	786	292	0	0	883	14208
INF10000	1952	79538	100745	161461	456724	153136	134496	3941	904	0	90	9734	99366
INQAD412	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1952	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1953	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1953	12501	16796	13933	19484	92921	939	6803	1210	4340	824	2510	16909
INB10000	1953	36309	37043	50537	37893	259460	3792	14916	3402	7144	824	6125	29045
INC10000	1953	18011	20055	41452	19220	128023	4029	6754	3811	2405	56	2787	15206
IND10000	1953	17288	19251	39790	18449	122890	3868	6483	3658	2308	54	2676	14596
INE10000	1953	30835	34336	70969	32906	219183	6898	11563	6524	4117	96	4772	26033
INF10000	1953	125749	135023	240643	132932	895876	21736	49076	20287	20180	1440	20208	103789
INQAD412	1953	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1953	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1953	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1954	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1954	34592	10249	4346	3930	34988	7503	82	0	0	1301	1479	4320
INB10000	1954	53201	29468	14046	15677	51873	31348	82	0	0	2369	8121	11423
INC10000	1954	22861	18526	9864	11676	27447	11592	149	0	0	14	3651	4731
IND10000	1954	21945	17783	9468	11207	26346	11127	143	0	0	13	3505	4542
INE10000	1954	39140	31718	16887	19989	46990	19847	255	0	0	24	6251	8100
INF10000	1954	170121	117712	60245	69911	186524	92718	717	1	0	3555	26614	35817
INQAD412	1954	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1954	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1954	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1955	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1955	3909	8712	20726	21377	1715	738	57	1593	807	4091	340	1348
INB10000	1955	14380	38210	57838	73577	8259	2614	2164	3703	807	5612	1073	4024
INC10000	1955	8560	24144	48860	42703	9072	2784	1730	5415	2925	1872	554	2559
IND10000	1955	8217	23176	46901	40991	8709	2672	1661	5198	2808	1797	532	2457
INE10000	1955	14656	41336	83651	73111	15533	4766	2962	9271	5008	3205	949	4381
INF10000	1955	55519	153120	281092	279677	48531	15010	10124	27155	12907	15786	3804	16191
INQAD412	1955	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1955	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1955	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1956	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1956	1353	27842	3063	1589	8554	56	0	0	0	0	134	383
INB10000	1956	5974	48491	16298	8375	25107	56	0	0	0	0	362	383
INC10000	1956	4229	25959	10025	5086	21658	323	17	0	0	0	1	19
IND10000	1956	4059	24918	9623	4882	20789	310	17	0	0	0	1	18
INE10000	1956	7240	44444	17163	8707	37079	552	30	0	0	0	1	33
INF10000	1956	25757	175573	64217	32737	123813	1374	69	0	0	0	537	643
INQAD412	1956	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1956	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1956	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1957	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1957	731	3601	20126	94381	52405	43544	966	440	4657	13734	83633	14848
INB10000	1957	1582	12913	25857	187015	152038	134887	11906	1116	6133	42022	221153	60538
INC10000	1957	299	5516	12695	109178	102831	81815	4875	761	740	22053	94139	32666
IND10000	1957	287	5295	12186	104800	98708	78535	4680	730	711	21168	90364	31356
INE10000	1957	512	9443	21735	186918	176053	140073	8346	1302	1267	37755	161171	55926
INF10000	1957	3533	41158	89027	713419	636350	526857	37106	4694	12021	150374	703602	220223
INQAD412	1957	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1957	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1957	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1958	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1958	45440	5670	31795	152128	85637	24521	15670	3599	7617	2544	21997	9779
INB10000	1958	115786	37473	71708	374361	271125	63415	58314	16163	19375	14349	21997	23062
INC10000	1958	58853	26980	28613	71506	151261	17282	20653	2353	6261	7198	4780	8772
IND10000	1958	56493	25898	27466	68638	145196	16589	19825	2259	6010	6909	4588	8421

cyp03_pit129.FLO

INE10000	1958	100760	46191	48988	122422	258968	29587	35359	4028	10719	12323	8184	15019
INF10000	1958	406688	163390	220487	839203	1006168	162859	168828	33292	53686	50017	51627	69190
INQAD412	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1958	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1959	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1959	3592	22580	30981	30696	8110	3717	5523	1692	1389	1301	2868	35067
INB10000	1959	16004	70047	83001	112234	45291	27214	14969	8320	3473	4950	6289	55152
INC10000	1959	8250	28915	33924	58852	39468	24297	6599	3481	979	2168	2996	21731
IND10000	1959	7919	27755	32564	56492	37885	23322	6334	3342	940	2081	2876	20859
INE10000	1959	14124	49503	58080	100758	67571	41597	11298	5960	1676	3711	5129	37204
INF10000	1959	56674	219242	258433	401439	224948	137495	48534	26229	9050	15991	21286	168474
INQAD412	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1959	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1960	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1960	64111	25252	25532	4205	3388	8325	12483	504	5546	5487	5374	70491
INB10000	1960	155989	56577	91723	18213	17439	10582	31757	753	8254	16378	17132	210302
INC10000	1960	61651	30869	52451	10422	7095	4185	2060	187	967	4143	8345	121797
IND10000	1960	59179	29631	50348	10004	6810	4017	1977	180	928	3977	8010	116913
INE10000	1960	105550	52850	89800	17843	12147	7164	3527	321	1655	7093	14287	208524
INF10000	1960	477262	207177	345514	68636	54167	32386	55145	1863	16062	40778	58721	798350
INQAD412	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1960	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1961	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1961	34285	30639	35695	14373	3950	19421	7537	1591	1699	1114	12849	34310
INB10000	1961	84572	91522	116979	61979	19411	44289	34486	2032	3308	4762	19562	107170
INC10000	1961	52864	47946	57301	52215	7961	11581	23998	1878	3648	4119	11233	55312
IND10000	1961	50744	46023	55003	50121	7642	11116	23035	1803	3502	3953	10783	53094
INE10000	1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232	94697
INF10000	1961	336605	327172	402232	300644	60550	111783	147035	10521	19496	23527	73876	379781
INQAD412	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1961	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1962	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1962	33638	25699	28421	22735	12989	4879	2624	292	2931	2007	7460	7101
INB10000	1962	90002	81056	108133	53472	42717	13680	9641	1255	10739	13073	19445	28643
INC10000	1962	41302	39541	53153	26365	27183	4664	2296	384	1527	3264	4084	7723
IND10000	1962	39645	37955	51022	25307	26093	4477	2204	368	1465	3133	3920	7413
INE10000	1962	70711	67696	91002	45138	46538	7985	3931	657	2614	5587	6992	13222
INF10000	1962	298318	278055	372559	184553	171946	38882	23433	3390	21972	32375	45070	73227
INQAD412	1962	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1962	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1962	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1963	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1963	9929	5878	14341	10426	18910	1444	0	0	0	309	0	826
INB10000	1963	23294	13788	33643	24460	44363	3388	0	0	0	726	0	1939
INC10000	1963	8998	6716	12016	11131	35052	1207	337	35	1	0	117	1148
IND10000	1963	7675	5268	12014	14911	23019	1142	106	6	0	0	179	1461
INE10000	1963	15406	11498	20573	19057	60012	2067	577	60	2	0	200	2104
INF10000	1963	70437	47259	97806	80700	205895	9837	1351	139	5	1072	467	7667
INQAD412	1963	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1963	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1963	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1964	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1964	1600	3295	11447	12118	6728	1654	0	2395	2582	1058	1164	2941
INB10000	1964	3753	7729	26854	28429	15783	3881	0	5619	6057	2482	2731	6900
INC10000	1964	1447	3074	8763	6476	5769	401	9	483	834	1022	764	5969
IND10000	1964	1553	3192	7645	6994	2944	317	0	567	855	298	189	1013
INE10000	1964	2477	5262	15003	11088	9878	687	15	827	1428	1750	1308	10219
INF10000	1964	11338	23723	74751	67919	46414	7338	35	10233	12285	7759	7093	34093
INQAD412	1964	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1964	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1964	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1965	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1965	8028	46220	19775	7158	24331	11578	384	415	449	0	154	0
INB10000	1965	18833	108430	46393	16791	57079	27161	900	974	1054	0	361	0
INC10000	1965	12049	32040	23480	14544	22544	21179	1464	9	120	31	38	605
IND10000	1965	5034	25764	15645	7651	23660	12824	528	0	184	0	43	547

cyp03_pit129.FLO

INE10000	1965	20628	54855	40199	24900	38596	36260	2507	16	206	113	66	1083
INF10000	1965	76065	288441	162545	83045	174576	124930	7193	1476	2039	212	686	2492
INQAD412	1965	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1965	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1965	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1966	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1966	1756	6176	4745	138284	103327	4307	125	201	2160	1934	3102	5161
INB10000	1966	4119	14490	11131	324412	242403	10104	293	471	5066	4538	7277	12107
INC10000	1966	1680	4897	3591	159318	113530	2358	257	411	1177	661	1248	2683
IND10000	1966	1664	3313	2482	178898	84637	1087	73	82	525	535	1514	2567
INE10000	1966	2876	8384	6149	272761	194370	4036	440	704	2015	1131	2136	4594
INF10000	1966	12811	41010	30821	1117124	812643	24362	1462	2342	12195	9347	15743	28624
INQAD412	1966	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1966	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1966	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1967	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1967	7672	4362	7059	24275	31206	22852	1364	534	786	122	3355	16435
INB10000	1967	17998	10232	16561	56949	73209	53611	3200	1254	1843	286	7871	38556
INC10000	1967	4850	3918	3993	9023	19814	40356	1750	50	113	27	487	4387
IND10000	1967	4031	3111	3613	11929	17600	40450	604	0	126	0	716	7445
INE10000	1967	8303	6708	6837	15447	33923	69092	2996	85	194	46	782	7829
INF10000	1967	46001	30802	40450	120232	187465	240793	11734	2051	3175	530	13498	74976
INQAD412	1967	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1967	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1967	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1968	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1968	35450	19593	45168	22304	64758	24297	3798	1549	13329	2035	12282	34404
INB10000	1968	72222	38392	92482	54215	152730	54038	22002	4153	19517	7811	19101	76214
INC10000	1968	25170	15828	29421	31752	95207	11218	7478	1402	4239	2646	7058	27399
IND10000	1968	28805	14096	33568	28802	112683	10239	9070	1230	3752	1998	6340	26910
INE10000	1968	43141	27098	50370	54361	163001	19205	12802	2401	7258	4530	12083	46908
INF10000	1968	207527	120085	254399	207224	606840	124725	62438	11750	45799	22131	56473	222276
INQAD412	1968	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1968	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1968	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1969	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1969	9862	71203	68764	34682	64871	2377	608	359	356	395	2048	4942
INB10000	1969	26700	141236	157880	114767	114352	11219	608	683	3271	751	12770	28641
INC10000	1969	15590	46757	66884	75155	35604	6193	177	7	2	6	8176	15521
IND10000	1969	12224	56748	75881	57363	35774	3775	197	0	0	0	5324	15430
INE10000	1969	23641	65009	145506	123210	61156	8136	425	19	32	12	8065	18077
INF10000	1969	97361	373614	546786	462407	311753	37727	1786	1046	4880	1134	42842	91910
INQAD412	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1969	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1970	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1970	8790	17815	55225	41060	6893	3566	673	597	262	1566	1983	1733
INB10000	1970	38886	43529	126894	93678	32796	14829	3576	916	678	1809	8287	9724
INC10000	1970	36824	24865	53935	28189	22029	14220	2233	467	254	898	4520	4697
IND10000	1970	28773	20003	54323	35341	15269	2731	253	0	274	1453	3388	2517
INE10000	1970	46144	30013	78080	37641	43263	5122	3482	336	312	1540	6689	5843
INF10000	1970	179943	145320	382337	235549	144848	50460	13721	2539	1838	6271	28792	29924
INQAD412	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1970	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1971	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1971	2661	7903	6276	1956	1490	294	5324	2912	224	582	4790	47949
INB10000	1971	14069	19441	17139	9723	3632	401	6208	13993	224	2355	5612	71949
INC10000	1971	6085	9057	12879	6476	6450	385	134	4687	436	368	1867	16580
IND10000	1971	2586	5109	6226	3161	1631	54	721	2611	0	225	2571	20267
INE10000	1971	6234	9192	12339	6995	3765	254	767	3209	444	273	2617	20411
INF10000	1971	38969	55657	62549	34250	20448	1537	10498	32324	1630	4425	14908	160873
INQAD412	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1971	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1972	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1972	35778	9851	7109	2513	1692	5897	11293	398	0	2635	12900	22253
INB10000	1972	79469	29439	24340	12145	4433	9308	11293	398	8259	2635	30463	51060
INC10000	1972	32462	16336	10713	7863	6312	695	489	99	506	2189	18942	31893
IND10000	1972	44226	13021	8530	3954	2374	3379	353	0	497	2201	12034	23601

cyp03_pit129.FLO

INE10000	1972	55802	24585	16776	6895	5856	3775	1956	0	520	4521	25702	51367
INF10000	1972	247696	103902	76537	39728	24516	20347	20287	734	13712	13799	110912	198353
INQAD412	1972	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1972	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1972	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1973	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1973	29332	25393	75060	85083	20070	29548	1491	912	3616	17587	64229	43676
INB10000	1973	54925	63968	190340	267839	38236	71666	1491	2412	12342	37605	129727	110506
INC10000	1973	28122	33041	82869	119369	24972	37704	5036	995	9883	25530	43304	72548
IND10000	1973	25124	30975	83482	157256	17182	51858	2498	854	21007	24938	53961	60365
INE10000	1973	38724	58359	114968	244572	53542	95187	6158	1789	33801	53003	70831	135374
INF10000	1973	179822	229436	573228	932962	172407	302074	18732	7672	82735	171501	360115	470229
INQAD412	1973	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1973	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1973	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1974	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1974	50748	16594	6657	71771	9611	34032	870	4421	66183	14013	92424	53192
INB10000	1974	111481	54480	35324	149529	26629	95157	5822	8941	115941	37321	210102	121841
INC10000	1974	49316	33311	21527	62076	16191	78580	1995	1745	34600	15539	79975	50468
IND10000	1974	34550	23741	23682	34158	12847	53806	1111	1161	36449	15068	89661	53394
INE10000	1974	93858	59562	46131	45999	32803	122049	3007	1523	52711	21457	111560	93367
INF10000	1974	376053	217600	152074	380408	111674	436793	15985	18029	300146	109745	593105	392329
INQAD412	1974	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1974	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1974	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1975	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1975	30772	75906	65654	32988	72893	15264	3062	2192	324	619	909	1616
INB10000	1975	74874	206821	147102	79718	168997	44896	9862	5783	324	619	3345	8887
INC10000	1975	33952	89507	57694	26734	73979	23384	6101	1880	728	469	2985	5572
IND10000	1975	37060	73243	46454	36184	52283	21553	5777	1277	504	293	2587	4406
INE10000	1975	59428	132265	70814	55253	106273	34994	10508	2644	912	337	3124	5582
INF10000	1975	248464	632912	406998	238792	515741	152507	39091	15221	2901	2105	13961	29594
INQAD412	1975	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1975	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1975	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1976	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1976	1693	6125	31916	16780	37982	2776	11755	876	528	0	0	3155
INB10000	1976	27181	23721	80819	32874	59042	10218	18765	876	1075	0	0	21205
INC10000	1976	19986	17857	52884	14349	16822	8321	8519	350	1127	1057	2174	16467
IND10000	1976	9280	8290	32233	10547	19425	3527	24944	477	1526	1341	1429	12639
INE10000	1976	21887	19884	55590	20294	26800	9474	37504	2258	2332	2426	3574	25176
INF10000	1976	101972	90764	279532	99703	151606	41367	95673	5146	6695	5143	8488	92809
INQAD412	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1976	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1977	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1977	2891	37018	52131	51556	3156	1143	0	887	0	0	2902	2729
INB10000	1977	15058	92488	104229	113228	19453	6092	0	2879	5182	0	14597	14967
INC10000	1977	15073	48068	49445	62201	8172	3950	238	405	323	66	5940	17501
IND10000	1977	10943	53343	60751	57196	5803	2459	245	5377	5044	963	5174	8589
INE10000	1977	26347	95422	90727	101597	21623	4388	389	7447	6567	1010	6161	12636
INF10000	1977	83401	348474	360911	409089	72725	21309	925	15846	17827	1589	39427	66606
INQAD412	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1977	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1978	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1978	9239	8957	23608	1819	9836	0	0	0	0	0	2969	2050
INB10000	1978	27973	30163	63702	15145	33285	2855	0	0	0	0	3796	7748
INC10000	1978	23372	25607	36204	13555	27025	3713	55	3	2	0	1200	8371
IND10000	1978	15498	16792	33055	7493	12719	1653	93	6	0	0	1956	2806
INE10000	1978	21187	29617	46329	19655	18866	2470	93	19	0	0	1955	4653
INF10000	1978	107109	126093	215948	71406	116920	13347	219	34	3	0	10264	30674
INQAD412	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1978	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1979	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1979	43190	24586	56791	40201	32919	18649	5112	14783	50198	1002	6613	16339
INB10000	1979	81889	47193	133465	145963	91577	25220	18756	46957	78909	6477	22804	51682
INC10000	1979	48112	27427	62739	78532	42553	30433	7507	38296	9022	4428	17077	27851
IND10000	1979	31842	17663	53037	78651	64462	14203	14963	23991	30546	4365	14441	30013

cyp03_pit129.FLO

INE10000	1979	68957	52198	87681	168728	122150	36226	17277	35301	55955	15810	25167	43596
INF10000	1979	293805	187274	419217	580681	378453	135681	64296	178024	212478	39450	96057	181826
INQAD412	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1979	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1980	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1980	53071	29725	17586	45364	39960	3877	0	0	2649	1518	1786	5547
INB10000	1980	126757	77108	59289	108543	75932	17295	0	0	3311	5563	6823	10895
INC10000	1980	55729	42670	30979	48528	35624	8831	692	29	28	916	4269	6494
IND10000	1980	43734	41024	26885	41703	36805	4408	243	0	0	708	1374	2148
INE10000	1980	98383	88464	41292	74496	72221	9671	772	0	0	685	2406	3809
INF10000	1980	414764	307515	194277	341961	271388	52863	2162	43	4931	10579	19933	31304
INQAD412	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1980	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1981	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1981	2689	7604	9699	1530	48644	92577	8942	0	0	26846	9591	1677
INB10000	1981	8939	15943	25752	11344	100836	144608	8942	0	0	37274	16622	7752
INC10000	1981	6541	8667	13465	7289	45600	45539	3305	267	324	10430	8629	7489
IND10000	1981	2317	3696	7684	3697	38040	38572	4016	300	40	4272	5387	5102
INE10000	1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7594	10941
INF10000	1981	28913	45241	74018	39160	282497	364854	27127	1510	1639	76747	48503	38663
INQAD412	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1981	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1982	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1982	7152	13787	14215	17450	49290	28343	4103	0	0	0	8920	102460
INB10000	1982	18892	30960	30526	33162	81879	35067	4659	0	0	0	15955	164549
INC10000	1982	10787	23282	15937	15645	20075	17458	5408	1617	4	0	2430	61906
IND10000	1982	6995	12869	12884	8877	11579	2221	1367	0	0	34	2161	32555
INE10000	1982	10636	24253	21939	14184	21720	5489	3275	313	0	29	2156	57993
INF10000	1982	59532	115915	101010	93020	182631	85672	19702	2851	5	43	30334	420051
INQAD412	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1982	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1983	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1983	7064	30373	49796	12528	7755	4048	0	0	0	573	0	2457
INB10000	1983	26776	89984	93444	35613	31814	10536	6516	0	0	573	0	5349
INC10000	1983	25337	55472	34266	19830	22571	6757	8766	962	0	0	806	10916
IND10000	1983	13857	48749	47837	16999	17207	3710	2039	400	0	0	581	4534
INE10000	1983	29468	79834	75246	32176	25616	11473	4658	431	0	0	583	22561
INF10000	1983	120472	332692	299709	129389	118139	42481	29446	2057	0	847	2051	57336
INQAD412	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1983	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1984	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1984	3287	10858	12612	4737	0	0	0	0	0	35115	15074	28047
INB10000	1984	12186	31370	39305	18416	0	0	0	0	0	42445	28974	49544
INC10000	1984	9421	21788	31020	17651	3112	270	57	94	0	11474	19204	27152
IND10000	1984	4219	13284	19818	10133	1348	180	0	0	0	632	3515	7321
INE10000	1984	8510	33051	37829	21116	4444	1260	250	0	0	6385	10791	18082
INF10000	1984	44474	127307	159712	84443	11157	2259	453	139	0	89051	87081	139961
INQAD412	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1984	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1985	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1985	8613	60107	32881	27370	46746	6476	0	0	0	5558	8448	52840
INB10000	1985	22945	98798	76257	75521	94076	13122	4052	0	0	9893	21956	92542
INC10000	1985	19961	27238	36499	30315	36279	6501	1574	238	0	1046	9702	46966
IND10000	1985	8501	21354	32035	26580	39114	3671	358	0	0	728	9331	39581
INE10000	1985	19212	24535	54980	44182	55250	12252	904	70	0	1673	18435	75263
INF10000	1985	91731	222351	247699	221535	274086	47069	9643	454	0	18625	73972	317156
INQAD412	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1985	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1986	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1986	4625	63607	5058	26658	20923	37037	0	0	414	473	2742	11230
INB10000	1986	16430	98505	6300	40940	48501	50634	0	0	414	473	10545	47419
INC10000	1986	8905	31640	9794	19353	25309	32120	14580	223	430	1804	14799	55621
IND10000	1986	6480	36293	6131	10883	14253	10286	316	0	0	240	3798	22875

cyp03_pit129.FLO

INE10000	1986	13707	57923	12288	24999	24789	28333	2962	3	436	1431	7689	49399
INF10000	1986	57654	277723	41913	125952	145604	164045	25905	333	1890	5476	48780	225110
INQAD412	1986	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1986	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1986	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1987	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1987	11488	35327	123391	4755	0	5018	1314	0	0	0	13493	135750
INB10000	1987	34144	66351	232533	18107	5257	13853	5973	0	0	0	44833	300753
INC10000	1987	29369	38444	65287	10853	4179	4646	2950	238	192	610	26021	132637
IND10000	1987	15153	29692	90735	5059	4282	12599	3407	0	0	310	14745	120709
INE10000	1987	29610	50950	131392	18451	6456	18177	5071	43	0	321	15037	174351
INF10000	1987	137517	229991	633826	70014	23467	54160	20664	415	283	1375	126837	897464
INQAD412	1987	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1987	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1987	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1988	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1988	40466	35480	33607	16300	934	0	0	0	0	37	38739	16240
INB10000	1988	67973	80168	73280	45724	5215	489	746	0	0	3621	38739	46012
INC10000	1988	47277	36247	41830	26642	3324	466	1157	94	0	397	8773	30557
IND10000	1988	33952	34156	43518	19391	1809	430	1015	0	0	0	2913	6295
INE10000	1988	84765	54719	69041	36635	3895	434	1283	0	0	406	6637	10486
INF10000	1988	295366	252717	271938	160964	18362	2051	4705	139	0	6533	79962	128556
INQAD412	1988	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1988	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1988	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1989	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1989	19807	68523	50439	23561	92550	31861	2908	0	0	0	0	689
INB10000	1989	39666	122602	137096	66777	195291	58001	10254	0	0	0	0	1616
INC10000	1989	28656	45684	74638	50854	71542	35279	19627	4792	944	430	1607	3813
IND10000	1989	16591	40480	31901	31506	88387	12112	5583	526	0	0	97	102
INE10000	1989	27768	76079	129853	85067	148213	43689	22416	4776	1053	1039	3025	3667
INF10000	1989	141899	360858	504428	299328	612908	202265	77228	14129	2949	2169	6840	13432
INQAD412	1989	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1989	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1989	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1990	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1990	22820	25971	109708	57230	52990	13392	0	3174	3779	1446	29055	32067
INB10000	1990	53536	60927	257372	134260	124313	31417	0	7445	8865	3393	68163	75229
INC10000	1990	30645	35540	98738	61045	34243	13666	884	1279	1296	5455	23255	32288
IND10000	1990	36797	32309	82854	77498	50708	21903	847	334	2294	4169	34402	39666
INE10000	1990	56095	68600	84906	106808	65003	41936	2753	2017	4217	7055	48479	65890
INF10000	1990	207147	243758	651258	446137	330134	128503	5372	15862	21232	23484	206588	256073
INQAD412	1990	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1990	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1990	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1991	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1991	72764	46565	25841	38421	68597	25991	3177	0	1346	6656	25795	51231
INB10000	1991	170703	109239	60622	90135	160928	60975	7453	0	3158	15615	60515	120188
INC10000	1991	92714	52766	38488	62785	118917	25628	2857	3059	10274	2012	38194	61849
IND10000	1991	78313	47431	28963	49010	67836	18616	1657	661	883	971	12686	46350
INE10000	1991	163660	68336	78526	127224	146576	44928	8264	4882	3530	1311	21789	86523
INF10000	1991	630674	340150	262318	413693	629705	194234	27429	11726	25049	27966	177941	396587
INQAD412	1991	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1991	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1991	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1992	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1992	26432	40166	64358	6937	12747	38511	37693	15331	6776	0	17262	68144
INB10000	1992	62008	94228	150982	16275	29903	90345	88427	35966	15897	0	40497	159863
INC10000	1992	30938	70852	64891	16247	15610	19523	35419	9354	9993	3108	24093	69499
IND10000	1992	24744	40623	57305	10893	7366	20303	26129	4103	5382	2334	24192	69739
INE10000	1992	63027	102423	128086	24818	13262	20303	42286	4530	6255	3410	33261	116701
INF10000	1992	230328	395028	507931	84675	86793	192225	245330	73613	47469	9625	144498	511037
INQAD412	1992	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1992	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1992	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1993	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1993	65685	30669	51779	26262	14410	13668	155	1181	744	37157	8727	15998
INB10000	1993	154096	71949	121472	61610	33805	32064	364	2772	1744	87169	20472	37531
INC10000	1993	66252	27187	52978	26068	13172	17228	2599	1710	473	18918	14840	17438
IND10000	1993	73643	33922	46469	20207	18405	23421	2677	3064	67	25275	9390	10654

cyp03_pit129.FLO

INE10000	1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	21639	15661
INF10000	1993	483274	233388	399517	196845	111821	176598	19599	11926	3509	193964	84101	104301
INQAD412	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1993	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1994	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1994	14521	37547	41106	11205	20128	5360	28275	0	0	19406	65106	76704
INB10000	1994	34066	88084	96434	26288	47219	12573	66332	0	0	45526	152736	179946
INC10000	1994	17832	38992	46845	16024	25159	29823	23390	1794	514	25408	44849	70600
IND10000	1994	10971	36397	35467	8674	17011	0	20721	0	0	13125	40261	72924
INE10000	1994	15823	47449	92236	31296	41942	9828	30129	2012	653	40037	52302	110523
INF10000	1994	100005	257725	347790	108697	168819	77121	176987	5622	1723	163872	369013	533198
INQAD412	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1994	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1995	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1995	72221	8138	24730	49422	46270	5872	2882	71	316	0	0	1399
INB10000	1995	169429	19093	58015	115942	108548	13774	6762	166	740	0	0	3282
INC10000	1995	86675	35166	33980	46460	52865	7381	3830	243	523	329	966	4044
IND10000	1995	54302	20107	16345	51746	39960	8070	3279	655	498	857	596	786
INE10000	1995	110561	57811	46682	84669	61351	12427	4813	608	665	825	1636	4209
INF10000	1995	541463	165495	204787	364854	328958	49592	22748	1501	2848	1704	3843	17034
INQAD412	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1995	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1996	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1996	4795	2678	3259	6685	2478	4493	1137	8848	6956	12454	28555	26864
INB10000	1996	11249	6283	7646	15683	5812	10540	2667	20757	16318	29216	66990	63022
INC10000	1996	6472	4000	6638	10147	4472	7786	1542	5188	11529	21123	24489	40490
IND10000	1996	2428	2416	3330	4140	3759	4164	410	1721	2643	3442	8501	21277
INE10000	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139
INF10000	1996	33922	21287	27852	49708	22230	41186	8462	46250	71112	106468	163947	232805
INQAD412	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1996	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1997	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1997	19718	84766	59257	73556	14927	25331	9426	3203	0	1699	4996	20292
INB10000	1997	46259	198858	139016	172560	35018	59425	22113	7515	0	3986	11721	47604
INC10000	1997	34726	74263	69844	67281	53779	34287	7765	1238	96	1734	7715	21475
IND10000	1997	20358	83597	60259	62467	35476	15273	14738	5202	1005	4075	5063	32643
INE10000	1997	48119	138138	123156	62596	90294	31642	27906	5202	1021	4088	7181	32654
INF10000	1997	190650	607314	490294	446614	264467	185113	85331	20608	1649	14483	39307	150230
INQAD412	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1997	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1998	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1998	60894	39273	29136	10891	361	0	0	0	12114	15658	13922	38400
INB10000	1998	142855	92133	68352	25550	847	0	0	0	28419	36732	32660	90087
INC10000	1998	59944	48938	44590	16678	3608	102	0	0	12752	21081	19833	42941
IND10000	1998	78855	50112	38323	10245	2418	732	0	0	14059	18101	21884	45247
INE10000	1998	141708	78165	69530	21772	4050	906	0	50	13991	43164	39459	70919
INF10000	1998	508739	323750	269460	94510	12558	1490	0	73	81459	149115	135787	301173
INQAD412	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1998	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_wPit129

cyp03_pit129-Base

cyp03_pit129-Base

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ==============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10      104000PT129
**FY   1.0  241800    1000     100                           FYLOTP
**FY   1.0   48500    1000     100      10                      BOB
**FY     1   10000    1000     100      10      10405850307
**FY     1   10000    1000     100      10      10405850301
**FY     1   10000    1000     100      10      10405850306
**FY     1   10000    1000     100      10      10405850304
**FY     1   10000    1000     100      10      10405850303
**FY     1   10000    1000     100      10      10405850305
**FY     1   10000    1000     100      10      10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
UC         0.080   0.084   0.088   0.090   0.090   0.087
UC   REC   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
```

```
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                      7            NONE
CPPPDISC  TCUSBC                      7            NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                      7             513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                      7            NONE
CP585037  A10120                      7             513
CP585009  A10120                      7            NONE
CP585010  A10120                      7            NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                      7             513
**CP585007  A10000                      7            NONE
**CP585006  A10000                      7            NONE
CP585031  PPDISC                      7             513
CP585007  PPDISC                      7            NONE
CP585006  PPDISC                      7            NONE
CP585036  585034                      7             513
CP585034  585033                      7             513
CP585033  585032                      7             513
CP585035  585032                      7             513
CP585032  585005                      7             513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                      7            NONE
**CP585004  A10000                      7            NONE
**CP585003  A10000                      7            NONE
**CP585002  A10000                      7            NONE
**CP585001  A10000                      7            NONE
```

```
CP585005  PPDISC          7        NONE
CP585004  TCUSBC          7        NONE
CP585003  TCUSBC          7        NONE
CP585002  TCUSBC          7        NONE
CP585001  TCUSBC          7        NONE
CP585011  A10070          7        NONE
CP585012  A10010          7        NONE
CP585013  A10010          7        NONE
** add control points for A5814
CP581431  581432          7        QAD413
CP581432  A10260          7        QAD413
CP581433  A10240          7        QAD413
** add control points for A5813
CP581301  D10000          7        NONE
CP581302  D10000          7        NONE
CP581303  D10000          7        NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170          7        B10170
CP458237  B10170          7        B10170
**
CPA10370  A10340          7        QAD413
CPA10350  A10340          7        QAD413
CPA10340  A10300          7
**CPA10300  A10000          7        NONE
CPA10300  A10200          7        NONE
**
CPA10290  A10200          7        NONE
CPA10280  A10240          7        QAD413
CPA10260  A10240          7        QAD413
**CPA10240  A10000          7
CPA10240  A10200          7
CPA10200  A10000          7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000          7        513
**CPA10100  A10000          7        513
**CPA10090  A10000          7        513
CPA10120  TCUSBC          7        513
CPA10100  TCUSBC          7        513
```

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

cyp03_pit129-Base

CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

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CPF10130  F10080                  7          NONE
CPF10120  F10080                  7           513
CPF10110  F10080                  7           513
CPF10100  F10080                  7        QAD512
CPF10090  F10080                  7        QAD413
CPF10080  F10005                  7           513
CPF10030  F10020                  7        QAD412
CPF10020  F10005                  7           513
CPF10005  F10000                  7
CPF10000     OUT                  0          NONE
CP 10050   10040                  7        QAD413
CP 10040   10010                  7        QAD413
CP 10020   10010                  7        QAD413
CP 10010     OUT                  7          NONE
CPQAD412     OUT                  0
CPQAD413     OUT                  0
CPQAD512     OUT                  0
CP   513     OUT                  0
CPSABINE     OUT                  2   NONE   NONE
CPSULPHR     OUT                  2   NONE   NONE
CPA240DM     OUT                  2   NONE   NONE
CPB270DM     OUT                  2   NONE   NONE
CPB70DUM     OUT                  2   NONE   NONE
CPB20MUN     OUT                  2   NONE   NONE
CPAVNGER     OUT                  2   NONE   NONE
CPDNGRFD     OUT                  2   NONE   NONE
CPHGHSPR     OUT                  2   NONE   NONE
CPJEFFSN     OUT                  2   NONE   NONE
CPLVGSTN     OUT                  2   NONE   NONE
CPORECTY     OUT                  2   NONE   NONE
**
** ==================================================================
CPA-ZERO     OUT                  2   ZERO   ZERO      -3       0
** ==================================================================
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
```

```
                                                   cyp03_pit129-Base
WR585100     482   MONTH20181231   1    1     1.0                      104000PT129    PT129
WSPIT129    5355
WRB10040       0     IND20181231   1                                        JrFill     4590
WSLKOPNS  251000
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231   1                                   10405850001     5850
WR585002       0     IND20041231   1                                   10405850002     5850
SO                                 BACKUP
WR585003       0     IND20041231   1                                   10405850003     5850
SO                                 BACKUP
WR585004       0     IND20041231   1                                   10405850004     5850
SO                                 BACKUP
WR585005       0     IND20041231   1                                   10405850005     5850
SO                                 BACKUP
WR585006       0     IND20041231   1                                   10405850006     5850
SO                                 BACKUP
WR585007       0     IND20041231   1                                   10405850007     5850
SO                                 BACKUP
WR585008       0     IND20041231   1                                   10405850008     5850
SO                                 BACKUP
WR585009       0     IND20041231   1                                   10405850009     5850
SO                                 BACKUP
WR585010       0     IND20041231   1                                   10405850010     5850
SO                                 BACKUP
WR585011       0     IND20041231   1                                   10405850011     5850
SO                                 BACKUP
WR585012       0     IND20041231   1                                   10405850012     5850
SO                                 BACKUP
WR585013       0     IND20041231   1                                   10405850013     5850
SO                                 BACKUP
WR585037       0     IND20041231   1                                   10405850307     5850
WSR58507   525.6   0.979  0.5841
WR585031       0     IND20041231   1                                   10405850301     5850
WSR58501   271.4   0.979  0.5841
WR585036       0     IND20041231   1                                   10405850306     5850
WSR58506     327   0.979  0.5841
WR585034       0     IND20041231   1                                   10405850304     5850
```

WSR58504	509.3	0.979	0.5841					
WR585033	0		IND20041231	1			10405850303	5850
WSR58503	287.3	0.979	0.5841					
WR585035	0		IND20041231	1			10405850305	5850
WSR58505	604.8	0.4012	0.856					
WR585032	0		IND20041231	1			10405850302	5850
WSR58502	245.1	0.979	0.5841					
**								
** APPLICATION 5814								
WR581431	0		OTHER20031028	1			10405814301	
WS HR9	356	0.979	0.5841					
WR581432	0		OTHER20031028	1			10405814302	
WS HR21	263	0.979	0.5841					
WR581433	0		OTHER20031028	1			10405814303	
WS HR10	1495	0.4012	0.856					
** APPLICATION 5813								
WR581301	685		581320031001	1			10405813001	
WR581303	0		581320031001	1			10405813003	
SO					BACKUP			
WR581302	0		581320031001	1			10405813002	
SO					BACKUP			
WRD10130	0		REC19830222	1			10404334301	4334
WSWHTOAK	6.7	0.979	0.5841		0			
WRD10160	0		REC19830222	1			10404334302	4334
WSBASSLK	3.4	0.979	0.5841		0			
WRD10140	0		REC19830222	1			10404334303	4334
WSDOGWOD	6	0.979	0.5841		0			
WRD10180	0		REC19830222	1			10404334304	4334
WSLKAUTM	130	0.979	0.5841		0			
WRD10170	0		REC19830222	1			10404334305	4334
WSCATFSH	5	0.979	0.5841		0			
WRD10150	0		REC19830222	1			10404334306	4334
WSLKPINE	10.5	0.979	0.5841		0			
WRD10190	0		REC19830222	1			10404334307	4334
WSLKWALL	5	0.979	0.5841		0			
WRF10080	2343		MUN19830418	1		1	10404349001	4349
WSF10080	8.29	0.979	0.5841		0			
SO	3293.45	2343						

```
                                                          cyp03_pit129-Base
WRF10080    1281     IND19830418   1                                       1    10404349002   4349
WSF10080    8.29   0.979  0.5841        0
SO       3293.45    1281
WRB10250       0     REC19841127   1                                            10404522301
WSB10250     380   0.979  0.5841        0
WRF10180   202.5     IRR19841218   1                                       1    10404525101
WRA10370       0     REC19750106   1                                            60404558301
WSA10370     350   0.979  0.5841        0
WRA10350       0     REC19751215   1                                            60404559301
WSA10350     230   0.979  0.5841        0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500     MUN19700720   1                                            60404560301   4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                            60404560302   4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                            60404560303   4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720   1                                            60404560304   4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                            60404560305   4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                            60404561001
WRA10290    24.0     IRR19630801   1                                            60404562002
**
**
**  Lake Monticello
**
**
```

```
WRA10240   15300     IND19700406   1                                   60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                   60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1                                   60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                   60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1                                   60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                   60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1                                2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                    1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                   60404564304    4564  BOBROR
**
** ===================================================================
WRA10120    1680     MUN19550822   1                                   60404565301    4565
WSTANKSL    2700  0.4012    0.856       0
WRA10120     550     IND19550822   1                                   60404565302    4565
WSTANKSL    2700  0.4012    0.856       0
WRA10120       0     REC19550822   1                                   60404565303    4565
WSTANKSL    2700  0.4012    0.856       0
```

```
WRA10090   21.44      IRR19591231    1                                          60404566301
WSA10090    0.23   0.979  0.5841         0
WRA10100       6      IRR19561231    1                                          60404567301
WSA10100       5   0.979  0.5841         0
WRA10050     7.5      IRR19631231    1                                          60404568301
WSA10050      35   0.979  0.5841         0
WRA10070     400      MUN19380317    1                                          60404569301    4569
WSNEWCTY    1176  0.4012   0.856         0
WRA10070       0      REC19380317    1                                          60404569302    4569
WSNEWCTY    1176  0.4012   0.856         0
WRA10060     144      MUN19750120    1                                          60404570301    4570
WSOLDCTY     100   0.979  0.5841         0
WRA10060       0      REC19750120    1                                          60404570302    4570
WSOLDCTY     100   0.979  0.5841         0
WRA10040       4      IRR19631231    1                                          60404571301
WSA10040      12   0.979  0.5841         0
WRA10030     4.4      IRR19631231    1                                          60404572301
WSA10030      10   0.979  0.5841         0
WRE10020    25.3      IND19850604    1                                          10404573301
WSE10020      42   0.979  0.5841         0
WRA10010      11      IRR19551231    1                                          60404573001
WRB10320       0      IRR19511231    1                                          60404574001    4574
WSOFF320     5.0   0.979  0.5841         0
SO          5.43    1.40
WRB10320     1.4      IRR19511231    1                                          60404574301    4574
WSB10320     0.5   0.979  0.5841         0
WSOFF320     5.0   0.979  0.5841         0
OR           5.0
SO          5.43    1.40
WRB10290       0      REC19730430    1                                          60404575301
WSB10290      80   0.979  0.5841         0
**
**
**
**  Welsh Reservoir
WRB10270   11000      IND19730910    1                                          60404576301    4576
WS WELSH   23587
**
```

```
**
WRB10270       0     REC19730910   1                                                    60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                                    60404577301
WSB10230      96   0.979  0.5841         0
WRB10220       6     IRR19521231   1                                                    60404578301
WSB10220       1   0.979  0.5841         0
WRB10210      75     IRR19531231   1                                                    60404579301
WSB10210      64   0.979  0.5841         0
WRB10200       2     IRR19581231   1                                                    60404580301
WSB10200     0.5   0.979  0.5841         0
WRB10180       0     REC19690922   1                                                    60404581301
WSB10180     510   0.979  0.5841         0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                                    60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                                    60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                                    60404582004    4582 ELLISON
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                                        60404582303    4582   barnes
WSBARNES   24000  0.4012   0.856         0
WR458232       0   OTHER19720508                                                             4582BU    4582   barnes
WSBARNES   24000
```

```
SO                          458237   BACKUP
**
**
WRB10120    38.3      IRR19620731    1                                    60404583301
WSB10120    4.79   0.979  0.5841         0
WRB10110    14.2      IRR19480930    1                                    60404584301
WSB10110      60   0.979  0.5841         0
WRB10100    0.56      IRR19550331    1                                    60404585301
WSB10100      50   0.979  0.5841         0
WRB10090       1      IRR19641231    1                                    60404586301
WSB10090      12   0.979  0.5841         0
WRB10080     150      IRR19561231    1                                    60404587301
WSSIMPSN    2500  0.4012   0.856         0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668      IND19600504    1                                    60404588301    4588
WSJOHNSN   10100
**
WRB10070       0      REC19600504    1                                    60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0      REC19751208    1                                    60404589301
WSB10050     240   0.979  0.5841         0
**
**
**  Lake O'the Pines
** ==============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070      MUN19570916    1                                           1MUN    4590   FYLOTP
WSLKOPNS  251000        -1
WRB10040  151800      IND19570916    1                                           2IND    4590   FYLOTP
WSLKOPNS  251000
** ==============================================================================
**
WRF10250       8      IRR19670430    1                         1          60404591301
```

WSF10250	6	0.979	0.5841		0			
WRF10230	96.88	IRR19690930		1		1	60404592001	
WRF10240	85	IRR19620531		1		1	60404593301	
WSF10240	100	0.979	0.5841		0			
WRF10220	1080	IRR19550103		1		1	60404594002	
WRF10210	2000	MUN19630218		1		1	60404595001	
WRF10190	80.21	IRR19570319		1		1	60404596001	
WRC10040	25	IRR19760621		1			60404597301	
WSC10040	35	0.979	0.5841		0			
WRC10030	10	IND19700126		1			60404598301	
WSC10030	5	0.979	0.5841		0			
WRC10010	47	IRR19530731		1			60404599001	
WSC10010	7	0.979	0.5841		0			
SO	40.42	47						
WRF10170	62.5	IRR19660630		1		1	60404600001	
WRD10090	0	REC19461121		1			60404601301	
WSD10090	135	0.979	0.5841		0			
WRD10080	0	REC19600211		1			60404602301	
WSD10080	1414	0.4012	0.856		0			
WRD10070	0	REC19730312		1			60404603301	
WSELWOOD	116	0.979	0.5841		0			
WRD10060	7.03	IRR19670630		1			60404604301	
WSD10060	28	0.979	0.5841		0			
WRD10030	0	REC19741209		1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0	REC19741209		1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0	REC19740812		1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0	REC19740812		1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2	IRR19520630		1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15	IND19680318		1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225	IND19821206		1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122	IRR19551010		1			60404610001	

WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0		REC19470922	1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0		REC19860404	1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0		REC19860729	1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0		REC19861125	1		1	10405112301	
WSF10100	277	0.979	0.5841		0			
WRA10280	0		IND19880121	1			10405167301	
WSPONDH1	477	0.979	0.5841		0			
WRB10300	0		IRR19890112	1			10405212301	
WSB10300	0.09	0.979	0.5841		0			
WRB10260	0		IRR19890810	1			10405251301	
WSB10260	86	0.979	0.5841		0			
IFD10110	1025.6		CONST19891214	1	1	IF5272		
**								
WRD10110	6180		MUN19891214	1			10405272301	5272
WSLKGILM	12720							

```
WRD10110        0     REC19891214   1                                   10405272302    5272
WSLKGILM    12720
WRF10090        0     REC19900710   1                           1       10405302301
WSF10090       80   0.979  0.5841       0
WRA10260        0     IND19950522   1                                   10405529301
WSPONDH4    173.7   0.979  0.5841       0
WRE10080        0     REC19950801   1                                   10405537301
WSE10080      296   0.979  0.5841       0
WRE10090       34     IRR19980320   1                                   10405608301    5608
WSE10090     55.6   0.979  0.5841       0
WRE10090        0     REC19980320   1                                   10405608302    5608
WSE10090     55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005        0   OTHER99999999   1                                   60409999301    9999
WS CADDO   125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005    40000     MUN99999999   1                                   60409999302    9999
WS CADDO   165000
**
**    Storage-Area Tables
**
SVLKMONT        0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT        0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN        0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN        0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN        0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN        0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS        0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS        0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN        0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN        0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS        0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS        0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO        0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO        0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH        0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH        0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
```

```
SVLKGILM        0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM        0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129        0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129        0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI      1       1   CADDO
IS      4       0  125000  125001  865000
IP            100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129-Base_FS1200_FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ==============================================
JO
RO    -1
**
**FY      1    10000    1000     100      10      104000PT129
FY   1.0  241800    1000     100                             FYLOTP
**FY   1.0    48500    1000     100      10                       BOB
**FY      1    10000    1000     100      10      10405850307
**FY      1    10000    1000     100      10      10405850301
**FY      1    10000    1000     100      10      10405850306
**FY      1    10000    1000     100      10      10405850304
**FY      1    10000    1000     100      10      10405850303
**FY      1    10000    1000     100      10      10405850305
**FY      1    10000    1000     100      10      10405850302
**
**  Monthly Water Use Factors
**
UC  5813       60       60       60       60       76       76
UC             76       76       76       60       60       60
UC   MUN    0.077    0.070    0.075    0.076    0.084    0.091
UC          0.100    0.100    0.089    0.085    0.076    0.078
UC   IND    0.068    0.063    0.070    0.080    0.081    0.077
UC          0.109    0.109    0.104    0.084    0.072    0.076
UC   IRR    0.000    0.001    0.004    0.013    0.051    0.162
UC          0.200    0.241    0.142    0.097    0.053    0.038
UC   MIN    0.079    0.080    0.084    0.080    0.081    0.077
```

```
UC          0.080   0.084   0.088   0.090   0.090   0.087
UC    REC   0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                       7           NONE
CPPPDISC  TCUSBC                       7           NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                       7            513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                       7           NONE
CP585037  A10120                       7            513
CP585009  A10120                       7           NONE
CP585010  A10120                       7           NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                       7            513
**CP585007  A10000                       7           NONE
**CP585006  A10000                       7           NONE
CP585031  PPDISC                       7            513
CP585007  PPDISC                       7           NONE
CP585006  PPDISC                       7           NONE
CP585036  585034                       7            513
CP585034  585033                       7            513
CP585033  585032                       7            513
CP585035  585032                       7            513
CP585032  585005                       7            513
```

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                    7            NONE
**CP585004  A10000                    7            NONE
**CP585003  A10000                    7            NONE
**CP585002  A10000                    7            NONE
**CP585001  A10000                    7            NONE
CP585005  PPDISC                    7            NONE
CP585004  TCUSBC                    7            NONE
CP585003  TCUSBC                    7            NONE
CP585002  TCUSBC                    7            NONE
CP585001  TCUSBC                    7            NONE
CP585011  A10070                    7            NONE
CP585012  A10010                    7            NONE
CP585013  A10010                    7            NONE
** add control points for A5814
CP581431  581432                    7          QAD413
CP581432  A10260                    7          QAD413
CP581433  A10240                    7          QAD413
** add control points for A5813
CP581301  D10000                    7            NONE
CP581302  D10000                    7            NONE
CP581303  D10000                    7            NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                    7          B10170
CP458237  B10170                    7          B10170
**
CPA10370  A10340                    7          QAD413
CPA10350  A10340                    7          QAD413
CPA10340  A10300                    7
**CPA10300  A10000                    7            NONE
CPA10300  A10200                    7            NONE
**
CPA10290  A10200                    7            NONE
CPA10280  A10240                    7          QAD413
CPA10260  A10240                    7          QAD413
```

cyp03_pit129-Base_FS1200-FYLOTP

**CPA10240	A10000	7	
CPA10240	A10200	7	
CPA10200	A10000	7	

** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses

**CPA10120	A10000	7	513
**CPA10100	A10000	7	513
**CPA10090	A10000	7	513
CPA10120	TCUSBC	7	513
CPA10100	TCUSBC	7	513
CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513

cyp03_pit129-Base_FS1200-FYLOTP

CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

cyp03_pit129-Base_FS1200-FYLOTP

CPE10050	E10040	7		QAD412
CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE

```
CPA240DM     OUT                            2   NONE    NONE
CPB270DM     OUT                            2   NONE    NONE
CPB70DUM     OUT                            2   NONE    NONE
CPB20MUN     OUT                            2   NONE    NONE
CPAVNGER     OUT                            2   NONE    NONE
CPDNGRFD     OUT                            2   NONE    NONE
CPHGHSPR     OUT                            2   NONE    NONE
CPJEFFSN     OUT                            2   NONE    NONE
CPLVGSTN     OUT                            2   NONE    NONE
CPORECTY     OUT                            2   NONE    NONE
**
** ==================================================================
CPA-ZERO     OUT                            2   ZERO    ZERO     -3      0
** ==================================================================
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100      156  XMONTH20181231  1   1     1.0                 104000PT129   PT129
WSPIT129     5355
FS  1  1  A10000    0.0    1.0    1200        1        0   1   1       1
FS  2  1  A10000    0.0    1.0    1200        1        0   2   2       1
FS  3  1  A10000    0.0    1.0    1200        1        0   3   3       1
FS  4  1  A10000    0.0    1.0    1200        1        0   4   4       1
FS  5  1  A10000    0.0    1.0    1200        1        0   5   5       1
FS  6  1  A10000    0.0    1.0    1200        1        0   6   6       1
FS  7  1  A10000    0.0    1.0    1200        1        0   7   7       1
FS  8  1  A10000    0.0    1.0    1200        1        0   8   8       1
FS  9  1  A10000    0.0    1.0    1200        1        0   9   9       1
FS 10  1  A10000    0.0    1.0    1200        1        0  10  10       1
FS 11  1  A10000    0.0    1.0    1200        1        0  11  11       1
FS 12  1  A10000    0.0    1.0    1200        1        0  12  12       1
WRB10040        0    IND20181231   1                                   JrFill    4590
WSLKOPNS   251000
**
```

**TXU app 5850, 6/24/05, kb

WR585001	50	IND20041231	1	10405850001	5850
WR585002	0	IND20041231	1	10405850002	5850
SO			BACKUP		
WR585003	0	IND20041231	1	10405850003	5850
SO			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
SO			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
SO			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
SO			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
SO			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
SO			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
SO			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
SO			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
SO			BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
SO			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
SO			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979	0.5841		
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979	0.5841		
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979	0.5841		
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979	0.5841		
WR585033	0	IND20041231	1	10405850303	5850

```
WSR58503   287.3   0.979  0.5841
WR585035       0    IND20041231   1                             10405850305   5850
WSR58505   604.8  0.4012   0.856
WR585032       0    IND20041231   1                             10405850302   5850
WSR58502   245.1   0.979  0.5841
**
** APPLICATION 5814
WR581431       0   OTHER20031028  1                             10405814301
WS   HR9     356   0.979  0.5841
WR581432       0   OTHER20031028  1                             10405814302
WS  HR21     263   0.979  0.5841
WR581433       0   OTHER20031028  1                             10405814303
WS  HR10    1495  0.4012   0.856
** APPLICATION 5813
WR581301     685    581320031001  1                             10405813001
WR581303       0    581320031001  1                             10405813003
SO                              BACKUP
WR581302       0    581320031001  1                             10405813002
SO                              BACKUP
WRD10130       0    REC19830222   1                             10404334301   4334
WSWHTOAK     6.7   0.979  0.5841      0
WRD10160       0    REC19830222   1                             10404334302   4334
WSBASSLK     3.4   0.979  0.5841      0
WRD10140       0    REC19830222   1                             10404334303   4334
WSDOGWOD       6   0.979  0.5841      0
WRD10180       0    REC19830222   1                             10404334304   4334
WSLKAUTM     130   0.979  0.5841      0
WRD10170       0    REC19830222   1                             10404334305   4334
WSCATFSH       5   0.979  0.5841      0
WRD10150       0    REC19830222   1                             10404334306   4334
WSLKPINE    10.5   0.979  0.5841      0
WRD10190       0    REC19830222   1                             10404334307   4334
WSLKWALL       5   0.979  0.5841      0
WRF10080    2343    MUN19830418   1                       1     10404349001   4349
WSF10080    8.29   0.979  0.5841      0
```

```
SO        3293.45    2343
WRF10080     1281     IND19830418   1                            1     10404349002    4349
WSF10080     8.29   0.979  0.5841       0
SO        3293.45    1281
WRB10250        0     REC19841127   1                                  10404522301
WSB10250      380   0.979  0.5841       0
WRF10180    202.5     IRR19841218   1                            1     10404525101
WRA10370        0     REC19750106   1                                  60404558301
WSA10370      350   0.979  0.5841       0
WRA10350        0     REC19751215   1                                  60404559301
WSA10350      230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340    10500     MUN19700720   1                                  60404560301    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340     1000     MUN19660131   1                                  60404560302    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340      210     IRR19700720   1                                  60404560303    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340     3590     IND19700720   1                                  60404560304    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340        0     REC19660131   1                                  60404560305    4560 CYPRESS
WSLKCYPS    72800
**
**
WRA10300    11.61     IRR19630831   1                                  60404561001
WRA10290     24.0     IRR19630801   1                                  60404562002
**
```

```
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                                          60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                          60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1                                          60404564301    4564      BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                          60404564302    4564      BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1                                          60404564303    4564      BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                          60404564305    4564      BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1                                       2MEMBERSFRMBOB    4590      BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                           1TXU_MONTE    4590      BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                          60404564304    4564   BOBROR
**
```

```
** ==================================================================
WRA10120    1680     MUN19550822   1                              60404565301    4565
WSTANKSL    2700  0.4012    0.856      0
WRA10120     550     IND19550822   1                              60404565302    4565
WSTANKSL    2700  0.4012    0.856      0
WRA10120       0     REC19550822   1                              60404565303    4565
WSTANKSL    2700  0.4012    0.856      0
WRA10090   21.44     IRR19591231   1                              60404566301
WSA10090    0.23   0.979   0.5841      0
WRA10100       6     IRR19561231   1                              60404567301
WSA10100       5   0.979   0.5841      0
WRA10050     7.5     IRR19631231   1                              60404568301
WSA10050      35   0.979   0.5841      0
WRA10070     400     MUN19380317   1                              60404569301    4569
WSNEWCTY    1176  0.4012    0.856      0
WRA10070       0     REC19380317   1                              60404569302    4569
WSNEWCTY    1176  0.4012    0.856      0
WRA10060     144     MUN19750120   1                              60404570301    4570
WSOLDCTY     100   0.979   0.5841      0
WRA10060       0     REC19750120   1                              60404570302    4570
WSOLDCTY     100   0.979   0.5841      0
WRA10040       4     IRR19631231   1                              60404571301
WSA10040      12   0.979   0.5841      0
WRA10030     4.4     IRR19631231   1                              60404572301
WSA10030      10   0.979   0.5841      0
WRE10020    25.3     IND19850604   1                              10404573301
WSE10020      42   0.979   0.5841      0
WRA10010      11     IRR19551231   1                              60404573001
WRB10320       0     IRR19511231   1                              60404574001    4574
WSOFF320     5.0   0.979   0.5841      0
SO          5.43    1.40
WRB10320     1.4     IRR19511231   1                              60404574301    4574
WSB10320     0.5   0.979   0.5841      0
WSOFF320     5.0   0.979   0.5841      0
OR           5.0
```

```
SO            5.43    1.40
WRB10290         0     REC19730430   1                                    60404575301
WSB10290        80   0.979  0.5841        0
**
**
**
**  Welsh Reservoir
WRB10270     11000     IND19730910   1                                    60404576301    4576
WS WELSH     23587
**
**
WRB10270         0     REC19730910   1                                    60404576302    4576
WS WELSH     23587
**
**
**
WRB10230       124     IRR19500930   1                                    60404577301
WSB10230        96   0.979  0.5841        0
WRB10220         6     IRR19521231   1                                    60404578301
WSB10220         1   0.979  0.5841        0
WRB10210        75     IRR19531231   1                                    60404579301
WSB10210        64   0.979  0.5841        0
WRB10200         2     IRR19581231   1                                    60404580301
WSB10200       0.5   0.979  0.5841        0
WRB10180         0     REC19690922   1                                    60404581301
WSB10180       510   0.979  0.5841        0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170      2000     MUN19720508   1                                    60404582001    4582 ELLISON
WSELLISN     24700
**
```

```
WRB10170   21000     IND19421130   1                               60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170               19421130   1                               60404582004    4582 ELLISON
WSELLISN   24700
SO              26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                   60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                        4582BU    4582  barnes
WSBARNES   24000
SO                       458237   BACKUP
**
**
WRB10120    38.3     IRR19620731   1                               60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                               60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                               60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                               60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                               60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                               60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                               60404588302    4588
WSJOHNSN   10100
```

```
**
**
WRB10050       0     REC19751208   1                                       60404589301
WSB10050     240   0.979  0.5841        0
**
**
**  Lake O'the Pines
** ===============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                             1MUN    4590   FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                             2IND    4590   FYLOTP
WSLKOPNS  251000
** ===============================================================================
**
WRF10250       8     IRR19670430   1                             1     60404591301
WSF10250       6   0.979  0.5841        0
WRF10230   96.88     IRR19690930   1                             1     60404592001
WRF10240      85     IRR19620531   1                             1     60404593301
WSF10240     100   0.979  0.5841        0
WRF10220    1080     IRR19550103   1                             1     60404594002
WRF10210    2000     MUN19630218   1                             1     60404595001
WRF10190   80.21     IRR19570319   1                             1     60404596001
WRC10040      25     IRR19760621   1                                   60404597301
WSC10040      35   0.979  0.5841        0
WRC10030      10     IND19700126   1                                   60404598301
WSC10030       5   0.979  0.5841        0
WRC10010      47     IRR19530731   1                                   60404599001
WSC10010       7   0.979  0.5841        0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                             1     60404600001
WRD10090       0     REC19461121   1                                   60404601301
WSD10090     135   0.979  0.5841        0
WRD10080       0     REC19600211   1                                   60404602301
WSD10080    1414  0.4012   0.856        0
```

WRD10070	0		REC19730312	1			60404603301	
WSELWOOD	116	0.979	0.5841		0			
WRD10060	7.03		IRR19670630	1			60404604301	
WSD10060	28	0.979	0.5841		0			
WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			

```
WR 10050        0     REC19760524   1                                    60404619301
WS 10050      184   0.979  0.5841       0
WR 10040        0     REC19781016   1                                    60404620301
WS 10040      600  0.4012   0.856       0
WR 10020        0     REC19470922   1                                    60404621301
WS 10020      160   0.979  0.5841       0
WRD10120        0     REC19860404   1                                    10405054301
WSD10120      550   0.979  0.5841       0
WRC10050        0     REC19860729   1                                    10405080301
WSC10050      300   0.979  0.5841       0
WRF10100        0     REC19861125   1                            1       10405112301
WSF10100      277   0.979  0.5841       0
WRA10280        0     IND19880121   1                                    10405167301
WSPONDH1      477   0.979  0.5841       0
WRB10300        0     IRR19890112   1                                    10405212301
WSB10300     0.09   0.979  0.5841       0
WRB10260        0     IRR19890810   1                                    10405251301
WSB10260       86   0.979  0.5841       0
IFD10110   1025.6   CONST19891214   1   1                   IF5272
**
WRD10110     6180     MUN19891214   1                                    10405272301    5272
WSLKGILM    12720
WRD10110        0     REC19891214   1                                    10405272302    5272
WSLKGILM    12720
WRF10090        0     REC19900710   1                            1       10405302301
WSF10090       80   0.979  0.5841       0
WRA10260        0     IND19950522   1                                    10405529301
WSPONDH4    173.7   0.979  0.5841       0
WRE10080        0     REC19950801   1                                    10405537301
WSE10080      296   0.979  0.5841       0
WRE10090       34     IRR19980320   1                                    10405608301    5608
WSE10090     55.6   0.979  0.5841       0
WRE10090        0     REC19980320   1                                    10405608302    5608
WSE10090     55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
```

```
WRF10005       0   OTHER99999999   1                                 60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                 60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129       0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129       0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
```

```
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129-FYLOTP

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ===============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ===============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10     104000PT129
FY   1.0  241800    1000     100                            FYLOTP
**FY   1.0   48500    1000     100      10                       BOB
**FY     1   10000    1000     100      10     10405850307
**FY     1   10000    1000     100      10     10405850301
**FY     1   10000    1000     100      10     10405850306
**FY     1   10000    1000     100      10     10405850304
**FY     1   10000    1000     100      10     10405850303
**FY     1   10000    1000     100      10     10405850305
**FY     1   10000    1000     100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
UC         0.080   0.084   0.088   0.090   0.090   0.087
UC   REC   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
```

```
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                    7              NONE
CPPPDISC  TCUSBC                    7              NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                    7               513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                    7              NONE
CP585037  A10120                    7               513
CP585009  A10120                    7              NONE
CP585010  A10120                    7              NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                    7               513
**CP585007  A10000                    7              NONE
**CP585006  A10000                    7              NONE
CP585031  PPDISC                    7               513
CP585007  PPDISC                    7              NONE
CP585006  PPDISC                    7              NONE
CP585036  585034                    7               513
CP585034  585033                    7               513
CP585033  585032                    7               513
CP585035  585032                    7               513
CP585032  585005                    7               513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                    7              NONE
**CP585004  A10000                    7              NONE
**CP585003  A10000                    7              NONE
**CP585002  A10000                    7              NONE
**CP585001  A10000                    7              NONE
```

```
CP585005  PPDISC                          7          NONE
CP585004  TCUSBC                          7          NONE
CP585003  TCUSBC                          7          NONE
CP585002  TCUSBC                          7          NONE
CP585001  TCUSBC                          7          NONE
CP585011  A10070                          7          NONE
CP585012  A10010                          7          NONE
CP585013  A10010                          7          NONE
** add control points for A5814
CP581431  581432                          7        QAD413
CP581432  A10260                          7        QAD413
CP581433  A10240                          7        QAD413
** add control points for A5813
CP581301  D10000                          7          NONE
CP581302  D10000                          7          NONE
CP581303  D10000                          7          NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                          7        B10170
CP458237  B10170                          7        B10170
**
CPA10370  A10340                          7        QAD413
CPA10350  A10340                          7        QAD413
CPA10340  A10300                          7
**CPA10300  A10000                          7          NONE
CPA10300  A10200                          7          NONE
**
CPA10290  A10200                          7          NONE
CPA10280  A10240                          7        QAD413
CPA10260  A10240                          7        QAD413
**CPA10240  A10000                          7
CPA10240  A10200                          7
CPA10200  A10000                          7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                          7            513
**CPA10100  A10000                          7            513
**CPA10090  A10000                          7            513
CPA10120  TCUSBC                          7            513
CPA10100  TCUSBC                          7            513
```

cyp03_pit129-Base-FYLOTP

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

cyp03_pit129-Base-FYLOTP

CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

```
CPF10130  F10080                          7            NONE
CPF10120  F10080                          7             513
CPF10110  F10080                          7             513
CPF10100  F10080                          7          QAD512
CPF10090  F10080                          7          QAD413
CPF10080  F10005                          7             513
CPF10030  F10020                          7          QAD412
CPF10020  F10005                          7             513
CPF10005  F10000                          7
CPF10000     OUT                          0            NONE
CP 10050   10040                          7          QAD413
CP 10040   10010                          7          QAD413
CP 10020   10010                          7          QAD413
CP 10010     OUT                          7            NONE
CPQAD412     OUT                          0
CPQAD413     OUT                          0
CPQAD512     OUT                          0
CP   513     OUT                          0
CPSABINE     OUT                          2    NONE    NONE
CPSULPHR     OUT                          2    NONE    NONE
CPA240DM     OUT                          2    NONE    NONE
CPB270DM     OUT                          2    NONE    NONE
CPB70DUM     OUT                          2    NONE    NONE
CPB20MUN     OUT                          2    NONE    NONE
CPAVNGER     OUT                          2    NONE    NONE
CPDNGRFD     OUT                          2    NONE    NONE
CPHGHSPR     OUT                          2    NONE    NONE
CPJEFFSN     OUT                          2    NONE    NONE
CPLVGSTN     OUT                          2    NONE    NONE
CPORECTY     OUT                          2    NONE    NONE
**
** ==================================================================
CPA-ZERO     OUT                          2    ZERO    ZERO      -3       0
** ==================================================================
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
```

cyp03_pit129-Base-FYLOTP

WR585100	482	IND20181231	1	1	1.0	104000PT129	PT129
WSPIT129	5355						
WRB10040	0	IND20181231	1			JrFill	4590
WSLKOPNS	251000						
**							
**TXU app 5850, 6/24/05, kb							
WR585001	50	IND20041231	1			10405850001	5850
WR585002	0	IND20041231	1			10405850002	5850
SO			BACKUP				
WR585003	0	IND20041231	1			10405850003	5850
SO			BACKUP				
WR585004	0	IND20041231	1			10405850004	5850
SO			BACKUP				
WR585005	0	IND20041231	1			10405850005	5850
SO			BACKUP				
WR585006	0	IND20041231	1			10405850006	5850
SO			BACKUP				
WR585007	0	IND20041231	1			10405850007	5850
SO			BACKUP				
WR585008	0	IND20041231	1			10405850008	5850
SO			BACKUP				
WR585009	0	IND20041231	1			10405850009	5850
SO			BACKUP				
WR585010	0	IND20041231	1			10405850010	5850
SO			BACKUP				
WR585011	0	IND20041231	1			10405850011	5850
SO			BACKUP				
WR585012	0	IND20041231	1			10405850012	5850
SO			BACKUP				
WR585013	0	IND20041231	1			10405850013	5850
SO			BACKUP				
WR585037	0	IND20041231	1			10405850307	5850
WSR58507	525.6	0.979	0.5841				
WR585031	0	IND20041231	1			10405850301	5850
WSR58501	271.4	0.979	0.5841				
WR585036	0	IND20041231	1			10405850306	5850
WSR58506	327	0.979	0.5841				
WR585034	0	IND20041231	1			10405850304	5850

WSR58504	509.3	0.979	0.5841					
WR585033	0		IND20041231	1			10405850303	5850
WSR58503	287.3	0.979	0.5841					
WR585035	0		IND20041231	1			10405850305	5850
WSR58505	604.8	0.4012	0.856					
WR585032	0		IND20041231	1			10405850302	5850
WSR58502	245.1	0.979	0.5841					
**								
** APPLICATION 5814								
WR581431	0		OTHER20031028	1			10405814301	
WS HR9	356	0.979	0.5841					
WR581432	0		OTHER20031028	1			10405814302	
WS HR21	263	0.979	0.5841					
WR581433	0		OTHER20031028	1			10405814303	
WS HR10	1495	0.4012	0.856					
** APPLICATION 5813								
WR581301	685		581320031001	1			10405813001	
WR581303	0		581320031001	1			10405813003	
SO				BACKUP				
WR581302	0		581320031001	1			10405813002	
SO				BACKUP				
WRD10130	0		REC19830222	1			10404334301	4334
WSWHTOAK	6.7	0.979	0.5841		0			
WRD10160	0		REC19830222	1			10404334302	4334
WSBASSLK	3.4	0.979	0.5841		0			
WRD10140	0		REC19830222	1			10404334303	4334
WSDOGWOD	6	0.979	0.5841		0			
WRD10180	0		REC19830222	1			10404334304	4334
WSLKAUTM	130	0.979	0.5841		0			
WRD10170	0		REC19830222	1			10404334305	4334
WSCATFSH	5	0.979	0.5841		0			
WRD10150	0		REC19830222	1			10404334306	4334
WSLKPINE	10.5	0.979	0.5841		0			
WRD10190	0		REC19830222	1			10404334307	4334
WSLKWALL	5	0.979	0.5841		0			
WRF10080	2343		MUN19830418	1		1	10404349001	4349
WSF10080	8.29	0.979	0.5841		0			
SO	3293.45	2343						

```
WRF10080    1281     IND19830418   1                            1   10404349002   4349
WSF10080    8.29   0.979  0.5841       0
SO       3293.45    1281
WRB10250       0     REC19841127   1                                10404522301
WSB10250     380   0.979  0.5841       0
WRF10180   202.5     IRR19841218   1                            1   10404525101
WRA10370       0     REC19750106   1                                60404558301
WSA10370     350   0.979  0.5841       0
WRA10350       0     REC19751215   1                                60404559301
WSA10350     230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500     MUN19700720   1                                60404560301   4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                60404560302   4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                60404560303   4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720   1                                60404560304   4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                60404560305   4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                60404561001
WRA10290    24.0     IRR19630801   1                                60404562002
**
**
**  Lake Monticello
**
**
```

```
WRA10240   15300     IND19700406   1                              60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                              60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1                              60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                              60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1                              60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                              60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1                           2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                               1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                              60404564304    4564   BOBROR
**
** ===================================================================
WRA10120    1680     MUN19550822   1                              60404565301    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120     550     IND19550822   1                              60404565302    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120       0     REC19550822   1                              60404565303    4565
WSTANKSL    2700  0.4012   0.856       0
```

```
WRA10090   21.44      IRR19591231   1                                   60404566301
WSA10090    0.23   0.979  0.5841         0
WRA10100       6      IRR19561231   1                                   60404567301
WSA10100       5   0.979  0.5841         0
WRA10050     7.5      IRR19631231   1                                   60404568301
WSA10050      35   0.979  0.5841         0
WRA10070     400      MUN19380317   1                                   60404569301   4569
WSNEWCTY    1176  0.4012   0.856         0
WRA10070       0      REC19380317   1                                   60404569302   4569
WSNEWCTY    1176  0.4012   0.856         0
WRA10060     144      MUN19750120   1                                   60404570301   4570
WSOLDCTY     100   0.979  0.5841         0
WRA10060       0      REC19750120   1                                   60404570302   4570
WSOLDCTY     100   0.979  0.5841         0
WRA10040       4      IRR19631231   1                                   60404571301
WSA10040      12   0.979  0.5841         0
WRA10030     4.4      IRR19631231   1                                   60404572301
WSA10030      10   0.979  0.5841         0
WRE10020    25.3      IND19850604   1                                   10404573301
WSE10020      42   0.979  0.5841         0
WRA10010      11      IRR19551231   1                                   60404573001
WRB10320       0      IRR19511231   1                                   60404574001   4574
WSOFF320     5.0   0.979  0.5841         0
SO          5.43    1.40
WRB10320     1.4      IRR19511231   1                                   60404574301   4574
WSB10320     0.5   0.979  0.5841         0
WSOFF320     5.0   0.979  0.5841         0
OR           5.0
SO          5.43    1.40
WRB10290       0      REC19730430   1                                   60404575301
WSB10290      80   0.979  0.5841         0
**
**
**
**  Welsh Reservoir
WRB10270   11000      IND19730910   1                                   60404576301   4576
WS WELSH   23587
**
```

```
**
WRB10270       0     REC19730910   1                                        60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                        60404577301
WSB10230      96   0.979  0.5841        0
WRB10220       6     IRR19521231   1                                        60404578301
WSB10220       1   0.979  0.5841        0
WRB10210      75     IRR19531231   1                                        60404579301
WSB10210      64   0.979  0.5841        0
WRB10200       2     IRR19581231   1                                        60404580301
WSB10200     0.5   0.979  0.5841        0
WRB10180       0     REC19690922   1                                        60404581301
WSB10180     510   0.979  0.5841        0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                        60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                        60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                        60404582004    4582 ELLISON
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                            60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856        0
WR458232       0   OTHER19720508                                                 4582BU    4582  barnes
WSBARNES   24000
```

```
SO                       458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                                     60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                                     60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                                     60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                                     60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                                     60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                                     60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                     60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                     60404589301
WSB10050     240   0.979  0.5841       0
**
**
**  Lake O'the Pines
** ===============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                            1MUN    4590  FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                            2IND    4590  FYLOTP
WSLKOPNS  251000
** ===============================================================================
**
WRF10250       8     IRR19670430   1                            1        60404591301
```

WSF10250	6	0.979	0.5841		0			
WRF10230	96.88	IRR19690930		1		1	60404592001	
WRF10240	85	IRR19620531		1		1	60404593301	
WSF10240	100	0.979	0.5841		0			
WRF10220	1080	IRR19550103		1		1	60404594002	
WRF10210	2000	MUN19630218		1		1	60404595001	
WRF10190	80.21	IRR19570319		1		1	60404596001	
WRC10040	25	IRR19760621		1			60404597301	
WSC10040	35	0.979	0.5841		0			
WRC10030	10	IND19700126		1			60404598301	
WSC10030	5	0.979	0.5841		0			
WRC10010	47	IRR19530731		1			60404599001	
WSC10010	7	0.979	0.5841		0			
SO	40.42	47						
WRF10170	62.5	IRR19660630		1		1	60404600001	
WRD10090	0	REC19461121		1			60404601301	
WSD10090	135	0.979	0.5841		0			
WRD10080	0	REC19600211		1			60404602301	
WSD10080	1414	0.4012	0.856		0			
WRD10070	0	REC19730312		1			60404603301	
WSELWOOD	116	0.979	0.5841		0			
WRD10060	7.03	IRR19670630		1			60404604301	
WSD10060	28	0.979	0.5841		0			
WRD10030	0	REC19741209		1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0	REC19741209		1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0	REC19740812		1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0	REC19740812		1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2	IRR19520630		1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15	IND19680318		1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225	IND19821206		1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122	IRR19551010		1			60404610001	

WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0		REC19470922	1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0		REC19860404	1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0		REC19860729	1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0		REC19861125	1		1	10405112301	
WSF10100	277	0.979	0.5841		0			
WRA10280	0		IND19880121	1			10405167301	
WSPONDH1	477	0.979	0.5841		0			
WRB10300	0		IRR19890112	1			10405212301	
WSB10300	0.09	0.979	0.5841		0			
WRB10260	0		IRR19890810	1			10405251301	
WSB10260	86	0.979	0.5841		0			
IFD10110	1025.6		CONST19891214	1	1	IF5272		
**								
WRD10110	6180		MUN19891214	1			10405272301	5272
WSLKGILM	12720							

```
WRD10110       0     REC19891214   1                                      10405272302    5272
WSLKGILM   12720
WRF10090       0     REC19900710   1                            1         10405302301
WSF10090      80   0.979  0.5841       0
WRA10260       0     IND19950522   1                                      10405529301
WSPONDH4   173.7   0.979  0.5841       0
WRE10080       0     REC19950801   1                                      10405537301
WSE10080     296   0.979  0.5841       0
WRE10090      34     IRR19980320   1                                      10405608301    5608
WSE10090    55.6   0.979  0.5841       0
WRE10090       0     REC19980320   1                                      10405608302    5608
WSE10090    55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                      60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                      60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
```

```
SVLKGILM        0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM        0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129        0      94     161     251     359     479    1054    1410    2079    3759    4090    5355
SAPIT129        0      12      16      20      23      25      33      39      50      62      72      98
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI      1       1   CADDO
IS      4       0  125000  125001  865000
IP            100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129.DIS

```
**
** Carollo add additional CPs for 1 reservoir (pit 129) ad flow analyses.
FD585100  A10000       0
WP585100 1.26875
FDTCUSBC  A10000       0
WPTCUSBC 35.3043
FDPPDISC  A10000       0
WPPPDISC 21.8636
**
**TXU app 5850, 6/24/05, kb
** TXU MINING add additional CPs for 13 diversion and 7 reservoirs
FD585008  A10000       0
WP585008  5.0368
FD585037  A10000       0
WP585037  0.4791
FD585009  A10000       0
WP585009  1.1166
FD585010  A10000       0
WP585010  1.2373
FD585031  A10000       0
WP585031  0.4284
FD585007  A10000       0
WP585007  0.2604
FD585006  A10000       0
WP585006  2.8062
FD585036  A10000       0
WP585036  0.4570
FD585034  A10000       0
WP585034  0.5905
FD585033  A10000       0
WP585033  2.9988
FD585035  A10000       0
WP585035  0.6235
FD585032  A10000       0
WP585032  4.2301
```

```
FD585005  A10000       0
WP585005  5.8348
FD585004  A10000       0
WP585004  0.1356
FD585003  A10000       0
WP585003  1.9687
FD585002  A10000       0
WP585002  0.1512
FD585001  A10000       0
WP585001  0.1708
FD585011  A10000       0
WP585011  2.2375
FD585012  A10000       0
WP585012  2.6298
FD585013  A10000       0
WP585013  1.0074
**
**  Flow Distribution and Coefficients for all nine scenarios
** ADD ADDITIONAL CPS FOR A5814
FD581431  A10000       0
WP581431    .855
FD581432  A10000       0
WP581432    .930
FD581433  A10000       0
WP581433    .401
** ADD ADDITIONAL CPS FOR A5813
FD581301  D10000       0
WP581301   7.151
**
FD581302  D10000       0
WP581302   0.303
**
FD581303  D10000       0
WP581303   2.545
**
```

```
** ADD ADDITIONAL CPS FOR BARNES CREEK WATERSHED
FD458232  B10000       0  A10000
WP458232   3.364
**
FD458237  B10000       0  A10000
WP458237    .227
**
FDA10370  A10000       0
FDA10350  A10000       0
FDA10340  A10000       0
FDA10300  A10000       0
FDA10290  A10000       0
FDA10280  A10000       0
FDA10260  A10000       0
FDA10240  A10000       0
FDA10200  A10000       0
FDA10120  A10000       0
FDA10100  A10000       0
FDA10090  A10000       0
FDA10070  A10000       0
FDA10060  A10000       0
FDA10050  A10000       0
FDA10040  A10000       0
FDA10030  A10000       0
FDA10020  A10000       0
FDA10010  A10000       0
FDB10320  B10000       0  A10000
FDB10310  B10000       0  A10000
FDB10300  B10000       0  A10000
FDB10290  B10000       0  A10000
FDB10270  B10000       0  A10000
FDB10260  B10000       0  A10000
FDB10250  B10000       0  A10000
FDB10230  B10000       0  A10000
FDB10220  B10000       0  A10000
```

cyp03_pit129.DIS

FDB10210	B10000	0	A10000
FDB10200	B10000	0	A10000
FDB10180	B10000	0	A10000
FDB10170	B10000	0	A10000
FDB10150	B10000	1	A10000
FDB10120	B10000	0	A10000
FDB10110	B10000	0	A10000
FDB10100	B10000	0	A10000
FDB10090	B10000	0	A10000
FDB10080	B10000	0	A10000
FDB10070	B10000	0	A10000
FDB10050	B10000	0	A10000
FDB10040	B10000	1	A10000
FDC10050	C10000	0	
FDC10040	C10000	0	
FDC10030	C10000	0	
FDC10010	C10000	0	
FDD10190	D10000	0	
FDD10180	D10000	0	
FDD10170	D10000	0	
FDD10160	D10000	0	
FDD10150	D10000	0	
FDD10140	D10000	0	
FDD10130	D10000	0	
FDD10120	D10000	0	
FDD10110	D10000	0	
FDD10090	D10000	0	
FDD10080	D10000	0	
FDD10070	D10000	0	
FDD10060	D10000	0	
FDD10050	D10000	0	
FDD10030	D10000	0	
FDD10040	D10000	0	
FDD10020	D10000	0	
FDD10010	D10000	0	

```
FDE10090  E10000      0  D10000
FDE10080  E10000      0  D10000
FDE10070  E10000      0  D10000
FDE10060  E10000      1  D10000
FDE10050  E10000      0  D10000
FDE10040  E10000      1  D10000
FDE10020  E10000      0  D10000
FDE10010  E10000      0  D10000
FDF10250  F10000      0  B10000  C10000  E10000
FDF10240  F10000      0  B10000  C10000  E10000
FDF10230  F10000      1  B10000  C10000  E10000
FDF10220  F10000      1  B10000  C10000  E10000
FDF10210  F10000      1  B10000  C10000  E10000
FDF10190  F10000      1  B10000  C10000  E10000
FDF10180  F10000      1  C10000  B10000  E10000
FDF10170  F10000      1  C10000  B10000  E10000
FDF10160  F10000      1  E10000  B10000  C10000
FDF10140  F10000      0  B10000  C10000  E10000
FDF10130  F10000      3  B10000  C10000  E10000
FDF10120  F10000      0  B10000  C10000  E10000
FDF10110  F10000      0  B10000  C10000  E10000
FDF10100  F10000      0  B10000  C10000  E10000
FDF10090  F10000      0  B10000  C10000  E10000
FDF10080  F10000      3  B10000  C10000  E10000
FDF10030  F10000      0  B10000  C10000  E10000
FDF10020  F10000      0  B10000  C10000  E10000
FDF10005  F10000      3  B10000  C10000  E10000
FD 10050  F10000      0  B10000  C10000  E10000
FD 10040  F10000      0  B10000  C10000  E10000
FD 10020  F10000      0  B10000  C10000  E10000
FD 10010  F10000      0  B10000  C10000  E10000
**
**  Watershed Parameters
**
WPA10370  6.8736    72.93    43.42
```

WPA10350	0.705	32.78	44.21
WPA10340	74.0257	65.96	43.92
WPA10300	165.78	68.53	43.83
WPA10290	3.8945	68.95	45.12
WPA10280	0.8391	69.57	45.12
WPA10260	2.4997	62.95	45.24
WPA10240	36.26	71.65	45.28
WPA10200	240.042	70.22	44.26
WPA10120	8.6031	69.44	46.42
WPA10100	0.149	65.79	46.3
WPA10090	0.8048	69.67	46.51
WPA10070	3.6154	62.41	46.49
WPA10060	0.4779	70.53	46.57
WPA10050	0.0784	79.65	46.54
WPA10040	0.1014	66.97	46.46
WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10150	682.23	69.54	44.98
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79

cyp03_pit129.DIS

WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10000	885.97	68.96	45.11
WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99
WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	7.1486	67.87	45.01
WPD10040	0.7809	64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69

WPE10050	0.4741	57.7	46.38
WPE10040	594.00	65.86	44.86
WPE10020	0.4527	65.03	47.46
WPE10010	9.9421	61.84	47.5
WPE10000	691.28	65.25	45.16
WPF10250	0.1139	68.6	46.67
WPF10240	1.0911	58.52	46.67
WPF10230	927.86	68.58	45.18
WPF10220	940.39	68.52	45.2
WPF10210	941.34	68.52	45.2
WPF10190	947.39	68.51	45.21
WPF10180	371.10	64.64	46.75
WPF10170	388.06	64.64	46.75
WPF10160	709.18	65.26	45.21
WPF10140	5.7082	64.03	47.1
WPF10130	2080.13	66.58	45.53
WPF10120	0.4119	55.16	47.76
WPF10110	2.9505	63.56	47.78
WPF10100	1.0985	61.45	47.81
WPF10090	0.3736	55	47.8
WPF10080	2158.50	66.53	45.62
WPF10030	1.1542	61.58	47.74
WPF10020	304.96	61.15	47.59
WPF10005	2791.60	66.21	46.08
WPF10000	2791.60	66.21	46.08
WP 10050	0.8384	75.04	47.24
WP 10040	3.8182	74.8	47.25
WP 10020	0.5407	67.2	47.12
WP 10010	105.81	34.29	47.2
WPSABINE	100	100	100
WPSULPHR	100	100	100
WPA240DM	100	100	100
WPB270DM	100	100	100
WPB70DUM	100	100	100
WPB20MUN	100	100	100

WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
**WPQAD412	100	100	100
**WPQAD413	100	100	100
**WPQAD512	100	100	100
**WP 513	100	100	100

ED

cyp03_pit129.EVA

EVA10200	1948	0.129	0.151	0.019	0.073	0.032	0.442	0.244	0.375	0.467	0.225	-0.059	0.051
EVB10170	1948	0.015	0.061	0.138	0.068	-0.067	0.421	0.235	0.315	0.386	0.217	-0.155	0.031
EVB10070	1948	-0.016	0.053	0.162	0.070	-0.081	0.417	0.246	0.297	0.370	0.216	-0.186	0.023
EVF10005	1948	-0.037	0.069	0.204	0.076	-0.056	0.413	0.273	0.299	0.364	0.249	-0.219	0.027
EVA10340	1948	0.164	0.185	-0.004	0.076	0.075	0.447	0.252	0.401	0.493	0.243	-0.034	0.063
EVA10240	1948	0.142	0.163	0.009	0.074	0.046	0.444	0.247	0.383	0.477	0.229	-0.049	0.055
EVb10040	1948	-0.024	0.059	0.177	0.072	-0.072	0.415	0.256	0.297	0.368	0.228	-0.198	0.025
EVB10270	1948	0.075	0.104	0.066	0.069	-0.024	0.433	0.235	0.342	0.428	0.210	-0.101	0.038
EV 513	1948	-0.050	0.080	0.230	0.080	-0.040	0.410	0.290	0.300	0.360	0.270	-0.240	0.030
EVQAD412	1948	0.350	0.400	-0.240	0.100	0.280	0.490	0.320	0.480	0.650	0.250	0.100	0.080
EVQAD413	1948	0.050	0.000	0.030	0.050	-0.160	0.430	0.160	0.290	0.390	0.110	-0.080	0.010
EVQAD512	1948	0.100	0.080	0.170	0.060	0.020	0.420	0.210	0.420	0.420	0.310	-0.080	0.090
EVA10200	1949	-0.366	0.055	-0.057	-0.007	0.125	0.281	0.089	0.480	0.368	0.024	0.214	-0.027
EVB10170	1949	-0.427	0.040	-0.034	-0.007	0.191	0.080	0.007	0.462	0.352	-0.073	0.320	-0.068
EVB10070	1949	-0.427	0.033	-0.040	-0.009	0.187	0.049	-0.049	0.428	0.330	-0.094	0.326	-0.080
EVF10005	1949	-0.423	0.031	-0.034	-0.034	0.189	0.086	-0.086	0.398	0.318	-0.165	0.341	-0.080
EVA10340	1949	-0.472	0.062	-0.079	-0.043	0.172	0.326	0.142	0.542	0.395	-0.077	0.297	-0.031
EVA10240	1949	-0.469	0.057	-0.079	-0.032	0.171	0.274	0.115	0.528	0.384	-0.064	0.297	-0.040
EVB10040	1949	-0.425	0.033	-0.038	-0.018	0.187	0.062	-0.062	0.417	0.326	-0.120	0.331	-0.080

EVB10270	1949	-0.450	0.047	-0.062	-0.011	0.178	0.152	0.054	0.493	0.364	-0.050	0.305	-0.059
EVQAD412	1949	-0.580	0.070	-0.230	-0.100	0.100	0.650	0.160	0.550	0.370	-0.120	0.260	-0.020
EVQAD413	1949	-0.440	0.040	-0.060	0.070	0.180	-0.070	0.070	0.520	0.370	0.130	0.280	-0.080
EVQAD512	1949	-0.380	0.080	0.080	-0.040	0.250	0.270	0.280	0.620	0.480	-0.100	0.330	0.010
EV 513	1949	-0.420	0.030	-0.030	-0.050	0.190	0.110	-0.110	0.380	0.310	-0.210	0.350	-0.080
EVA10200	1950	0.054	0.065	0.127	0.022	0.040	0.250	0.121	0.420	-0.063	0.246	0.119	0.159
EVB10170	1950	0.004	0.045	0.157	0.019	0.013	0.261	0.116	0.476	-0.211	0.218	0.136	0.168
EVB10070	1950	-0.003	0.047	0.153	0.027	0.003	0.250	0.106	0.463	-0.237	0.207	0.127	0.157
EVF10005	1950	-0.007	0.031	0.157	0.023	0.019	0.244	0.133	0.473	-0.214	0.203	0.111	0.147
EVA10340	1950	0.048	0.035	0.136	-0.009	0.080	0.236	0.153	0.473	-0.107	0.250	0.169	0.192
EVA10240	1950	0.041	0.042	0.135	-0.001	0.063	0.236	0.136	0.464	-0.137	0.243	0.167	0.188
EVB10040	1950	-0.005	0.041	0.155	0.025	0.009	0.248	0.116	0.467	-0.229	0.205	0.121	0.153
EVB10270	1950	0.022	0.051	0.143	0.013	0.028	0.246	0.112	0.461	-0.193	0.228	0.154	0.178
EVQAD412	1950	0.110	0.050	0.060	-0.020	0.150	0.120	0.140	0.370	-0.060	0.260	0.210	0.190
EVQAD413	1950	0.010	0.100	0.140	0.040	-0.050	0.270	0.020	0.430	-0.310	0.220	0.180	0.190
EVQAD512	1950	0.020	-0.020	0.220	-0.040	0.100	0.360	0.260	0.630	0.010	0.280	0.140	0.220
EV 513	1950	-0.010	0.020	0.160	0.020	0.030	0.240	0.150	0.480	-0.200	0.200	0.100	0.140
EVA10200	1951	-0.131	-0.015	0.113	0.023	0.124	0.166	0.147	0.376	-0.046	0.160	0.033	-0.009
EVB10170	1951	-0.208	-0.024	0.080	0.021	0.143	-0.026	0.148	0.333	-0.132	0.129	0.038	-0.072

EVB10070	1951	-0.233	-0.020	0.055	0.019	0.160	-0.042	0.136	0.307	-0.141	0.136	0.030	-0.102
EVF10005	1951	-0.243	-0.014	0.015	0.056	0.166	0.008	0.151	0.297	-0.116	0.163	0.036	-0.132
EVA10340	1951	-0.146	-0.041	0.115	0.060	0.115	0.165	0.178	0.409	-0.113	0.135	0.083	0.000
EVA10240	1951	-0.160	-0.039	0.112	0.043	0.124	0.122	0.165	0.393	-0.127	0.128	0.073	-0.011
EVB10040	1951	-0.237	-0.018	0.040	0.032	0.162	-0.024	0.141	0.303	-0.132	0.146	0.032	-0.113
EVB10270	1951	-0.190	-0.033	0.101	0.017	0.138	0.024	0.146	0.357	-0.143	0.121	0.050	-0.042
EVQAD412	1951	-0.140	-0.060	0.090	0.080	0.150	0.440	0.150	0.440	-0.160	0.150	0.130	0.020
EVQAD413	1951	-0.200	-0.040	0.180	-0.100	0.140	-0.200	0.090	0.340	-0.220	0.050	0.010	-0.010
EVQAD512	1951	-0.070	-0.030	0.160	0.130	0.030	0.110	0.280	0.470	0.010	0.150	0.090	0.050
EV 513	1951	-0.250	-0.010	-0.010	0.080	0.170	0.040	0.160	0.290	-0.100	0.180	0.040	-0.150
EVA10200	1952	-0.056	-0.105	-0.015	-0.042	0.026	0.389	0.233	0.360	0.455	0.275	-0.282	-0.151
EVB10170	1952	-0.110	-0.155	-0.059	-0.073	0.031	0.384	0.271	0.353	0.445	0.250	-0.333	-0.192
EVB10070	1952	-0.120	-0.159	-0.057	-0.066	0.037	0.386	0.267	0.339	0.434	0.243	-0.318	-0.183
EVF10005	1952	-0.126	-0.178	-0.047	-0.075	0.027	0.395	0.257	0.358	0.425	0.241	-0.264	-0.181
EVA10340	1952	-0.081	-0.163	-0.056	-0.094	0.004	0.385	0.244	0.398	0.479	0.276	-0.312	-0.227
EVA10240	1952	-0.086	-0.158	-0.059	-0.086	0.012	0.384	0.249	0.382	0.473	0.271	-0.325	-0.220
EVB10040	1952	-0.122	-0.166	-0.053	-0.069	0.033	0.389	0.263	0.346	0.431	0.243	-0.299	-0.183
EVB10270	1952	-0.100	-0.151	-0.062	-0.074	0.028	0.382	0.262	0.355	0.458	0.259	-0.343	-0.204
EVQAD412	1952	-0.070	-0.180	-0.050	-0.090	-0.010	0.390	0.170	0.390	0.500	0.300	-0.250	-0.260

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EVQAD413    1952  -0.100  -0.100  -0.090  -0.040   0.070   0.360   0.300   0.280   0.460   0.250  -0.490
-0.190
EVQAD512    1952  -0.060  -0.170  -0.050  -0.140  -0.030   0.390   0.300   0.500   0.490   0.280  -0.310
-0.230
EV   513    1952  -0.130  -0.190  -0.040  -0.080   0.020   0.400   0.250   0.370   0.420   0.240  -0.230
-0.180
EVA10200    1953  -0.081  -0.053  -0.045  -0.017  -0.049   0.391   0.104   0.438   0.414   0.266  -0.012
-0.121
EVB10170    1953  -0.118  -0.063  -0.117  -0.094   0.021   0.369   0.118   0.470   0.397   0.242   0.029
-0.186
EVB10070    1953  -0.137  -0.073  -0.123  -0.114   0.023   0.354   0.090   0.467   0.393   0.240   0.023
-0.199
EVF10005    1953  -0.127  -0.096  -0.127  -0.099   0.027   0.333   0.084   0.457   0.391   0.240   0.021
-0.230
EVA10340    1953  -0.068  -0.084  -0.092   0.014  -0.049   0.395   0.145   0.445   0.417   0.258   0.021
-0.178
EVA10240    1953  -0.085  -0.079  -0.096  -0.011  -0.043   0.392   0.131   0.450   0.414   0.255   0.020
-0.175
EVB10040    1953  -0.133  -0.081  -0.125  -0.109   0.025   0.347   0.088   0.463   0.393   0.240   0.023
-0.210
EVB10270    1953  -0.113  -0.066  -0.107  -0.065  -0.012   0.383   0.116   0.462   0.405   0.248   0.023
-0.174
EVQAD412    1953  -0.090  -0.160  -0.070   0.120  -0.210   0.390   0.040   0.380   0.440   0.280  -0.030
-0.200
EVQAD413    1953  -0.170   0.000  -0.110  -0.160   0.010   0.420   0.110   0.500   0.400   0.240   0.030
-0.100
EVQAD512    1953   0.050  -0.030  -0.090   0.040   0.080   0.420   0.330   0.490   0.410   0.250   0.080
-0.170
EV   513    1953  -0.120  -0.110  -0.130  -0.090   0.030   0.320   0.080   0.450   0.390   0.240   0.020
-0.250
EVA10200    1954  -0.091   0.179   0.234   0.088  -0.142   0.499   0.487   0.627   0.383  -0.156   0.019
-0.042
EVB10170    1954  -0.117   0.204   0.245   0.084  -0.239   0.553   0.548   0.636   0.418  -0.310  -0.013
-0.076
EVB10070    1954  -0.120   0.196   0.233   0.086  -0.258   0.549   0.533   0.601   0.416  -0.281  -0.026
-0.084
EVF10005    1954  -0.114   0.217   0.243   0.119  -0.228   0.574   0.556   0.570   0.431  -0.238  -0.047
-0.063
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EVA10340	1954	-0.120	0.245	0.289	0.124	-0.120	0.561	0.617	0.722	0.403	-0.308	0.042	-0.034
EVA10240	1954	-0.123	0.231	0.275	0.110	-0.150	0.550	0.596	0.708	0.399	-0.309	0.037	-0.049
EVB10040	1954	-0.118	0.204	0.237	0.098	-0.247	0.558	0.541	0.590	0.421	-0.266	-0.034	-0.077
EVB10270	1954	-0.124	0.207	0.252	0.085	-0.212	0.541	0.557	0.670	0.402	-0.314	0.015	-0.073
EVQAD412	1954	-0.160	0.260	0.300	0.180	0.000	0.520	0.650	0.750	0.330	-0.180	0.120	-0.020
EVQAD413	1954	-0.140	0.130	0.200	-0.020	-0.350	0.470	0.460	0.700	0.370	-0.420	0.040	-0.150
EVQAD512	1954	-0.060	0.310	0.350	0.140	-0.080	0.660	0.700	0.780	0.500	-0.440	-0.010	0.030
EV 513	1954	-0.110	0.230	0.250	0.140	-0.210	0.590	0.570	0.550	0.440	-0.210	-0.060	-0.050
EVA10200	1955	-0.026	-0.056	0.161	0.079	0.032	0.374	0.237	0.118	0.202	0.227	0.179	0.084
EVB10170	1955	-0.071	-0.106	0.148	0.099	0.031	0.337	0.200	0.000	0.158	0.198	0.247	0.069
EVB10070	1955	-0.083	-0.120	0.156	0.103	0.010	0.323	0.157	-0.023	0.142	0.185	0.227	0.060
EVF10005	1955	-0.093	-0.132	0.189	0.126	-0.002	0.333	0.147	-0.039	0.190	0.243	0.223	0.060
EVA10340	1955	-0.044	-0.075	0.172	0.104	0.072	0.401	0.328	0.070	0.237	0.297	0.290	0.100
EVA10240	1955	-0.049	-0.081	0.162	0.097	0.062	0.385	0.299	0.058	0.206	0.262	0.278	0.093
EVB10040	1955	-0.087	-0.124	0.168	0.111	0.006	0.327	0.153	-0.029	0.159	0.206	0.225	0.060
EVB10270	1955	-0.061	-0.094	0.146	0.091	0.043	0.352	0.237	0.027	0.158	0.203	0.256	0.078
EVQAD412	1955	-0.040	-0.070	0.230	0.100	0.050	0.450	0.370	0.110	0.250	0.360	0.270	0.120
EVQAD413	1955	-0.050	-0.080	0.050	0.030	0.050	0.290	0.190	0.030	-0.010	0.000	0.240	0.060
EVQAD512	1955	-0.020	-0.050	0.160	0.140	0.150	0.440	0.450	0.100	0.390	0.420	0.380	0.120

EV 513	1955	-0.100	-0.140	0.210	0.140	-0.010	0.340	0.140	-0.050	0.220	0.280	0.220	0.060
EVA10200	1956	0.005	-0.102	0.143	0.095	0.120	0.288	0.389	0.460	0.414	0.191	-0.135	0.028
EVB10170	1956	-0.038	-0.180	0.095	0.067	0.055	0.234	0.378	0.385	0.343	0.130	-0.122	-0.007
EVB10070	1956	-0.043	-0.184	0.053	0.033	0.031	0.193	0.317	0.343	0.297	0.100	-0.127	-0.023
EVF10005	1956	-0.053	-0.169	0.051	0.037	0.006	0.209	0.319	0.341	0.299	0.100	-0.129	-0.033
EVA10340	1956	-0.022	-0.130	0.226	0.182	0.162	0.366	0.575	0.553	0.512	0.225	-0.136	0.036
EVA10240	1956	-0.022	-0.142	0.195	0.153	0.148	0.328	0.526	0.517	0.473	0.202	-0.136	0.028
EVB10040	1956	-0.047	-0.179	0.053	0.035	0.022	0.199	0.317	0.343	0.297	0.100	-0.127	-0.027
EVB10270	1956	-0.028	-0.167	0.130	0.096	0.102	0.259	0.428	0.436	0.390	0.154	-0.130	0.008
EVQAD412	1956	0.000	-0.060	0.270	0.230	0.290	0.390	0.640	0.680	0.610	0.260	-0.190	0.050
EVQAD413	1956	-0.010	-0.230	0.060	0.020	0.110	0.140	0.310	0.350	0.290	0.100	-0.120	0.010
EVQAD512	1956	-0.040	-0.140	0.360	0.290	0.110	0.550	0.780	0.620	0.630	0.320	-0.080	0.070
EV 513	1956	-0.060	-0.160	0.050	0.040	-0.010	0.220	0.320	0.340	0.300	0.100	-0.130	-0.040
EVA10200	1957	-0.118	-0.114	-0.141	-0.201	0.065	0.170	0.285	0.304	-0.029	-0.148	-0.176	0.007
EVB10170	1957	-0.191	-0.215	-0.224	-0.431	0.088	0.047	0.240	0.251	-0.110	-0.392	-0.246	0.014
EVB10070	1957	-0.204	-0.240	-0.234	-0.431	0.131	0.017	0.190	0.230	-0.117	-0.438	-0.257	0.016
EVF10005	1957	-0.195	-0.246	-0.219	-0.412	0.216	0.019	0.196	0.236	-0.101	-0.488	-0.253	0.043
EVA10340	1957	-0.138	-0.122	-0.182	-0.281	0.066	0.171	0.420	0.327	-0.105	-0.231	-0.180	0.014
EVA10240	1957	-0.152	-0.140	-0.196	-0.303	0.060	0.143	0.377	0.307	-0.114	-0.253	-0.193	0.006

EVB10040	1957	-0.201	-0.242	-0.229	-0.424	0.161	0.017	0.192	0.232	-0.111	-0.456	-0.255	0.026
EVB10270	1957	-0.179	-0.185	-0.219	-0.372	0.059	0.083	0.287	0.269	-0.122	-0.321	-0.225	0.001
EVQAD412	1957	-0.110	-0.050	-0.170	0.040	0.160	0.260	0.510	0.360	-0.160	-0.080	-0.100	-0.010
EVQAD413	1957	-0.230	-0.220	-0.280	-0.490	-0.140	0.010	0.170	0.210	-0.170	-0.280	-0.270	-0.070
EVQAD512	1957	-0.090	-0.090	-0.120	-0.500	-0.010	0.230	0.570	0.400	0.000	-0.260	-0.190	0.080
EV 513	1957	-0.190	-0.250	-0.210	-0.400	0.270	0.020	0.200	0.240	-0.090	-0.520	-0.250	0.060
EVA10200	1958	-0.005	0.064	0.001	-0.070	0.232	0.109	0.123	0.094	-0.086	0.109	-0.099	0.046
EVB10170	1958	-0.015	0.067	-0.025	-0.151	0.342	-0.039	0.132	-0.010	-0.314	0.034	-0.087	0.075
EVB10070	1958	-0.020	0.060	-0.028	-0.179	0.364	-0.093	0.109	-0.048	-0.378	0.029	-0.094	0.077
EVF10005	1958	-0.014	0.060	0.002	-0.210	0.435	-0.109	0.140	-0.006	-0.453	0.048	-0.073	0.079
EVA10340	1958	-0.009	0.078	-0.004	-0.079	0.317	0.128	0.195	0.140	-0.161	0.081	-0.063	0.043
EVA10240	1958	-0.014	0.074	-0.016	-0.089	0.307	0.092	0.168	0.094	-0.182	0.069	-0.075	0.046
EVB10040	1958	-0.018	0.060	-0.017	-0.190	0.390	-0.099	0.120	-0.033	-0.405	0.036	-0.087	0.077
EVB10270	1958	-0.019	0.067	-0.033	-0.119	0.306	0.012	0.129	0.012	-0.244	0.043	-0.092	0.060
EVQAD412	1958	-0.040	0.060	-0.010	-0.040	0.300	0.200	0.150	0.190	-0.100	0.140	-0.080	-0.030
EVQAD413	1958	-0.040	0.060	-0.120	-0.080	0.140	-0.040	0.010	-0.180	-0.140	-0.030	-0.160	0.070
EVQAD512	1958	0.050	0.120	0.070	-0.060	0.380	0.260	0.390	0.340	-0.100	0.090	0.020	0.100
EV 513	1958	-0.010	0.060	0.020	-0.230	0.480	-0.120	0.160	0.020	-0.500	0.060	-0.060	0.080
EVA10200	1959	0.046	-0.102	0.190	0.086	0.040	0.160	0.037	0.339	0.270	0.058	0.009	-0.115

EVB10170	1959	0.043	-0.142	0.218	0.059	-0.024	0.132	-0.028	0.342	0.211	0.038	0.022	-0.233
EVB10070	1959	0.040	-0.144	0.209	0.047	-0.016	0.155	-0.044	0.346	0.203	0.056	0.007	-0.240
EVF10005	1959	0.046	-0.129	0.228	0.037	-0.031	0.201	-0.035	0.361	0.213	0.077	0.009	-0.246
EVA10340	1959	0.048	-0.128	0.241	0.106	-0.002	0.092	0.035	0.327	0.258	-0.019	0.070	-0.170
EVA10240	1959	0.044	-0.135	0.228	0.099	0.004	0.092	0.019	0.326	0.246	-0.012	0.057	-0.177
EVB10040	1959	0.042	-0.139	0.216	0.043	-0.021	0.172	-0.041	0.351	0.207	0.064	0.007	-0.242
EVB10270	1959	0.040	-0.145	0.213	0.078	-0.001	0.104	-0.014	0.330	0.222	0.012	0.033	-0.205
EVQAD412	1959	0.030	-0.130	0.210	0.150	0.120	0.080	0.070	0.300	0.300	-0.070	0.080	-0.060
EVQAD413	1959	0.020	-0.190	0.150	0.080	0.030	0.010	-0.070	0.300	0.170	-0.010	0.000	-0.220
EVQAD512	1959	0.090	-0.090	0.340	0.100	-0.160	0.100	0.090	0.360	0.280	-0.010	0.130	-0.240
EV 513	1959	0.050	-0.120	0.240	0.030	-0.040	0.230	-0.030	0.370	0.220	0.090	0.010	-0.250
EVA10200	1960	-0.024	0.001	0.173	0.249	0.182	0.222	0.316	0.242	0.052	0.121	0.021	-0.101
EVB10170	1960	-0.036	-0.042	0.188	0.334	0.270	0.144	0.410	0.216	-0.082	0.050	-0.009	-0.260
EVB10070	1960	-0.040	-0.050	0.190	0.336	0.282	0.146	0.426	0.216	-0.109	0.047	-0.032	-0.250
EVF10005	1960	-0.034	-0.056	0.196	0.345	0.324	0.161	0.453	0.231	-0.128	0.049	-0.062	-0.244
EVA10340	1960	-0.036	-0.012	0.179	0.307	0.247	0.174	0.348	0.213	-0.005	0.077	0.061	-0.189
EVA10240	1960	-0.040	-0.017	0.179	0.309	0.241	0.167	0.353	0.209	-0.019	0.072	0.053	-0.194
EVB10040	1960	-0.038	-0.052	0.192	0.339	0.297	0.151	0.436	0.221	-0.116	0.047	-0.043	-0.248
EVB10270	1960	-0.042	-0.030	0.182	0.319	0.244	0.151	0.377	0.207	-0.054	0.059	0.024	-0.224

cyp03_pit129.EVA

EVQAD412	1960	-0.070	0.020	0.160	0.250	0.210	0.240	0.260	0.190	0.030	0.120	0.120	0.030
EVQAD413	1960	-0.060	-0.030	0.170	0.310	0.150	0.100	0.340	0.170	-0.050	0.040	0.060	-0.270
EVQAD512	1960	0.020	-0.020	0.200	0.360	0.310	0.140	0.410	0.260	0.040	0.060	0.050	-0.390
EV 513	1960	-0.030	-0.060	0.200	0.350	0.350	0.170	0.470	0.240	-0.140	0.050	-0.080	-0.240
EVA10200	1961	0.063	-0.027	-0.005	0.283	0.160	-0.056	0.102	0.311	0.182	0.149	-0.204	-0.107
EVB10170	1961	0.012	-0.042	-0.081	0.407	0.259	-0.276	0.104	0.308	0.109	0.100	-0.219	-0.169
EVB10070	1961	0.014	-0.043	-0.094	0.422	0.272	-0.324	0.095	0.306	0.090	0.086	-0.224	-0.183
EVF10005	1961	-0.019	-0.041	-0.061	0.470	0.308	-0.401	0.141	0.333	0.084	0.113	-0.215	-0.181
EVA10340	1961	0.004	-0.047	0.010	0.368	0.214	-0.163	0.148	0.321	0.157	0.170	-0.214	-0.123
EVA10240	1961	0.017	-0.048	-0.016	0.363	0.213	-0.171	0.125	0.310	0.146	0.147	-0.219	-0.135
EVB10040	1961	0.002	-0.043	-0.082	0.439	0.285	-0.352	0.112	0.316	0.088	0.096	-0.221	-0.183
EVB10270	1961	0.028	-0.046	-0.066	0.373	0.227	-0.213	0.093	0.298	0.122	0.108	-0.224	-0.158
EVQAD412	1961	0.050	-0.070	0.090	0.300	0.140	-0.090	0.130	0.300	0.160	0.200	-0.240	-0.110
EVQAD413	1961	0.120	-0.050	-0.200	0.270	0.160	-0.080	-0.050	0.220	0.110	0.000	-0.250	-0.190
EVQAD512	1961	-0.110	-0.020	0.070	0.460	0.290	-0.180	0.290	0.400	0.220	0.260	-0.160	-0.070
EV 513	1961	-0.040	-0.040	-0.040	0.500	0.330	-0.450	0.170	0.350	0.080	0.130	-0.210	-0.180
EVA10200	1962	-0.079	0.021	0.138	0.072	0.300	0.126	0.340	0.449	0.060	-0.038	-0.035	0.053
EVB10170	1962	-0.114	0.028	0.199	0.071	0.390	0.069	0.398	0.504	0.003	-0.099	-0.122	0.039
EVB10070	1962	-0.120	0.039	0.215	0.074	0.380	0.096	0.413	0.509	0.022	-0.096	-0.136	0.030

EVF10005	1962	-0.114	0.082	0.261	0.065	0.380	0.129	0.423	0.534	0.070	-0.025	-0.145	0.018
EVA10340	1962	-0.102	0.031	0.153	0.059	0.399	0.024	0.353	0.481	-0.023	-0.057	-0.017	0.051
EVA10240	1962	-0.108	0.021	0.151	0.064	0.394	0.030	0.361	0.477	-0.027	-0.082	-0.032	0.050
EVB10040	1962	-0.118	0.054	0.232	0.071	0.380	0.108	0.417	0.518	0.039	-0.070	-0.139	0.026
EVB10270	1962	-0.116	0.012	0.163	0.072	0.388	0.047	0.381	0.483	-0.023	-0.116	-0.079	0.046
EVQAD412	1962	-0.120	0.040	0.080	0.060	0.360	0.040	0.330	0.420	-0.030	-0.040	0.150	0.040
EVQAD413	1962	-0.140	-0.100	0.070	0.100	0.380	-0.010	0.380	0.430	-0.130	-0.320	-0.110	0.070
EVQAD512	1962	-0.050	0.070	0.240	0.030	0.470	-0.030	0.330	0.560	0.000	0.060	-0.110	0.070
EV 513	1962	-0.110	0.110	0.290	0.060	0.380	0.150	0.430	0.550	0.100	0.020	-0.150	0.010
EVA10200	1963	0.033	0.124	0.141	-0.002	0.177	0.316	0.132	0.440	0.351	0.409	-0.004	-0.037
EVB10170	1963	0.023	0.131	0.161	-0.081	0.283	0.294	0.179	0.419	0.289	0.437	-0.025	-0.100
EVB10070	1963	0.017	0.127	0.168	-0.090	0.305	0.299	0.162	0.399	0.267	0.436	-0.037	-0.116
EVF10005	1963	0.019	0.123	0.224	-0.096	0.345	0.318	0.198	0.418	0.251	0.451	-0.039	-0.125
EVA10340	1963	0.036	0.140	0.181	-0.017	0.218	0.296	0.204	0.506	0.361	0.452	0.032	-0.044
EVA10240	1963	0.031	0.139	0.164	-0.025	0.222	0.292	0.182	0.482	0.349	0.446	0.022	-0.055
EVB10040	1963	0.017	0.125	0.188	-0.092	0.320	0.306	0.175	0.406	0.261	0.441	-0.037	-0.119
EVB10270	1963	0.024	0.135	0.144	-0.054	0.246	0.288	0.160	0.436	0.317	0.436	-0.005	-0.081
EVQAD412	1963	0.020	0.140	0.190	0.090	0.150	0.310	0.100	0.560	0.410	0.460	0.100	-0.010
EVQAD413	1963	0.010	0.140	-0.010	-0.070	0.180	0.240	0.050	0.340	0.320	0.390	-0.030	-0.090

EVQAD512	1963	0.080	0.150	0.260	-0.080	0.260	0.300	0.430	0.580	0.380	0.480	0.020	-0.020
EV 513	1963	0.020	0.120	0.260	-0.100	0.370	0.330	0.220	0.430	0.240	0.460	-0.040	-0.130
EVA10200	1964	0.052	-0.017	0.001	-0.077	0.163	0.416	0.434	0.144	0.044	0.283	-0.016	0.005
EVB10170	1964	0.037	-0.031	-0.008	-0.095	0.220	0.418	0.474	0.086	0.012	0.305	0.006	-0.066
EVB10070	1964	0.030	-0.034	-0.010	-0.098	0.227	0.420	0.449	0.053	0.022	0.303	0.013	-0.103
EVF10005	1964	0.018	-0.025	0.002	-0.050	0.229	0.426	0.468	0.069	0.076	0.307	0.023	-0.126
EVA10340	1964	0.041	-0.026	-0.017	-0.052	0.190	0.417	0.567	0.173	-0.008	0.292	-0.006	0.038
EVA10240	1964	0.042	-0.031	-0.021	-0.073	0.195	0.416	0.540	0.143	-0.019	0.291	-0.005	0.018
EVB10040	1964	0.026	-0.031	-0.006	-0.081	0.227	0.422	0.456	0.059	0.041	0.305	0.017	-0.111
EVB10270	1964	0.041	-0.035	-0.020	-0.103	0.209	0.416	0.491	0.095	-0.021	0.295	-0.001	-0.029
EVQAD412	1964	0.030	-0.040	-0.070	-0.040	0.160	0.420	0.600	0.140	-0.070	0.240	0.000	0.080
EVQAD413	1964	0.070	-0.060	-0.050	-0.250	0.220	0.400	0.390	0.000	-0.150	0.290	-0.020	-0.030
EVQAD512	1964	0.050	0.010	0.060	0.050	0.190	0.420	0.680	0.370	0.110	0.350	-0.020	0.110
EV 513	1964	0.010	-0.020	0.010	-0.020	0.230	0.430	0.480	0.080	0.110	0.310	0.030	-0.140
EVA10200	1965	-0.043	-0.111	0.042	0.254	-0.106	0.254	0.446	0.438	0.139	0.274	0.032	-0.018
EVB10170	1965	-0.129	-0.234	-0.015	0.329	-0.216	0.218	0.546	0.437	0.072	0.283	0.087	-0.106
EVB10070	1965	-0.146	-0.240	-0.030	0.346	-0.212	0.206	0.552	0.426	0.070	0.296	0.096	-0.135
EVF10005	1965	-0.161	-0.246	-0.036	0.373	-0.254	0.221	0.600	0.441	0.070	0.311	0.105	-0.181
EVA10340	1965	-0.063	-0.168	0.033	0.297	-0.206	0.256	0.551	0.482	0.072	0.253	0.054	-0.034

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EVA10240    1965  -0.073  -0.175   0.023   0.300  -0.192   0.242   0.537   0.468   0.071   0.257   0.058
-0.040
EVB10040    1965  -0.151  -0.242  -0.032   0.356  -0.227   0.211   0.569   0.431   0.070   0.301   0.099
-0.152
EVB10270    1965  -0.102  -0.204   0.001   0.311  -0.186   0.220   0.526   0.443   0.071   0.270   0.073
-0.067
EVQAD412    1965   0.000  -0.040   0.060   0.290  -0.100   0.250   0.530   0.500   0.060   0.240   0.020
0.010
EVQAD413    1965  -0.100  -0.220  -0.010   0.260  -0.080   0.160   0.400   0.380   0.070   0.250   0.070
0.010
EVQAD512    1965  -0.070  -0.260   0.060   0.290  -0.390   0.340   0.640   0.540   0.090   0.240   0.060
-0.040
EV    513   1965  -0.170  -0.250  -0.040   0.390  -0.280   0.230   0.630   0.450   0.070   0.320   0.110
-0.210
EVA10200    1966  -0.111  -0.125   0.251   0.025   0.162   0.493   0.299   0.071   0.124   0.153   0.089
-0.136
EVB10170    1966  -0.164  -0.126   0.273  -0.210   0.312   0.544   0.369   0.013   0.063   0.120   0.107
-0.208
EVB10070    1966  -0.173  -0.114   0.280  -0.195   0.367   0.563   0.378   0.039   0.080   0.119   0.093
-0.221
EVF10005    1966  -0.177  -0.105   0.286  -0.235   0.449   0.579   0.428   0.076   0.092   0.144   0.103
-0.196
EVA10340    1966  -0.148  -0.190   0.262  -0.105   0.171   0.490   0.361  -0.035   0.023   0.142   0.171
-0.141
EVA10240    1966  -0.152  -0.180   0.264  -0.096   0.185   0.499   0.350  -0.031   0.031   0.131   0.155
-0.161
EVB10040    1966  -0.175  -0.111   0.282  -0.210   0.397   0.569   0.396   0.052   0.084   0.128   0.097
-0.212
EVB10270    1966  -0.160  -0.152   0.269  -0.131   0.239   0.522   0.344  -0.013   0.048   0.116   0.122
-0.199
EVQAD412    1966  -0.160  -0.270   0.270   0.290   0.080   0.460   0.330  -0.040   0.020   0.150   0.220
-0.100
EVQAD413    1966  -0.160  -0.140   0.260  -0.070   0.110   0.510   0.220  -0.080   0.040   0.040   0.060
-0.300
EVQAD512    1966  -0.110  -0.160   0.240  -0.560   0.180   0.470   0.450  -0.060  -0.020   0.190   0.210
-0.070
EV    513   1966  -0.180  -0.100   0.290  -0.260   0.500   0.590   0.460   0.100   0.100   0.160   0.110
-0.180
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cyp03_pit129.EVA

EVA10200	1967	0.095	0.053	0.218	0.007	-0.106	0.407	0.212	0.437	0.146	0.147	0.066	-0.142
EVB10170	1967	0.094	0.044	0.266	-0.027	-0.241	0.436	0.245	0.465	0.116	0.151	0.105	-0.295
EVB10070	1967	0.087	0.040	0.276	-0.024	-0.279	0.441	0.240	0.456	0.156	0.205	0.110	-0.313
EVF10005	1967	0.089	0.046	0.303	-0.009	-0.316	0.514	0.246	0.477	0.177	0.251	0.122	-0.311
EVA10340	1967	0.113	0.064	0.241	-0.004	-0.107	0.474	0.238	0.489	0.009	0.031	0.106	-0.172
EVA10240	1967	0.107	0.057	0.240	-0.009	-0.126	0.449	0.235	0.476	0.031	0.053	0.104	-0.194
EVB10040	1967	0.087	0.042	0.286	-0.019	-0.292	0.467	0.242	0.464	0.164	0.222	0.114	-0.313
EVB10270	1967	0.097	0.047	0.246	-0.022	-0.184	0.417	0.235	0.459	0.081	0.106	0.101	-0.252
EVQAD412	1967	0.110	0.070	0.210	0.050	0.020	0.490	0.180	0.460	-0.020	0.030	0.120	-0.010
EVQAD413	1967	0.080	0.020	0.190	-0.070	-0.160	0.210	0.220	0.390	0.090	0.060	0.070	-0.320
EVQAD512	1967	0.150	0.090	0.280	-0.030	-0.130	0.590	0.320	0.590	-0.090	-0.100	0.100	-0.220
EV 513	1967	0.090	0.050	0.320	0.000	-0.340	0.560	0.250	0.490	0.190	0.280	0.130	-0.310
EVA10200	1968	-0.166	0.045	-0.026	0.055	-0.028	0.086	0.236	0.389	-0.008	0.195	-0.190	0.035
EVB10170	1968	-0.270	0.028	0.049	-0.065	-0.104	0.052	0.272	0.389	-0.173	0.120	-0.246	0.001
EVB10070	1968	-0.302	0.024	0.072	-0.092	-0.073	0.062	0.266	0.373	-0.212	0.103	-0.256	-0.010
EVF10005	1968	-0.350	-0.003	0.120	-0.122	0.015	0.104	0.275	0.389	-0.242	0.113	-0.265	-0.016
EVA10340	1968	-0.216	0.016	-0.059	0.066	-0.037	0.029	0.270	0.440	-0.065	0.207	-0.207	0.037
EVA10240	1968	-0.220	0.024	-0.052	0.049	-0.058	0.022	0.265	0.422	-0.085	0.187	-0.213	0.030
EVB10040	1968	-0.319	0.014	0.089	-0.103	-0.041	0.077	0.269	0.379	-0.223	0.107	-0.259	-0.012

EVB10270	1968	-0.239	0.035	-0.012	-0.007	-0.101	0.025	0.263	0.393	-0.133	0.143	-0.230	0.014
EVQAD412	1968	-0.220	0.000	-0.230	0.240	0.190	-0.020	0.220	0.430	-0.020	0.290	-0.170	0.060
EVQAD413	1968	-0.150	0.110	-0.080	0.000	-0.350	-0.070	0.240	0.320	-0.120	0.070	-0.230	0.010
EVQAD512	1968	-0.180	-0.010	0.080	-0.020	-0.170	0.110	0.350	0.550	0.000	0.230	-0.210	0.050
EV 513	1968	-0.380	-0.020	0.150	-0.140	0.070	0.130	0.280	0.400	-0.260	0.120	-0.270	-0.020
EVA10200	1969	0.021	-0.003	0.041	0.106	0.068	0.416	0.476	0.511	0.274	0.067	-0.071	-0.144
EVB10170	1969	0.003	-0.021	-0.003	0.089	0.104	0.447	0.548	0.518	0.258	0.006	-0.205	-0.242
EVB10070	1969	0.008	-0.032	-0.016	0.078	0.126	0.449	0.536	0.523	0.256	0.016	-0.252	-0.238
EVF10005	1969	0.064	-0.062	-0.049	0.036	0.135	0.480	0.551	0.521	0.265	0.025	-0.306	-0.208
EVA10340	1969	0.048	-0.025	0.001	0.095	0.040	0.450	0.590	0.515	0.252	-0.013	-0.039	-0.191
EVA10240	1969	0.027	-0.021	0.005	0.102	0.054	0.440	0.576	0.519	0.250	-0.009	-0.060	-0.204
EVB10040	1969	0.028	-0.043	-0.028	0.063	0.129	0.460	0.541	0.523	0.259	0.019	-0.271	-0.227
EVB10270	1969	-0.004	-0.014	0.009	0.107	0.084	0.432	0.552	0.522	0.250	0.000	-0.129	-0.232
EVQAD412	1969	0.100	-0.070	-0.020	0.100	0.020	0.420	0.590	0.550	0.220	0.000	0.130	-0.090
EVQAD413	1969	-0.170	0.060	0.090	0.210	0.100	0.350	0.490	0.530	0.230	-0.010	-0.080	-0.330
EVQAD512	1969	0.100	0.000	0.000	0.050	-0.020	0.530	0.670	0.460	0.300	-0.050	-0.090	-0.230
EV 513	1969	0.100	-0.080	-0.070	0.010	0.140	0.500	0.560	0.520	0.270	0.030	-0.340	-0.190
EVA10200	1970	0.077	-0.044	0.113	0.040	0.221	0.291	0.332	0.345	0.193	-0.057	0.043	0.040
EVB10170	1970	0.101	-0.153	0.082	0.019	0.274	0.268	0.292	0.335	0.167	-0.235	0.059	0.017

EVB10070	1970	0.106	-0.150	0.086	0.016	0.292	0.256	0.244	0.331	0.184	-0.246	0.046
-0.003												
EVF10005	1970	0.115	-0.144	0.107	0.037	0.322	0.271	0.217	0.398	0.163	-0.273	0.055
-0.007												
EVA10340	1970	0.072	-0.091	0.107	0.062	0.259	0.303	0.437	0.405	0.078	-0.171	0.112
0.068												
EVA10240	1970	0.075	-0.098	0.099	0.049	0.260	0.289	0.409	0.375	0.102	-0.174	0.098
0.055												
EVB10040	1970	0.109	-0.148	0.094	0.024	0.303	0.261	0.234	0.355	0.177	-0.256	0.049
-0.005												
EVB10270	1970	0.087	-0.126	0.085	0.025	0.263	0.268	0.342	0.328	0.149	-0.198	0.071
0.030												
EVQAD412	1970	0.030	0.060	0.160	0.110	0.300	0.290	0.510	0.450	0.010	-0.050	0.140
0.070												
EVQAD413	1970	0.080	-0.170	0.020	-0.050	0.200	0.210	0.330	0.120	0.250	-0.160	0.020
0.010												
EVQAD512	1970	0.100	-0.210	0.090	0.080	0.210	0.390	0.520	0.520	0.020	-0.280	0.160
0.140												
EV 513	1970	0.120	-0.140	0.120	0.050	0.340	0.280	0.200	0.440	0.150	-0.290	0.060
-0.010												
EVA10200	1971	0.101	0.000	0.229	0.214	0.110	0.489	0.020	0.199	0.260	0.171	0.004
-0.278												
EVB10170	1971	0.126	-0.030	0.227	0.240	0.157	0.492	-0.022	0.145	0.226	0.081	-0.026
-0.285												
EVB10070	1971	0.123	-0.043	0.216	0.233	0.163	0.480	-0.022	0.127	0.224	0.100	-0.030
-0.261												
EVF10005	1971	0.139	-0.041	0.231	0.243	0.186	0.474	0.047	0.129	0.209	0.112	-0.030
-0.236												
EVA10340	1971	0.130	0.010	0.283	0.278	0.149	0.526	0.044	0.187	0.209	0.093	0.026
-0.388												
EVA10240	1971	0.123	0.000	0.268	0.267	0.145	0.519	0.015	0.174	0.215	0.096	0.019
-0.374												
EVB10040	1971	0.129	-0.043	0.221	0.237	0.171	0.478	0.003	0.127	0.219	0.104	-0.030
-0.252												
EVB10270	1971	0.117	-0.021	0.238	0.247	0.145	0.503	-0.029	0.152	0.225	0.092	-0.005
-0.330												
EVQAD412	1971	0.100	0.020	0.320	0.310	0.130	0.540	0.100	0.170	0.180	0.220	0.120
-0.510												

EVQAD413	1971	0.070	-0.050	0.170	0.200	0.090	0.500	-0.240	0.120	0.270	0.060	-0.030	-0.340
EVQAD512	1971	0.200	0.060	0.330	0.300	0.190	0.550	0.140	0.280	0.210	-0.060	-0.030	-0.340
EV 513	1971	0.150	-0.040	0.240	0.250	0.200	0.470	0.090	0.130	0.200	0.120	-0.030	-0.220
EVA10200	1972	-0.038	0.171	0.202	0.206	0.210	0.246	0.299	0.440	0.114	-0.140	-0.176	-0.066
EVB10170	1972	-0.156	0.211	0.207	0.225	0.274	0.158	0.268	0.446	0.057	-0.245	-0.225	-0.136
EVB10070	1972	-0.182	0.210	0.187	0.207	0.276	0.138	0.240	0.446	0.053	-0.257	-0.240	-0.147
EVF10005	1972	-0.230	0.216	0.183	0.191	0.291	0.108	0.240	0.455	0.069	-0.259	-0.228	-0.143
EVA10340	1972	-0.078	0.208	0.254	0.265	0.271	0.213	0.379	0.452	0.067	-0.228	-0.155	-0.082
EVA10240	1972	-0.082	0.206	0.241	0.258	0.268	0.207	0.355	0.449	0.059	-0.235	-0.173	-0.094
EVB10040	1972	-0.199	0.212	0.185	0.201	0.281	0.127	0.240	0.449	0.059	-0.257	-0.236	-0.145
EVB10270	1972	-0.111	0.205	0.218	0.241	0.266	0.186	0.301	0.445	0.050	-0.244	-0.210	-0.120
EVQAD412	1972	0.010	0.180	0.240	0.270	0.260	0.250	0.460	0.460	0.040	-0.260	-0.110	-0.030
EVQAD413	1972	-0.030	0.190	0.200	0.260	0.230	0.230	0.240	0.420	0.000	-0.250	-0.280	-0.160
EVQAD512	1972	-0.140	0.250	0.340	0.300	0.300	0.210	0.430	0.460	0.140	-0.160	-0.100	-0.070
EV 513	1972	-0.260	0.220	0.180	0.180	0.300	0.090	0.240	0.460	0.080	-0.260	-0.220	-0.140
EVA10200	1973	-0.062	0.045	-0.047	-0.084	0.218	0.039	0.216	0.433	-0.130	-0.054	-0.005	0.015
EVB10170	1973	-0.129	0.062	-0.081	-0.061	0.332	-0.074	0.159	0.460	-0.260	-0.248	-0.001	0.016
EVB10070	1973	-0.140	0.069	-0.081	-0.036	0.349	-0.074	0.117	0.459	-0.251	-0.235	-0.014	0.007
EVF10005	1973	-0.152	0.094	-0.038	0.041	0.380	-0.065	0.094	0.484	-0.232	-0.189	0.019	0.009

EVA10340	1973	-0.097	0.051	-0.051	-0.090	0.275	-0.056	0.282	0.470	-0.274	-0.153	0.078	0.023
EVA10240	1973	-0.101	0.047	-0.069	-0.100	0.278	-0.060	0.258	0.460	-0.274	-0.171	0.053	0.018
EVB10040	1973	-0.144	0.078	-0.066	-0.008	0.360	-0.071	0.109	0.468	-0.244	-0.218	-0.002	0.007
EVB10270	1973	-0.114	0.048	-0.091	-0.100	0.300	-0.070	0.201	0.450	-0.271	-0.221	0.009	0.012
EVQAD412	1973	-0.070	0.030	-0.050	-0.110	0.200	-0.020	0.340	0.450	-0.270	0.090	0.130	-0.020
EVQAD413	1973	-0.100	-0.010	-0.220	-0.280	0.250	-0.100	0.190	0.380	-0.310	-0.380	-0.120	0.000
EVQAD512	1973	-0.100	0.090	0.040	-0.020	0.330	-0.070	0.360	0.540	-0.280	-0.310	0.160	0.100
EV 513	1973	-0.160	0.110	-0.010	0.090	0.400	-0.060	0.080	0.500	-0.220	-0.160	0.040	0.010
EVA10200	1974	-0.139	0.142	0.227	0.143	0.128	0.137	0.370	0.091	-0.208	0.076	-0.124	0.024
EVB10170	1974	-0.233	0.159	0.265	0.207	0.134	0.070	0.387	-0.008	-0.331	0.005	-0.119	0.061
EVB10070	1974	-0.263	0.150	0.266	0.197	0.136	0.057	0.356	-0.017	-0.343	0.000	-0.121	0.066
EVF10005	1974	-0.279	0.150	0.281	0.187	0.151	0.139	0.365	-0.019	-0.341	-0.006	-0.096	0.087
EVA10340	1974	-0.152	0.178	0.260	0.185	0.163	0.180	0.490	0.022	-0.330	0.020	-0.103	0.027
EVA10240	1974	-0.169	0.172	0.256	0.187	0.156	0.137	0.462	0.016	-0.336	0.018	-0.113	0.026
EVB10040	1974	-0.269	0.150	0.271	0.193	0.141	0.087	0.359	-0.017	-0.343	-0.002	-0.112	0.074
EVB10270	1974	-0.206	0.162	0.255	0.196	0.141	0.068	0.410	0.001	-0.340	0.012	-0.126	0.037
EVQAD412	1974	-0.130	0.170	0.230	0.090	0.220	0.240	0.520	0.040	-0.410	0.030	-0.110	-0.050
EVQAD413	1974	-0.210	0.150	0.220	0.230	0.090	-0.200	0.330	-0.010	-0.350	0.020	-0.200	0.000
EVQAD512	1974	-0.080	0.220	0.310	0.280	0.140	0.350	0.610	0.040	-0.210	0.020	-0.040	0.110

EV 513	1974	-0.290	0.150	0.290	0.180	0.160	0.190	0.370	-0.020	-0.340	-0.010	-0.080	0.100
EVA10200	1975	0.074	0.033	0.073	0.120	-0.021	0.171	0.303	0.357	0.316	0.286	-0.003	-0.022
EVB10170	1975	0.068	-0.051	0.080	0.103	0.009	0.110	0.354	0.342	0.299	0.218	-0.001	-0.037
EVB10070	1975	0.054	-0.073	0.070	0.097	0.009	0.094	0.346	0.343	0.303	0.194	-0.023	-0.041
EVF10005	1975	0.039	-0.077	0.070	0.087	0.034	0.079	0.373	0.359	0.319	0.173	-0.021	-0.022
EVA10340	1975	0.087	0.056	0.077	0.133	0.001	0.130	0.379	0.357	0.300	0.304	0.070	-0.020
EVA10240	1975	0.084	0.037	0.073	0.131	-0.006	0.126	0.364	0.351	0.296	0.291	0.052	-0.030
EVB10040	1975	0.049	-0.075	0.070	0.093	0.018	0.089	0.356	0.349	0.309	0.187	-0.023	-0.034
EVB10270	1975	0.076	-0.014	0.072	0.119	-0.008	0.117	0.346	0.340	0.293	0.253	0.016	-0.042
EVQAD412	1975	0.060	0.170	0.010	0.180	-0.050	0.100	0.350	0.370	0.300	0.380	0.090	-0.030
EVQAD413	1975	0.100	-0.060	0.070	0.130	-0.070	0.140	0.260	0.290	0.250	0.260	-0.030	-0.100
EVQAD512	1975	0.140	0.050	0.170	0.100	0.090	0.190	0.490	0.380	0.320	0.300	0.150	0.040
EV 513	1975	0.030	-0.080	0.070	0.080	0.050	0.070	0.390	0.370	0.330	0.160	-0.020	-0.010
EVA10200	1976	0.091	0.098	-0.118	0.059	-0.031	0.132	0.197	0.429	0.044	0.011	0.042	-0.045
EVB10170	1976	0.018	0.087	-0.194	0.098	-0.040	-0.034	0.160	0.385	-0.054	-0.030	0.071	-0.132
EVB10070	1976	-0.006	0.079	-0.217	0.127	-0.040	-0.054	0.141	0.364	-0.051	-0.018	0.060	-0.147
EVF10005	1976	-0.021	0.098	-0.207	0.129	-0.040	-0.045	0.110	0.337	-0.032	0.012	0.066	-0.143
EVA10340	1976	0.119	0.137	-0.127	0.001	-0.044	0.095	0.201	0.445	-0.043	-0.060	0.106	-0.049
EVA10240	1976	0.102	0.122	-0.148	0.023	-0.043	0.070	0.198	0.438	-0.049	-0.061	0.095	-0.066

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EVB10040	1976	-0.011	0.086	-0.213	0.127	-0.040	-0.051	0.130	0.354	-0.044	-0.007	0.062	-0.145
EVB10270	1976	0.057	0.095	-0.184	0.071	-0.042	0.008	0.183	0.414	-0.057	-0.052	0.076	-0.106
EVQAD412	1976	0.220	0.180	-0.130	-0.050	-0.050	0.260	0.220	0.490	-0.020	-0.090	0.110	0.040
EVQAD413	1976	0.040	0.020	-0.250	0.120	-0.040	-0.080	0.240	0.450	-0.110	-0.110	0.040	-0.160
EVQAD512	1976	0.110	0.170	-0.010	-0.070	-0.040	0.060	0.200	0.440	-0.040	-0.030	0.160	-0.050
EV 513	1976	-0.030	0.110	-0.200	0.130	-0.040	-0.040	0.090	0.320	-0.020	0.030	0.070	-0.140
EVA10200	1977	-0.077	0.055	0.033	0.174	0.250	0.284	0.350	0.250	0.258	0.286	-0.167	0.093
EVB10170	1977	-0.109	0.061	0.009	0.293	0.338	0.232	0.360	0.167	0.188	0.273	-0.176	0.066
EVB10070	1977	-0.114	0.066	0.009	0.323	0.340	0.233	0.333	0.141	0.173	0.273	-0.174	0.053
EVF10005	1977	-0.105	0.087	0.040	0.346	0.346	0.231	0.331	0.104	0.183	0.277	-0.147	0.057
EVA10340	1977	-0.101	0.060	0.032	0.175	0.317	0.241	0.444	0.223	0.258	0.284	-0.164	0.124
EVA10240	1977	-0.106	0.055	0.020	0.193	0.318	0.241	0.424	0.217	0.241	0.281	-0.173	0.111
EVB10040	1977	-0.111	0.074	0.020	0.331	0.342	0.233	0.333	0.128	0.177	0.275	-0.164	0.055
EVB10270	1977	-0.113	0.052	0.003	0.245	0.326	0.238	0.382	0.196	0.205	0.276	-0.184	0.082
EVQAD412	1977	-0.120	0.060	0.040	0.050	0.270	0.270	0.470	0.240	0.310	0.300	-0.160	0.170
EVQAD413	1977	-0.140	0.000	-0.090	0.250	0.320	0.240	0.340	0.260	0.140	0.260	-0.260	0.040
EVQAD512	1977	-0.050	0.080	0.090	0.200	0.360	0.210	0.530	0.240	0.300	0.280	-0.120	0.150
EV 513	1977	-0.100	0.100	0.060	0.360	0.350	0.230	0.330	0.080	0.190	0.280	-0.130	0.060
EVA10200	1978	-0.137	-0.018	0.058	0.214	0.095	0.430	0.487	0.488	0.299	0.330	-0.371	-0.078

EVB10170	1978	-0.242	-0.015	0.058	0.275	0.135	0.446	0.494	0.456	0.216	0.281	-0.414	-0.146
EVB10070	1978	-0.263	-0.004	0.059	0.276	0.137	0.453	0.481	0.447	0.207	0.264	-0.422	-0.167
EVF10005	1978	-0.273	0.011	0.084	0.297	0.139	0.463	0.456	0.431	0.197	0.255	-0.359	-0.169
EVA10340	1978	-0.168	-0.049	0.059	0.278	0.115	0.430	0.553	0.501	0.269	0.359	-0.355	-0.078
EVA10240	1978	-0.182	-0.045	0.051	0.271	0.118	0.431	0.549	0.497	0.263	0.346	-0.385	-0.094
EVB10040	1978	-0.267	0.001	0.068	0.284	0.137	0.457	0.472	0.441	0.203	0.261	-0.400	-0.167
EVB10270	1978	-0.216	-0.031	0.046	0.265	0.126	0.437	0.526	0.480	0.240	0.310	-0.426	-0.127
EVQAD412	1978	-0.110	-0.080	0.030	0.260	0.080	0.420	0.640	0.570	0.350	0.440	-0.360	-0.050
EVQAD413	1978	-0.230	-0.050	-0.020	0.210	0.130	0.420	0.560	0.500	0.240	0.290	-0.620	-0.160
EVQAD512	1978	-0.150	-0.040	0.130	0.330	0.140	0.430	0.490	0.450	0.220	0.350	-0.190	-0.020
EV 513	1978	-0.280	0.020	0.100	0.310	0.140	0.470	0.440	0.420	0.190	0.250	-0.320	-0.170
EVA10200	1979	-0.142	-0.081	0.012	0.043	-0.046	0.283	0.022	0.267	0.140	0.141	-0.007	-0.061
EVB10170	1979	-0.341	-0.140	-0.054	0.046	0.003	0.261	-0.053	0.286	0.022	0.128	-0.014	-0.099
EVB10070	1979	-0.392	-0.147	-0.061	0.045	0.025	0.239	-0.078	0.302	0.014	0.123	-0.046	-0.100
EVF10005	1979	-0.446	-0.137	-0.024	0.091	0.065	0.258	-0.042	0.350	0.005	0.146	-0.061	-0.100
EVA10340	1979	-0.166	-0.099	0.023	0.089	-0.062	0.323	0.066	0.250	0.069	0.140	0.068	-0.097
EVA10240	1979	-0.190	-0.109	0.000	0.070	-0.058	0.301	0.031	0.245	0.063	0.129	0.050	-0.098
EVB10040	1979	-0.411	-0.143	-0.048	0.062	0.040	0.246	-0.065	0.319	0.011	0.131	-0.051	-0.100
EVB10270	1979	-0.264	-0.131	-0.044	0.040	-0.034	0.265	-0.034	0.253	0.043	0.117	0.011	-0.099

EVQAD412	1979	0.000	-0.060	0.100	0.120	-0.130	0.300	0.130	0.200	0.140	0.100	0.080	-0.100
EVQAD413	1979	-0.220	-0.180	-0.180	-0.100	-0.100	0.180	-0.190	0.150	0.040	0.050	0.000	-0.100
EVQAD512	1979	-0.200	-0.080	0.070	0.160	-0.020	0.470	0.190	0.320	0.030	0.240	0.160	-0.090
EV 513	1979	-0.480	-0.130	0.000	0.120	0.090	0.270	-0.020	0.380	0.000	0.160	-0.070	-0.100
EVA10200	1980	-0.074	0.115	0.112	0.100	0.034	0.282	0.582	0.589	0.115	0.167	0.003	0.076
EVB10170	1980	-0.077	0.160	0.067	0.111	0.062	0.300	0.654	0.597	0.111	0.152	-0.005	0.084
EVB10070	1980	-0.074	0.162	0.044	0.090	0.034	0.299	0.657	0.590	0.128	0.149	-0.013	0.090
EVF10005	1980	-0.047	0.192	0.035	0.078	0.013	0.330	0.659	0.584	0.197	0.174	-0.017	0.102
EVA10340	1980	-0.091	0.155	0.138	0.148	0.087	0.293	0.669	0.636	0.081	0.166	0.033	0.074
EVA10240	1980	-0.097	0.147	0.123	0.139	0.079	0.283	0.668	0.631	0.070	0.156	0.027	0.074
EVB10040	1980	-0.064	0.173	0.041	0.086	0.027	0.310	0.657	0.588	0.153	0.158	-0.015	0.094
EVB10270	1980	-0.096	0.143	0.089	0.121	0.067	0.279	0.661	0.614	0.071	0.143	0.010	0.076
EVQAD412	1980	-0.140	0.120	0.170	0.120	0.000	0.220	0.720	0.690	0.020	0.150	0.080	0.070
EVQAD413	1980	-0.160	0.070	0.070	0.130	0.100	0.200	0.650	0.610	-0.090	0.070	0.000	0.050
EVQAD512	1980	-0.010	0.230	0.190	0.230	0.230	0.420	0.620	0.610	0.200	0.240	0.020	0.080
EV 513	1980	-0.030	0.210	0.030	0.070	0.000	0.350	0.660	0.580	0.240	0.190	-0.020	0.110
EVA10200	1981	0.120	0.027	0.116	0.197	-0.223	0.246	0.247	0.337	0.317	-0.166	0.080	0.168
EVB10170	1981	0.099	-0.018	0.078	0.229	-0.308	0.127	0.256	0.271	0.236	-0.329	0.054	0.180
EVB10070	1981	0.094	-0.034	0.070	0.224	-0.314	0.117	0.245	0.243	0.217	-0.322	0.034	0.173

cyp03_pit129.EVA

EVF10005	1981	0.085	-0.025	0.076	0.215	-0.281	0.107	0.291	0.253	0.201	-0.266	0.019	0.171
EVA10340	1981	0.124	0.054	0.123	0.237	-0.239	0.198	0.332	0.385	0.307	-0.256	0.143	0.202
EVA10240	1981	0.121	0.037	0.113	0.236	-0.260	0.190	0.304	0.357	0.296	-0.278	0.129	0.197
EVB10040	1981	0.091	-0.031	0.072	0.221	-0.302	0.113	0.262	0.247	0.211	-0.302	0.029	0.173
EVB10270	1981	0.111	0.000	0.090	0.234	-0.299	0.159	0.259	0.300	0.265	-0.321	0.090	0.187
EVQAD412	1981	0.160	0.110	0.170	0.230	-0.170	0.320	0.370	0.460	0.380	-0.120	0.240	0.210
EVQAD413	1981	0.120	-0.060	0.050	0.250	-0.420	0.150	0.100	0.210	0.270	-0.500	0.080	0.180
EVQAD512	1981	0.100	0.090	0.130	0.250	-0.200	0.120	0.440	0.460	0.290	-0.280	0.120	0.220
EV 513	1981	0.080	-0.020	0.080	0.210	-0.260	0.100	0.320	0.260	0.190	-0.230	0.010	0.170
EVA10200	1982	-0.033	-0.018	0.158	0.057	0.071	0.068	0.311	0.341	0.368	0.032	-0.335	-0.348
EVB10170	1982	-0.076	-0.050	0.148	0.001	-0.003	-0.050	0.368	0.371	0.343	-0.062	-0.393	-0.448
EVB10070	1982	-0.084	-0.057	0.143	-0.020	-0.011	-0.044	0.369	0.369	0.330	-0.077	-0.408	-0.491
EVF10005	1982	-0.069	-0.047	0.141	-0.026	0.008	-0.011	0.388	0.394	0.336	-0.073	-0.378	-0.466
EVA10340	1982	-0.034	-0.017	0.162	0.090	0.103	-0.007	0.358	0.362	0.390	-0.004	-0.334	-0.330
EVA10240	1982	-0.047	-0.027	0.159	0.073	0.083	-0.019	0.354	0.354	0.377	-0.018	-0.356	-0.369
EVB10040	1982	-0.079	-0.053	0.143	-0.022	-0.004	-0.032	0.376	0.378	0.332	-0.075	-0.397	-0.482
EVB10270	1982	-0.070	-0.045	0.153	0.032	0.031	-0.045	0.354	0.352	0.353	-0.047	-0.391	-0.435
EVQAD412	1982	-0.010	0.000	0.170	0.170	0.280	0.080	0.320	0.290	0.410	0.030	-0.330	-0.360
EVQAD413	1982	-0.130	-0.090	0.150	0.000	-0.070	-0.150	0.310	0.290	0.310	-0.090	-0.500	-0.570

EVQAD512	1982	0.010	0.020	0.170	0.100	0.030	-0.030	0.420	0.480	0.440	0.040	-0.220	-0.080
EV 513	1982	-0.060	-0.040	0.140	-0.030	0.020	0.010	0.400	0.410	0.340	-0.070	-0.360	-0.450
EVA10200	1983	0.067	-0.032	0.121	0.186	-0.057	0.143	0.294	0.345	0.375	0.158	-0.077	-0.145
EVB10170	1983	0.066	-0.166	0.114	0.248	-0.103	0.037	0.328	0.285	0.342	0.146	-0.131	-0.237
EVB10070	1983	0.056	-0.196	0.117	0.246	-0.113	0.036	0.325	0.277	0.333	0.146	-0.156	-0.266
EVF10005	1983	0.065	-0.223	0.119	0.279	-0.129	0.051	0.383	0.254	0.331	0.155	-0.165	-0.275
EVA10340	1983	0.093	-0.039	0.105	0.264	-0.076	0.081	0.386	0.312	0.377	0.132	-0.036	-0.150
EVA10240	1983	0.083	-0.057	0.106	0.251	-0.078	0.072	0.360	0.313	0.370	0.131	-0.054	-0.169
EVB10040	1983	0.059	-0.206	0.117	0.258	-0.119	0.041	0.346	0.269	0.333	0.149	-0.159	-0.269
EVB10270	1983	0.067	-0.112	0.110	0.236	-0.088	0.049	0.321	0.305	0.354	0.135	-0.099	-0.211
EVQAD412	1983	0.080	0.110	0.100	0.240	-0.050	0.160	0.420	0.360	0.410	0.090	0.040	-0.120
EVQAD413	1983	0.030	-0.110	0.110	0.140	-0.060	-0.010	0.140	0.350	0.340	0.120	-0.130	-0.240
EVQAD512	1983	0.160	-0.090	0.100	0.360	-0.090	0.050	0.490	0.260	0.380	0.180	-0.010	-0.070
EV 513	1983	0.070	-0.240	0.120	0.300	-0.140	0.060	0.420	0.240	0.330	0.160	-0.170	-0.280
EVA10200	1984	-0.005	-0.045	-0.010	0.207	0.062	0.397	0.223	0.327	0.193	-0.424	-0.068	-0.034
EVB10170	1984	-0.022	-0.170	-0.056	0.281	0.111	0.374	0.253	0.280	0.145	-0.660	-0.163	-0.049
EVB10070	1984	-0.020	-0.197	-0.048	0.285	0.115	0.373	0.238	0.262	0.125	-0.707	-0.196	-0.060
EVF10005	1984	-0.014	-0.193	0.006	0.331	0.173	0.377	0.294	0.292	0.165	-0.684	-0.205	-0.048
EVA10340	1984	-0.027	-0.026	-0.019	0.289	0.131	0.395	0.327	0.372	0.224	-0.484	-0.011	-0.023

EVA10240	1984	-0.028	-0.055	-0.037	0.276	0.112	0.391	0.294	0.345	0.195	-0.531	-0.040	-0.035
EVB10040	1984	-0.018	-0.195	-0.029	0.302	0.136	0.375	0.258	0.273	0.140	-0.699	-0.199	-0.056
EVB10270	1984	-0.027	-0.123	-0.064	0.263	0.091	0.381	0.247	0.295	0.147	-0.622	-0.110	-0.051
EVQAD412	1984	-0.040	0.130	0.040	0.270	0.120	0.430	0.320	0.430	0.230	-0.410	0.140	-0.050
EVQAD413	1984	-0.040	-0.210	-0.220	0.140	-0.070	0.360	0.060	0.170	0.000	-0.780	-0.170	-0.100
EVQAD512	1984	-0.010	-0.030	0.010	0.380	0.240	0.380	0.510	0.460	0.380	-0.300	-0.010	0.070
EV 513	1984	-0.010	-0.190	0.040	0.360	0.210	0.380	0.330	0.310	0.190	-0.670	-0.210	-0.040
EVA10200	1985	0.016	-0.059	0.049	0.053	0.126	0.297	0.264	0.532	0.288	-0.113	-0.221	-0.031
EVB10170	1985	-0.030	-0.100	0.041	0.085	0.222	0.307	0.234	0.562	0.236	-0.317	-0.337	-0.067
EVB10070	1985	-0.043	-0.109	0.045	0.086	0.222	0.315	0.214	0.556	0.230	-0.345	-0.347	-0.060
EVF10005	1985	-0.047	-0.128	0.085	0.119	0.258	0.373	0.205	0.571	0.242	-0.391	-0.343	-0.048
EVA10340	1985	0.018	-0.093	0.053	0.091	0.204	0.314	0.310	0.592	0.279	-0.222	-0.245	-0.066
EVA10240	1985	0.008	-0.092	0.041	0.080	0.194	0.298	0.296	0.581	0.268	-0.230	-0.260	-0.067
EVB10040	1985	-0.045	-0.116	0.060	0.098	0.235	0.336	0.211	0.561	0.234	-0.362	-0.345	-0.056
EVB10270	1985	-0.014	-0.093	0.028	0.070	0.194	0.284	0.260	0.564	0.245	-0.267	-0.303	-0.069
EVQAD412	1985	0.050	-0.110	0.050	0.060	0.110	0.300	0.370	0.600	0.320	-0.110	-0.100	-0.040
EVQAD413	1985	-0.030	-0.050	-0.080	-0.020	0.110	0.130	0.240	0.510	0.190	-0.200	-0.360	-0.100
EVQAD512	1985	0.040	-0.080	0.120	0.180	0.350	0.410	0.330	0.640	0.300	-0.290	-0.310	-0.090
EV 513	1985	-0.050	-0.140	0.110	0.140	0.280	0.410	0.200	0.580	0.250	-0.420	-0.340	-0.040

EVA10200	1986	0.172	0.043	0.230	-0.076	0.012	0.055	0.403	0.429	0.130	-0.025	-0.234	-0.096
EVB10170	1986	0.194	0.058	0.280	-0.115	-0.054	-0.132	0.480	0.370	-0.015	-0.138	-0.364	-0.208
EVB10070	1986	0.190	0.063	0.285	-0.098	-0.056	-0.195	0.479	0.351	-0.028	-0.156	-0.393	-0.223
EVF10005	1986	0.184	0.061	0.325	-0.056	-0.071	-0.259	0.504	0.332	0.020	-0.177	-0.391	-0.227
EVA10340	1986	0.195	0.023	0.282	-0.109	-0.014	0.025	0.486	0.446	0.122	-0.097	-0.218	-0.123
EVA10240	1986	0.195	0.030	0.271	-0.115	-0.014	0.002	0.477	0.436	0.087	-0.102	-0.247	-0.138
EVB10040	1986	0.188	0.063	0.300	-0.083	-0.061	-0.218	0.488	0.344	-0.011	-0.164	-0.393	-0.225
EVB10270	1986	0.195	0.047	0.263	-0.124	-0.029	-0.065	0.469	0.403	0.013	-0.119	-0.317	-0.177
EVQAD412	1986	0.180	-0.020	0.260	-0.050	0.090	0.090	0.460	0.530	0.290	-0.080	-0.070	-0.020
EVQAD413	1986	0.210	0.070	0.160	-0.230	-0.010	0.010	0.400	0.410	-0.180	-0.090	-0.400	-0.210
EVQAD512	1986	0.210	0.030	0.360	-0.140	-0.120	0.100	0.560	0.420	0.140	-0.080	-0.210	-0.150
EV 513	1986	0.180	0.060	0.350	-0.030	-0.080	-0.300	0.520	0.320	0.050	-0.190	-0.390	-0.230
EVA10200	1987	0.030	-0.120	0.244	0.312	0.034	0.120	0.231	0.442	0.181	0.112	-0.357	-0.220
EVB10170	1987	0.027	-0.283	0.362	0.393	0.066	0.045	0.228	0.434	0.133	0.065	-0.538	-0.352
EVB10070	1987	0.026	-0.316	0.389	0.390	0.074	0.038	0.213	0.417	0.127	0.053	-0.591	-0.377
EVF10005	1987	0.047	-0.337	0.408	0.402	0.065	0.008	0.229	0.413	0.129	0.076	-0.572	-0.367
EVA10340	1987	0.038	-0.134	0.237	0.402	0.015	0.029	0.289	0.482	0.138	0.115	-0.305	-0.240
EVA10240	1987	0.030	-0.158	0.256	0.395	0.027	0.037	0.271	0.471	0.134	0.097	-0.359	-0.266
EVB10040	1987	0.034	-0.324	0.396	0.394	0.071	0.027	0.219	0.415	0.127	0.061	-0.584	-0.373

EVB10270	1987	0.020	-0.225	0.312	0.388	0.052	0.049	0.237	0.447	0.130	0.068	-0.475	-0.322
EVQAD412	1987	0.030	0.030	0.090	0.380	-0.040	-0.010	0.310	0.490	0.110	0.120	-0.120	-0.150
EVQAD413	1987	-0.040	-0.250	0.330	0.350	0.100	0.130	0.160	0.430	0.120	-0.020	-0.650	-0.410
EVQAD512	1987	0.090	-0.170	0.280	0.460	0.010	0.030	0.370	0.540	0.190	0.210	-0.200	-0.190
EV 513	1987	0.060	-0.350	0.420	0.410	0.060	-0.010	0.240	0.410	0.130	0.090	-0.560	-0.360
EVA10200	1988	0.147	0.035	0.044	0.191	0.328	0.446	0.157	0.233	0.305	-0.009	-0.335	-0.085
EVB10170	1988	0.197	0.029	0.031	0.247	0.424	0.445	0.240	0.203	0.312	-0.075	-0.353	-0.172
EVB10070	1988	0.199	0.020	0.027	0.249	0.433	0.446	0.252	0.166	0.323	-0.087	-0.352	-0.190
EVF10005	1988	0.218	0.020	0.029	0.268	0.449	0.455	0.306	0.193	0.339	-0.083	-0.277	-0.190
EVA10340	1988	0.181	0.047	0.028	0.243	0.407	0.457	0.191	0.305	0.274	-0.055	-0.314	-0.094
EVA10240	1988	0.177	0.041	0.025	0.238	0.407	0.453	0.184	0.269	0.278	-0.064	-0.342	-0.111
EVB10040	1988	0.206	0.020	0.027	0.256	0.439	0.449	0.271	0.176	0.329	-0.085	-0.325	-0.190
EVB10270	1988	0.181	0.032	0.026	0.236	0.413	0.447	0.195	0.211	0.293	-0.076	-0.376	-0.148
EVQAD412	1988	0.130	0.030	-0.010	0.220	0.400	0.480	0.070	0.270	0.230	-0.090	-0.330	-0.030
EVQAD413	1988	0.140	0.020	0.020	0.190	0.380	0.420	0.080	0.080	0.270	-0.100	-0.590	-0.190
EVQAD512	1988	0.250	0.100	0.080	0.290	0.410	0.450	0.350	0.540	0.300	0.030	-0.150	-0.070
EV 513	1988	0.230	0.020	0.030	0.280	0.460	0.460	0.340	0.210	0.350	-0.080	-0.230	-0.190
EVA10200	1989	-0.064	-0.007	-0.002	0.230	-0.092	0.053	0.048	0.274	0.284	0.217	0.139	0.109
EVB10170	1989	-0.137	-0.096	-0.119	0.303	-0.087	-0.250	0.057	0.233	0.274	0.175	0.167	0.087

EVB10070	1989	-0.163	-0.110	-0.153	0.309	-0.064	-0.325	0.042	0.216	0.273	0.167	0.154	0.070
EVF10005	1989	-0.186	-0.104	-0.163	0.346	-0.031	-0.371	0.084	0.249	0.283	0.169	0.145	0.058
EVA10340	1989	-0.076	-0.002	0.010	0.305	-0.135	0.052	0.094	0.313	0.267	0.212	0.213	0.136
EVA10240	1989	-0.086	-0.020	-0.015	0.295	-0.131	0.001	0.070	0.286	0.264	0.204	0.205	0.127
EVB10040	1989	-0.171	-0.108	-0.157	0.322	-0.052	-0.342	0.057	0.228	0.277	0.167	0.151	0.066
EVB10270	1989	-0.113	-0.065	-0.076	0.287	-0.113	-0.135	0.042	0.240	0.264	0.185	0.184	0.105
EVQAD412	1989	-0.060	0.120	0.110	0.290	-0.150	0.340	0.030	0.340	0.230	0.240	0.250	0.160
EVQAD413	1989	-0.090	-0.130	-0.120	0.190	-0.170	-0.180	-0.090	0.110	0.240	0.160	0.180	0.110
EVQAD512	1989	-0.030	-0.030	0.050	0.370	-0.150	0.040	0.290	0.430	0.320	0.230	0.220	0.160
EV 513	1989	-0.200	-0.100	-0.170	0.370	-0.010	-0.400	0.110	0.270	0.290	0.170	0.140	0.050
EVA10200	1990	-0.218	0.016	-0.122	0.090	-0.104	0.334	0.170	0.371	0.109	-0.042	-0.175	-0.100
EVB10170	1990	-0.383	-0.015	-0.146	0.156	-0.137	0.326	0.187	0.355	0.059	-0.146	-0.206	-0.123
EVB10070	1990	-0.393	-0.018	-0.129	0.159	-0.144	0.323	0.173	0.337	0.056	-0.165	-0.227	-0.121
EVF10005	1990	-0.409	0.018	-0.068	0.196	-0.123	0.346	0.183	0.321	0.065	-0.125	-0.229	-0.084
EVA10340	1990	-0.311	0.041	-0.167	0.140	-0.097	0.346	0.210	0.383	0.051	-0.049	-0.154	-0.109
EVA10240	1990	-0.318	0.023	-0.176	0.131	-0.111	0.335	0.198	0.377	0.048	-0.080	-0.168	-0.121
EVB10040	1990	-0.399	-0.005	-0.107	0.172	-0.137	0.331	0.177	0.331	0.059	-0.150	-0.227	-0.108
EVB10270	1990	-0.347	-0.010	-0.177	0.130	-0.135	0.320	0.183	0.365	0.049	-0.135	-0.194	-0.136
EVQAD412	1990	-0.180	0.100	-0.190	0.070	-0.080	0.340	0.160	0.360	0.000	0.000	-0.160	-0.120

EVQAD413	1990	-0.340	-0.130	-0.320	0.040	-0.210	0.250	0.140	0.390	0.030	-0.290	-0.220	-0.240
EVQAD512	1990	-0.410	0.080	-0.100	0.260	-0.040	0.410	0.330	0.440	0.120	0.070	-0.070	-0.030
EV 513	1990	-0.420	0.040	-0.030	0.220	-0.110	0.360	0.190	0.310	0.070	-0.100	-0.230	-0.060
EVA10200	1991	0.002	-0.017	0.162	-0.276	-0.009	0.294	0.264	0.228	0.193	-0.010	-0.083	0.009
EVB10170	1991	-0.067	-0.042	0.159	-0.465	0.001	0.174	0.278	0.129	0.114	-0.070	-0.122	-0.189
EVB10070	1991	-0.077	-0.053	0.146	-0.540	-0.033	0.154	0.250	0.100	0.099	-0.059	-0.147	-0.219
EVF10005	1991	-0.061	-0.051	0.155	-0.552	-0.043	0.133	0.262	0.100	0.118	0.020	-0.124	-0.256
EVA10340	1991	0.009	-0.014	0.200	-0.215	0.058	0.271	0.359	0.238	0.186	-0.032	-0.007	-0.015
EVA10240	1991	-0.009	-0.023	0.187	-0.270	0.040	0.259	0.334	0.214	0.165	-0.057	-0.038	-0.034
EVB10040	1991	-0.071	-0.053	0.149	-0.544	-0.037	0.147	0.254	0.100	0.106	-0.031	-0.139	-0.232
EVB10270	1991	-0.048	-0.038	0.165	-0.391	0.011	0.217	0.290	0.160	0.127	-0.089	-0.098	-0.108
EVQAD412	1991	0.100	-0.020	0.200	-0.090	-0.010	0.400	0.350	0.310	0.230	0.010	0.070	0.260
EVQAD413	1991	-0.130	-0.060	0.120	-0.500	0.000	0.220	0.210	0.100	0.040	-0.310	-0.220	-0.100
EVQAD512	1991	0.010	0.040	0.270	-0.030	0.230	0.210	0.510	0.300	0.250	0.050	0.080	-0.190
EV 513	1991	-0.050	-0.050	0.160	-0.560	-0.050	0.120	0.270	0.100	0.130	0.070	-0.110	-0.280
EVA10200	1992	0.048	0.020	0.124	0.114	0.069	0.043	0.098	0.375	0.026	0.182	-0.178	-0.072
EVB10170	1992	-0.075	-0.011	0.107	0.154	0.051	-0.050	0.242	0.346	-0.061	0.048	-0.207	-0.130
EVB10070	1992	-0.099	-0.017	0.093	0.152	0.037	-0.064	0.267	0.337	-0.079	0.018	-0.227	-0.147
EVF10005	1992	-0.124	-0.013	0.116	0.188	0.033	-0.031	0.367	0.333	-0.018	-0.012	-0.211	-0.143

cyp03_pit129.EVA

EVA10340	1992	0.045	0.021	0.170	0.176	0.106	0.015	0.146	0.378	0.031	0.173	-0.139	-0.072
EVA10240	1992	0.030	0.013	0.149	0.161	0.095	-0.009	0.136	0.372	-0.006	0.155	-0.160	-0.087
EVB10040	1992	-0.108	-0.015	0.101	0.165	0.035	-0.052	0.303	0.335	-0.057	0.007	-0.221	-0.145
EVB10270	1992	-0.022	-0.003	0.114	0.144	0.069	-0.047	0.160	0.357	-0.063	0.101	-0.198	-0.116
EVQAD412	1992	0.210	0.050	0.190	0.160	0.150	0.030	-0.060	0.400	0.050	0.310	-0.130	-0.050
EVQAD413	1992	-0.020	-0.030	0.020	0.040	0.050	-0.170	-0.050	0.350	-0.270	0.110	-0.280	-0.160
EVQAD512	1992	-0.040	0.030	0.260	0.270	0.120	0.130	0.410	0.390	0.210	0.130	-0.030	-0.010
EV 513	1992	-0.140	-0.010	0.130	0.210	0.030	-0.010	0.430	0.330	0.020	-0.030	-0.200	-0.140
EVA10200	1993	0.003	0.036	0.042	0.037	0.046	0.163	0.594	0.387	0.253	-0.157	-0.054	0.059
EVB10170	1993	-0.046	-0.035	-0.009	0.031	0.062	-0.082	0.646	0.360	0.225	-0.265	-0.074	0.027
EVB10070	1993	-0.064	-0.041	-0.024	0.029	0.039	-0.157	0.629	0.312	0.213	-0.269	-0.103	0.015
EVF10005	1993	-0.043	-0.004	0.003	0.066	0.070	-0.257	0.654	0.342	0.236	-0.184	-0.101	0.055
EVA10340	1993	0.037	0.065	0.071	0.074	0.142	0.139	0.750	0.520	0.267	-0.176	0.020	0.114
EVA10240	1993	0.014	0.040	0.047	0.057	0.113	0.114	0.724	0.472	0.250	-0.215	-0.004	0.087
EVB10040	1993	-0.057	-0.028	-0.014	0.042	0.050	-0.193	0.638	0.323	0.221	-0.239	-0.103	0.030
EVB10270	1993	-0.031	-0.013	0.003	0.029	0.067	0.026	0.669	0.387	0.224	-0.274	-0.051	0.038
EVQAD412	1993	0.090	0.210	0.120	0.110	0.140	0.320	0.850	0.550	0.250	-0.120	0.050	0.190
EVQAD413	1993	-0.130	-0.160	-0.110	-0.090	-0.060	0.160	0.550	0.220	0.140	-0.540	-0.110	-0.110
EVQAD512	1993	0.110	0.050	0.150	0.130	0.300	0.100	0.790	0.750	0.380	-0.030	0.120	0.180

cyp03_pit129.EVA

EV 513	1993	-0.030	0.020	0.020	0.090	0.090	-0.320	0.670	0.360	0.250	-0.130	-0.100	0.080
EVA10200	1994	-0.051	-0.029	0.150	0.110	0.016	0.318	0.123	0.325	0.376	-0.172	0.003	-0.104
EVB10170	1994	-0.122	-0.127	0.097	0.168	-0.090	0.251	0.119	0.249	0.378	-0.453	0.006	-0.239
EVB10070	1994	-0.147	-0.153	0.093	0.160	-0.112	0.230	0.099	0.218	0.373	-0.483	0.011	-0.267
EVF10005	1994	-0.131	-0.169	0.116	0.160	-0.142	0.242	0.136	0.188	0.377	-0.506	0.078	-0.269
EVA10340	1994	-0.019	-0.026	0.171	0.152	0.018	0.347	0.192	0.335	0.383	-0.279	0.077	-0.108
EVA10240	1994	-0.046	-0.043	0.154	0.150	0.006	0.323	0.163	0.322	0.379	-0.303	0.051	-0.133
EVB10040	1994	-0.141	-0.159	0.101	0.160	-0.123	0.234	0.112	0.207	0.375	-0.491	0.035	-0.267
EVB10270	1994	-0.100	-0.088	0.116	0.155	-0.039	0.274	0.119	0.284	0.375	-0.380	0.006	-0.195
EVQAD412	1994	0.040	0.070	0.280	0.060	0.170	0.420	0.180	0.380	0.360	-0.030	0.180	0.030
EVQAD413	1994	-0.200	-0.100	0.020	0.160	-0.020	0.190	-0.020	0.310	0.360	-0.410	-0.200	-0.260
EVQAD512	1994	0.070	-0.030	0.150	0.260	-0.070	0.400	0.360	0.370	0.430	-0.400	0.110	-0.110
EV 513	1994	-0.120	-0.180	0.130	0.160	-0.160	0.250	0.160	0.170	0.380	-0.520	0.120	-0.270
EVA10200	1995	0.150	0.055	0.130	-0.034	0.033	0.294	0.278	0.425	0.102	0.281	0.099	-0.051
EVB10170	1995	0.209	0.086	0.068	-0.103	0.033	0.283	0.289	0.397	0.062	0.261	0.141	-0.135
EVB10070	1995	0.216	0.096	0.057	-0.127	0.048	0.289	0.273	0.390	0.056	0.243	0.129	-0.175
EVF10005	1995	0.243	0.117	0.059	-0.111	0.104	0.326	0.277	0.396	0.077	0.259	0.148	-0.215
EVA10340	1995	0.183	0.054	0.140	0.009	0.057	0.289	0.337	0.444	0.063	0.333	0.191	-0.040
EVA10240	1995	0.180	0.055	0.126	-0.019	0.043	0.279	0.324	0.434	0.054	0.312	0.175	-0.056

EVB10040	1995	0.226	0.104	0.057	-0.121	0.068	0.302	0.275	0.392	0.064	0.249	0.136	-0.190
EVB10270	1995	0.187	0.066	0.092	-0.076	0.023	0.269	0.299	0.410	0.047	0.273	0.146	-0.096
EVQAD412	1995	0.130	0.010	0.230	0.090	0.130	0.290	0.340	0.500	0.000	0.360	0.210	-0.020
EVQAD413	1995	0.130	0.030	0.050	-0.180	-0.130	0.170	0.260	0.370	-0.010	0.190	0.070	-0.050
EVQAD512	1995	0.250	0.090	0.120	0.080	0.050	0.340	0.410	0.440	0.180	0.420	0.260	0.030
EV 513	1995	0.260	0.130	0.060	-0.100	0.140	0.350	0.280	0.400	0.090	0.270	0.160	-0.240
EVA10200	1996	0.052	0.219	0.124	0.132	0.132	0.096	-0.031	0.064	0.001	0.098	-0.105	-0.007
EVB10170	1996	0.050	0.205	0.134	0.138	0.220	0.011	0.016	-0.035	-0.147	0.023	-0.165	-0.024
EVB10070	1996	0.040	0.190	0.123	0.130	0.231	-0.015	0.001	-0.041	-0.196	0.013	-0.179	-0.024
EVF10005	1996	0.040	0.202	0.146	0.142	0.304	0.031	0.062	-0.022	-0.217	0.036	-0.204	-0.015
EVA10340	1996	0.067	0.296	0.167	0.182	0.222	0.122	0.025	0.002	-0.017	0.089	-0.115	-0.022
EVA10240	1996	0.060	0.275	0.151	0.169	0.203	0.084	-0.002	-0.010	-0.046	0.070	-0.118	-0.025
EVB10040	1996	0.040	0.194	0.131	0.134	0.257	0.002	0.023	-0.034	-0.204	0.021	-0.188	-0.021
EVB10270	1996	0.051	0.230	0.129	0.146	0.188	0.020	-0.022	-0.032	-0.108	0.034	-0.137	-0.028
EVQAD412	1996	0.040	0.390	0.140	0.210	0.190	0.150	-0.130	0.030	0.000	0.140	-0.050	-0.030
EVQAD413	1996	0.040	0.150	0.050	0.090	0.000	-0.160	-0.190	-0.100	-0.130	-0.060	-0.100	-0.050
EVQAD512	1996	0.130	0.310	0.280	0.220	0.350	0.300	0.330	0.040	0.130	0.140	-0.160	0.000
EV 513	1996	0.040	0.210	0.160	0.150	0.350	0.060	0.100	-0.010	-0.230	0.050	-0.220	-0.010
EVA10200	1997	0.012	-0.110	0.120	-0.120	0.085	0.156	0.334	0.207	0.333	-0.089	-0.117	-0.112

EVB10170	1997	-0.054	-0.203	0.083	-0.263	0.161	0.077	0.344	0.140	0.277	-0.217	-0.143	-0.203
EVB10070	1997	-0.067	-0.210	0.062	-0.310	0.159	0.069	0.320	0.126	0.266	-0.247	-0.161	-0.217
EVF10005	1997	-0.069	-0.204	0.092	-0.298	0.190	0.094	0.332	0.135	0.293	-0.237	-0.142	-0.201
EVA10340	1997	0.009	-0.144	0.182	-0.057	0.152	0.130	0.433	0.191	0.360	-0.115	-0.068	-0.119
EVA10240	1997	-0.002	-0.156	0.153	-0.104	0.142	0.113	0.409	0.177	0.338	-0.143	-0.090	-0.140
EVB10040	1997	-0.067	-0.208	0.073	-0.306	0.170	0.078	0.324	0.129	0.276	-0.243	-0.154	-0.211
EVB10270	1997	-0.032	-0.184	0.099	-0.206	0.138	0.083	0.363	0.150	0.293	-0.195	-0.130	-0.183
EVQAD412	1997	0.080	-0.060	0.240	0.100	0.070	0.170	0.470	0.210	0.440	-0.080	-0.030	-0.040
EVQAD413	1997	-0.060	-0.230	-0.030	-0.350	0.060	-0.010	0.280	0.100	0.180	-0.280	-0.220	-0.270
EVQAD512	1997	0.000	-0.170	0.280	0.040	0.290	0.180	0.530	0.250	0.400	0.000	0.010	-0.090
EV 513	1997	-0.070	-0.200	0.110	-0.290	0.210	0.110	0.340	0.140	0.310	-0.230	-0.130	-0.190
EVA10200	1998	-0.119	-0.101	0.198	0.222	0.178	0.467	0.471	0.321	-0.072	-0.058	-0.056	0.008
EVB10170	1998	-0.187	-0.160	0.198	0.282	0.230	0.479	0.529	0.261	-0.281	-0.212	-0.161	-0.053
EVB10070	1998	-0.179	-0.178	0.188	0.276	0.222	0.476	0.515	0.242	-0.324	-0.200	-0.169	-0.073
EVF10005	1998	-0.118	-0.148	0.146	0.285	0.270	0.503	0.561	0.284	-0.309	-0.188	-0.194	-0.096
EVA10340	1998	-0.137	-0.079	0.185	0.289	0.292	0.514	0.619	0.379	-0.097	-0.181	-0.079	0.003
EVA10240	1998	-0.158	-0.105	0.195	0.283	0.266	0.500	0.588	0.344	-0.140	-0.183	-0.083	-0.004
EVB10040	1998	-0.157	-0.167	0.173	0.279	0.239	0.486	0.532	0.257	-0.319	-0.196	-0.178	-0.081
EVB10270	1998	-0.191	-0.150	0.208	0.277	0.227	0.478	0.536	0.280	-0.232	-0.197	-0.115	-0.027

cyp03_pit129.EVA

EVQAD412 0.040	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100
EVQAD413 0.000	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090
EVQAD512 0.010	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240
EV 513 -0.110	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210

cyp03_pit129.FLO

cyp03_pit129.FLO

IN 513	1948	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1948	39837	54683	47268	18644	80804	2587	1317	387	556	538	1879	2191
INB10000	1948	85421	140304	163444	51133	152410	18308	3893	387	556	981	3951	6612
INC10000	1948	29882	63557	70415	21164	55875	5249	1664	114	3	10	1918	3235
IND10000	1948	28684	61008	67592	20315	53634	5039	1597	109	3	9	1841	3105
INE10000	1948	51160	108813	120555	36234	95661	8987	2848	195	6	17	3284	5538
INF10000	1948	245818	461732	523372	160270	448842	48059	12411	1026	834	1487	13517	22719
INQAD412	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1948	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1949	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1949	53230	29211	29964	22062	12371	4506	2639	873	2377	104149	7855	15562
INB10000	1949	53230	79641	71509	48647	32490	9267	9567	2955	6378	147337	47440	30625
INC10000	1949	15790	29611	30349	31147	26382	3474	11109	6217	4319	33309	31430	13587
IND10000	1949	15156	28423	29132	29898	25324	3335	10664	5967	4146	31973	30169	13042
INE10000	1949	27033	50696	51959	53326	45168	5948	19020	10643	7394	57027	53810	23262
INF10000	1949	141843	236198	227144	196580	153638	27600	58619	29262	26715	350976	195930	99641
INQAD412	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1949	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1950	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1950	84084	136888	36163	11532	110724	12673	5932	3612	58208	3290	2395	2978
INB10000	1950	187555	272450	76563	30284	251282	35799	9234	8581	155414	14209	8728	9703
INC10000	1950	86809	92543	27263	17358	91101	20008	5707	6373	31989	6056	5245	5624
IND10000	1950	83328	88832	26169	16662	87448	19205	5478	6118	30707	5813	5034	5398
INE10000	1950	148621	158440	46675	29718	155970	34255	9771	10911	54768	10368	8979	9628
INF10000	1950	624630	772963	222247	114240	735927	132996	36492	38196	357618	45235	33893	36850
INQAD412	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1950	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1951	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1951	16542	57208	12996	8613	8590	5420	5144	199	1147	899	2076	3077
INB10000	1951	33346	116218	58828	40721	35763	14242	7049	199	5204	2240	6586	10674
INC10000	1951	13869	39454	28760	19086	22833	4502	964	127	4610	544	2517	7191
IND10000	1951	13313	37872	27607	18320	21918	4322	925	122	4425	522	2417	6903

cyp03_pit129.FLO

INE10000	1951	23744	67547	49240	32676	39092	7708	1650	218	7893	931	4310	12311
INF10000	1951	104787	329631	202057	136571	144259	39062	14268	803	26149	5485	19808	44561
INQAD412	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1951	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1952	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1952	15269	6229	20312	106196	33309	8586	1038	149	0	61	3848	21941
INB10000	1952	24386	25447	48508	181164	39031	45318	1423	149	0	61	5193	44782
INC10000	1952	10868	15772	22429	47240	23845	16873	459	171	0	0	516	8299
IND10000	1952	10432	15140	21530	45346	22889	16196	441	164	0	0	495	7966
INE10000	1952	18607	27003	38400	80878	40824	28887	786	292	0	0	883	14208
INF10000	1952	79538	100745	161461	456724	153136	134496	3941	904	0	90	9734	99366
INQAD412	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1952	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1953	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1953	12501	16796	13933	19484	92921	939	6803	1210	4340	824	2510	16909
INB10000	1953	36309	37043	50537	37893	259460	3792	14916	3402	7144	824	6125	29045
INC10000	1953	18011	20055	41452	19220	128023	4029	6754	3811	2405	56	2787	15206
IND10000	1953	17288	19251	39790	18449	122890	3868	6483	3658	2308	54	2676	14596
INE10000	1953	30835	34336	70969	32906	219183	6898	11563	6524	4117	96	4772	26033
INF10000	1953	125749	135023	240643	132932	895876	21736	49076	20287	20180	1440	20208	103789
INQAD412	1953	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1953	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1953	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1954	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1954	34592	10249	4346	3930	34988	7503	82	0	0	1301	1479	4320
INB10000	1954	53201	29468	14046	15677	51873	31348	82	0	0	2369	8121	11423
INC10000	1954	22861	18526	9864	11676	27447	11592	149	0	0	14	3651	4731
IND10000	1954	21945	17783	9468	11207	26346	11127	143	0	0	13	3505	4542
INE10000	1954	39140	31718	16887	19989	46990	19847	255	0	0	24	6251	8100
INF10000	1954	170121	117712	60245	69911	186524	92718	717	1	0	3555	26614	35817
INQAD412	1954	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1954	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1954	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1955	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1955	3909	8712	20726	21377	1715	738	57	1593	807	4091	340	1348
INB10000	1955	14380	38210	57838	73577	8259	2614	2164	3703	807	5612	1073	4024
INC10000	1955	8560	24144	48860	42703	9072	2784	1730	5415	2925	1872	554	2559
IND10000	1955	8217	23176	46901	40991	8709	2672	1661	5198	2808	1797	532	2457
INE10000	1955	14656	41336	83651	73111	15533	4766	2962	9271	5008	3205	949	4381
INF10000	1955	55519	153120	281092	279677	48531	15010	10124	27155	12907	15786	3804	16191
INQAD412	1955	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1955	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1955	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1956	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1956	1353	27842	3063	1589	8554	56	0	0	0	0	134	383
INB10000	1956	5974	48491	16298	8375	25107	56	0	0	0	0	362	383
INC10000	1956	4229	25959	10025	5086	21658	323	17	0	0	0	1	19
IND10000	1956	4059	24918	9623	4882	20789	310	17	0	0	0	1	18
INE10000	1956	7240	44444	17163	8707	37079	552	30	0	0	0	1	33
INF10000	1956	25757	175573	64217	32737	123813	1374	69	0	0	0	537	643
INQAD412	1956	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1956	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1956	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1957	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1957	731	3601	20126	94381	52405	43544	966	440	4657	13734	83633	14848
INB10000	1957	1582	12913	25857	187015	152038	134887	11906	1116	6133	42022	221153	60538
INC10000	1957	299	5516	12695	109178	102831	81815	4875	761	740	22053	94139	32666
IND10000	1957	287	5295	12186	104800	98708	78535	4680	730	711	21168	90364	31356
INE10000	1957	512	9443	21735	186918	176053	140073	8346	1302	1267	37755	161171	55926
INF10000	1957	3533	41158	89027	713419	636350	526857	37106	4694	12021	150374	703602	220223
INQAD412	1957	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1957	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1957	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1958	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1958	45440	5670	31795	152128	85637	24521	15670	3599	7617	2544	21997	9779
INB10000	1958	115786	37473	71708	374361	271125	63415	58314	16163	19375	14349	21997	23062
INC10000	1958	58853	26980	28613	71506	151261	17282	20653	2353	6261	7198	4780	8772
IND10000	1958	56493	25898	27466	68638	145196	16589	19825	2259	6010	6909	4588	8421

cyp03_pit129.FLO

INE10000	1958	100760	46191	48988	122422	258968	29587	35359	4028	10719	12323	8184	15019
INF10000	1958	406688	163390	220487	839203	1006168	162859	168828	33292	53686	50017	51627	69190
INQAD412	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1958	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1959	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1959	3592	22580	30981	30696	8110	3717	5523	1692	1389	1301	2868	35067
INB10000	1959	16004	70047	83001	112234	45291	27214	14969	8320	3473	4950	6289	55152
INC10000	1959	8250	28915	33924	58852	39468	24297	6599	3481	979	2168	2996	21731
IND10000	1959	7919	27755	32564	56492	37885	23322	6334	3342	940	2081	2876	20859
INE10000	1959	14124	49503	58080	100758	67571	41597	11298	5960	1676	3711	5129	37204
INF10000	1959	56674	219242	258433	401439	224948	137495	48534	26229	9050	15991	21286	168474
INQAD412	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1959	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1960	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1960	64111	25252	25532	4205	3388	8325	12483	504	5546	5487	5374	70491
INB10000	1960	155989	56577	91723	18213	17439	10582	31757	753	8254	16378	17132	210302
INC10000	1960	61651	30869	52451	10422	7095	4185	2060	187	967	4143	8345	121797
IND10000	1960	59179	29631	50348	10004	6810	4017	1977	180	928	3977	8010	116913
INE10000	1960	105550	52850	89800	17843	12147	7164	3527	321	1655	7093	14287	208524
INF10000	1960	477262	207177	345514	68636	54167	32386	55145	1863	16062	40778	58721	798350
INQAD412	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1960	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1961	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1961	34285	30639	35695	14373	3950	19421	7537	1591	1699	1114	12849	34310
INB10000	1961	84572	91522	116979	61979	19411	44289	34486	2032	3308	4762	19562	107170
INC10000	1961	52864	47946	57301	52215	7961	11581	23998	1878	3648	4119	11233	55312
IND10000	1961	50744	46023	55003	50121	7642	11116	23035	1803	3502	3953	10783	53094
INE10000	1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232	94697
INF10000	1961	336605	327172	402232	300644	60550	111783	147035	10521	19496	23527	73876	379781
INQAD412	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1961	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1962	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1962	33638	25699	28421	22735	12989	4879	2624	292	2931	2007	7460	7101
INB10000	1962	90002	81056	108133	53472	42717	13680	9641	1255	10739	13073	19445	28643
INC10000	1962	41302	39541	53153	26365	27183	4664	2296	384	1527	3264	4084	7723
IND10000	1962	39645	37955	51022	25307	26093	4477	2204	368	1465	3133	3920	7413
INE10000	1962	70711	67696	91002	45138	46538	7985	3931	657	2614	5587	6992	13222
INF10000	1962	298318	278055	372559	184553	171946	38882	23433	3390	21972	32375	45070	73227
INQAD412	1962	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1962	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1962	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1963	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1963	9929	5878	14341	10426	18910	1444	0	0	0	309	0	826
INB10000	1963	23294	13788	33643	24460	44363	3388	0	0	0	726	0	1939
INC10000	1963	8998	6716	12016	11131	35052	1207	337	35	1	0	117	1148
IND10000	1963	7675	5268	12014	14911	23019	1142	106	6	0	0	179	1461
INE10000	1963	15406	11498	20573	19057	60012	2067	577	60	2	0	200	2104
INF10000	1963	70437	47259	97806	80700	205895	9837	1351	139	5	1072	467	7667
INQAD412	1963	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1963	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1963	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1964	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1964	1600	3295	11447	12118	6728	1654	0	2395	2582	1058	1164	2941
INB10000	1964	3753	7729	26854	28429	15783	3881	0	5619	6057	2482	2731	6900
INC10000	1964	1447	3074	8763	6476	5769	401	9	483	834	1022	764	5969
IND10000	1964	1553	3192	7645	6994	2944	317	0	567	855	298	189	1013
INE10000	1964	2477	5262	15003	11088	9878	687	15	827	1428	1750	1308	10219
INF10000	1964	11338	23723	74751	67919	46414	7338	35	10233	12285	7759	7093	34093
INQAD412	1964	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1964	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1964	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1965	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1965	8028	46220	19775	7158	24331	11578	384	415	449	0	154	0
INB10000	1965	18833	108430	46393	16791	57079	27161	900	974	1054	0	361	0
INC10000	1965	12049	32040	23480	14544	22544	21179	1464	9	120	31	38	605
IND10000	1965	5034	25764	15645	7651	23660	12824	528	0	184	0	43	547

cyp03_pit129.FLO

INE10000	1965	20628	54855	40199	24900	38596	36260	2507	16	206	113	66	1083
INF10000	1965	76065	288441	162545	83045	174576	124930	7193	1476	2039	212	686	2492
INQAD412	1965	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1965	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1965	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1966	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1966	1756	6176	4745	138284	103327	4307	125	201	2160	1934	3102	5161
INB10000	1966	4119	14490	11131	324412	242403	10104	293	471	5066	4538	7277	12107
INC10000	1966	1680	4897	3591	159318	113530	2358	257	411	1177	661	1248	2683
IND10000	1966	1664	3313	2482	178898	84637	1087	73	82	525	535	1514	2567
INE10000	1966	2876	8384	6149	272761	194370	4036	440	704	2015	1131	2136	4594
INF10000	1966	12811	41010	30821	1117124	812643	24362	1462	2342	12195	9347	15743	28624
INQAD412	1966	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1966	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1966	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1967	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1967	7672	4362	7059	24275	31206	22852	1364	534	786	122	3355	16435
INB10000	1967	17998	10232	16561	56949	73209	53611	3200	1254	1843	286	7871	38556
INC10000	1967	4850	3918	3993	9023	19814	40356	1750	50	113	27	487	4387
IND10000	1967	4031	3111	3613	11929	17600	40450	604	0	126	0	716	7445
INE10000	1967	8303	6708	6837	15447	33923	69092	2996	85	194	46	782	7829
INF10000	1967	46001	30802	40450	120232	187465	240793	11734	2051	3175	530	13498	74976
INQAD412	1967	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1967	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1967	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1968	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1968	35450	19593	45168	22304	64758	24297	3798	1549	13329	2035	12282	34404
INB10000	1968	72222	38392	92482	54215	152730	54038	22002	4153	19517	7811	19101	76214
INC10000	1968	25170	15828	29421	31752	95207	11218	7478	1402	4239	2646	7058	27399
IND10000	1968	28805	14096	33568	28802	112683	10239	9070	1230	3752	1998	6340	26910
INE10000	1968	43141	27098	50370	54361	163001	19205	12802	2401	7258	4530	12083	46908
INF10000	1968	207527	120085	254399	207224	606840	124725	62438	11750	45799	22131	56473	222276
INQAD412	1968	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1968	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1968	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1969	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1969	9862	71203	68764	34682	64871	2377	608	359	356	395	2048	4942
INB10000	1969	26700	141236	157880	114767	114352	11219	608	683	3271	751	12770	28641
INC10000	1969	15590	46757	66884	75155	35604	6193	177	7	2	6	8176	15521
IND10000	1969	12224	56748	75881	57363	35774	3775	197	0	0	0	5324	15430
INE10000	1969	23641	65009	145506	123210	61156	8136	425	19	32	12	8065	18077
INF10000	1969	97361	373614	546786	462407	311753	37727	1786	1046	4880	1134	42842	91910
INQAD412	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1969	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1970	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1970	8790	17815	55225	41060	6893	3566	673	597	262	1566	1983	1733
INB10000	1970	38886	43529	126894	93678	32796	14829	3576	916	678	1809	8287	9724
INC10000	1970	36824	24865	53935	28189	22029	14220	2233	467	254	898	4520	4697
IND10000	1970	28773	20003	54323	35341	15269	2731	253	0	274	1453	3388	2517
INE10000	1970	46144	30013	78080	37641	43263	5122	3482	336	312	1540	6689	5843
INF10000	1970	179943	145320	382337	235549	144848	50460	13721	2539	1838	6271	28792	29924
INQAD412	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1970	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1971	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1971	2661	7903	6276	1956	1490	294	5324	2912	224	582	4790	47949
INB10000	1971	14069	19441	17139	9723	3632	401	6208	13993	224	2355	5612	71949
INC10000	1971	6085	9057	12879	6476	6450	385	134	4687	436	368	1867	16580
IND10000	1971	2586	5109	6226	3161	1631	54	721	2611	0	225	2571	20267
INE10000	1971	6234	9192	12339	6995	3765	254	767	3209	444	273	2617	20411
INF10000	1971	38969	55657	62549	34250	20448	1537	10498	32324	1630	4425	14908	160873
INQAD412	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1971	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1972	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1972	35778	9851	7109	2513	1692	5897	11293	398	0	2635	12900	22253
INB10000	1972	79469	29439	24340	12145	4433	9308	11293	398	8259	2635	30463	51060
INC10000	1972	32462	16336	10713	7863	6312	695	489	99	506	2189	18942	31893
IND10000	1972	44226	13021	8530	3954	2374	3379	353	0	497	2201	12034	23601

cyp03_pit129.FLO

INE10000	1972	55802	24585	16776	6895	5856	3775	1956	0	520	4521	25702	51367
INF10000	1972	247696	103902	76537	39728	24516	20347	20287	734	13712	13799	110912	198353
INQAD412	1972	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1972	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1972	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1973	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1973	29332	25393	75060	85083	20070	29548	1491	912	3616	17587	64229	43676
INB10000	1973	54925	63968	190340	267839	38236	71666	1491	2412	12342	37605	129727	110506
INC10000	1973	28122	33041	82869	119369	24972	37704	5036	995	9883	25530	43304	72548
IND10000	1973	25124	30975	83482	157256	17182	51858	2498	854	21007	24938	53961	60365
INE10000	1973	38724	58359	114968	244572	53542	95187	6158	1789	33801	53003	70831	135374
INF10000	1973	179822	229436	573228	932962	172407	302074	18732	7672	82735	171501	360115	470229
INQAD412	1973	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1973	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1973	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1974	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1974	50748	16594	6657	71771	9611	34032	870	4421	66183	14013	92424	53192
INB10000	1974	111481	54480	35324	149529	26629	95157	5822	8941	115941	37321	210102	121841
INC10000	1974	49316	33311	21527	62076	16191	78580	1995	1745	34600	15539	79975	50468
IND10000	1974	34550	23741	23682	34158	12847	53806	1111	1161	36449	15068	89661	53394
INE10000	1974	93858	59562	46131	45999	32803	122049	3007	1523	52711	21457	111560	93367
INF10000	1974	376053	217600	152074	380408	111674	436793	15985	18029	300146	109745	593105	392329
INQAD412	1974	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1974	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1974	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1975	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1975	30772	75906	65654	32988	72893	15264	3062	2192	324	619	909	1616
INB10000	1975	74874	206821	147102	79718	168997	44896	9862	5783	324	619	3345	8887
INC10000	1975	33952	89507	57694	26734	73979	23384	6101	1880	728	469	2985	5572
IND10000	1975	37060	73243	46454	36184	52283	21553	5777	1277	504	293	2587	4406
INE10000	1975	59428	132265	70814	55253	106273	34994	10508	2644	912	337	3124	5582
INF10000	1975	248464	632912	406998	238792	515741	152507	39091	15221	2901	2105	13961	29594
INQAD412	1975	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1975	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1975	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1976	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1976	1693	6125	31916	16780	37982	2776	11755	876	528	0	0	3155
INB10000	1976	27181	23721	80819	32874	59042	10218	18765	876	1075	0	0	21205
INC10000	1976	19986	17857	52884	14349	16822	8321	8519	350	1127	1057	2174	16467
IND10000	1976	9280	8290	32233	10547	19425	3527	24944	477	1526	1341	1429	12639
INE10000	1976	21887	19884	55590	20294	26800	9474	37504	2258	2332	2426	3574	25176
INF10000	1976	101972	90764	279532	99703	151606	41367	95673	5146	6695	5143	8488	92809
INQAD412	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1976	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1977	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1977	2891	37018	52131	51556	3156	1143	0	887	0	0	2902	2729
INB10000	1977	15058	92488	104229	113228	19453	6092	0	2879	5182	0	14597	14967
INC10000	1977	15073	48068	49445	62201	8172	3950	238	405	323	66	5940	17501
IND10000	1977	10943	53343	60751	57196	5803	2459	245	5377	5044	963	5174	8589
INE10000	1977	26347	95422	90727	101597	21623	4388	389	7447	6567	1010	6161	12636
INF10000	1977	83401	348474	360911	409089	72725	21309	925	15846	17827	1589	39427	66606
INQAD412	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1977	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1978	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1978	9239	8957	23608	1819	9836	0	0	0	0	0	2969	2050
INB10000	1978	27973	30163	63702	15145	33285	2855	0	0	0	0	3796	7748
INC10000	1978	23372	25607	36204	13555	27025	3713	55	3	2	0	1200	8371
IND10000	1978	15498	16792	33055	7493	12719	1653	93	6	0	0	1956	2806
INE10000	1978	21187	29617	46329	19655	18866	2470	93	19	0	0	1955	4653
INF10000	1978	107109	126093	215948	71406	116920	13347	219	34	3	0	10264	30674
INQAD412	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1978	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1979	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1979	43190	24586	56791	40201	32919	18649	5112	14783	50198	1002	6613	16339
INB10000	1979	81889	47193	133465	145963	91577	25220	18756	46957	78909	6477	22804	51682
INC10000	1979	48112	27427	62739	78532	42553	30433	7507	38296	9022	4428	17077	27851
IND10000	1979	31842	17663	53037	78651	64462	14203	14963	23991	30546	4365	14441	30013

cyp03_pit129.FLO

INE10000	1979	68957	52198	87681	168728	122150	36226	17277	35301	55955	15810	25167	43596
INF10000	1979	293805	187274	419217	580681	378453	135681	64296	178024	212478	39450	96057	181826
INQAD412	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1979	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1980	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1980	53071	29725	17586	45364	39960	3877	0	0	2649	1518	1786	5547
INB10000	1980	126757	77108	59289	108543	75932	17295	0	0	3311	5563	6823	10895
INC10000	1980	55729	42670	30979	48528	35624	8831	692	29	28	916	4269	6494
IND10000	1980	43734	41024	26885	41703	36805	4408	243	0	0	708	1374	2148
INE10000	1980	98383	88464	41292	74496	72221	9671	772	0	0	685	2406	3809
INF10000	1980	414764	307515	194277	341961	271388	52863	2162	43	4931	10579	19933	31304
INQAD412	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1980	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1981	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1981	2689	7604	9699	1530	48644	92577	8942	0	0	26846	9591	1677
INB10000	1981	8939	15943	25752	11344	100836	144608	8942	0	0	37274	16622	7752
INC10000	1981	6541	8667	13465	7289	45600	45539	3305	267	324	10430	8629	7489
IND10000	1981	2317	3696	7684	3697	38040	38572	4016	300	40	4272	5387	5102
INE10000	1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7594	10941
INF10000	1981	28913	45241	74018	39160	282497	364854	27127	1510	1639	76747	48503	38663
INQAD412	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1981	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1982	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1982	7152	13787	14215	17450	49290	28343	4103	0	0	0	8920	102460
INB10000	1982	18892	30960	30526	33162	81879	35067	4659	0	0	0	15955	164549
INC10000	1982	10787	23282	15937	15645	20075	17458	5408	1617	4	0	2430	61906
IND10000	1982	6995	12869	12884	8877	11579	2221	1367	0	0	34	2161	32555
INE10000	1982	10636	24253	21939	14184	21720	5489	3275	313	0	29	2156	57993
INF10000	1982	59532	115915	101010	93020	182631	85672	19702	2851	5	43	30334	420051
INQAD412	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1982	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1983	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1983	7064	30373	49796	12528	7755	4048	0	0	0	573	0	2457
INB10000	1983	26776	89984	93444	35613	31814	10536	6516	0	0	573	0	5349
INC10000	1983	25337	55472	34266	19830	22571	6757	8766	962	0	0	806	10916
IND10000	1983	13857	48749	47837	16999	17207	3710	2039	400	0	0	581	4534
INE10000	1983	29468	79834	75246	32176	25616	11473	4658	431	0	0	583	22561
INF10000	1983	120472	332692	299709	129389	118139	42481	29446	2057	0	847	2051	57336
INQAD412	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1983	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1984	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1984	3287	10858	12612	4737	0	0	0	0	0	35115	15074	28047
INB10000	1984	12186	31370	39305	18416	0	0	0	0	0	42445	28974	49544
INC10000	1984	9421	21788	31020	17651	3112	270	57	94	0	11474	19204	27152
IND10000	1984	4219	13284	19818	10133	1348	180	0	0	0	632	3515	7321
INE10000	1984	8510	33051	37829	21116	4444	1260	250	0	0	6385	10791	18082
INF10000	1984	44474	127307	159712	84443	11157	2259	453	139	0	89051	87081	139961
INQAD412	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1984	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1985	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1985	8613	60107	32881	27370	46746	6476	0	0	0	5558	8448	52840
INB10000	1985	22945	98798	76257	75521	94076	13122	4052	0	0	9893	21956	92542
INC10000	1985	19961	27238	36499	30315	36279	6501	1574	238	0	1046	9702	46966
IND10000	1985	8501	21354	32035	26580	39114	3671	358	0	0	728	9331	39581
INE10000	1985	19212	24535	54980	44182	55250	12252	904	70	0	1673	18435	75263
INF10000	1985	91731	222351	247699	221535	274086	47069	9643	454	0	18625	73972	317156
INQAD412	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1985	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1986	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1986	4625	63607	5058	26658	20923	37037	0	0	414	473	2742	11230
INB10000	1986	16430	98505	6300	40940	48501	50634	0	0	414	473	10545	47419
INC10000	1986	8905	31640	9794	19353	25309	32120	14580	223	430	1804	14799	55621
IND10000	1986	6480	36293	6131	10883	14253	10286	316	0	0	240	3798	22875

cyp03_pit129.FLO

INE10000	1986	13707	57923	12288	24999	24789	28333	2962	3	436	1431	7689	49399
INF10000	1986	57654	277723	41913	125952	145604	164045	25905	333	1890	5476	48780	225110
INQAD412	1986	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1986	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1986	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1987	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1987	11488	35327	123391	4755	0	5018	1314	0	0	0	13493	135750
INB10000	1987	34144	66351	232533	18107	5257	13853	5973	0	0	0	44833	300753
INC10000	1987	29369	38444	65287	10853	4179	4646	2950	238	192	610	26021	132637
IND10000	1987	15153	29692	90735	5059	4282	12599	3407	0	0	310	14745	120709
INE10000	1987	29610	50950	131392	18451	6456	18177	5071	43	0	321	15037	174351
INF10000	1987	137517	229991	633826	70014	23467	54160	20664	415	283	1375	126837	897464
INQAD412	1987	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1987	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1987	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1988	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1988	40466	35480	33607	16300	934	0	0	0	0	37	38739	16240
INB10000	1988	67973	80168	73280	45724	5215	489	746	0	0	3621	38739	46012
INC10000	1988	47277	36247	41830	26642	3324	466	1157	94	0	397	8773	30557
IND10000	1988	33952	34156	43518	19391	1809	430	1015	0	0	0	2913	6295
INE10000	1988	84765	54719	69041	36635	3895	434	1283	0	0	406	6637	10486
INF10000	1988	295366	252717	271938	160964	18362	2051	4705	139	0	6533	79962	128556
INQAD412	1988	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1988	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1988	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1989	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1989	19807	68523	50439	23561	92550	31861	2908	0	0	0	0	689
INB10000	1989	39666	122602	137096	66777	195291	58001	10254	0	0	0	0	1616
INC10000	1989	28656	45684	74638	50854	71542	35279	19627	4792	944	430	1607	3813
IND10000	1989	16591	40480	31901	31506	88387	12112	5583	526	0	0	97	102
INE10000	1989	27768	76079	129853	85067	148213	43689	22416	4776	1053	1039	3025	3667
INF10000	1989	141899	360858	504428	299328	612908	202265	77228	14129	2949	2169	6840	13432
INQAD412	1989	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1989	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1989	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1990	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1990	22820	25971	109708	57230	52990	13392	0	3174	3779	1446	29055	32067
INB10000	1990	53536	60927	257372	134260	124313	31417	0	7445	8865	3393	68163	75229
INC10000	1990	30645	35540	98738	61045	34243	13666	884	1279	1296	5455	23255	32288
IND10000	1990	36797	32309	82854	77498	50708	21903	847	334	2294	4169	34402	39666
INE10000	1990	56095	68600	84906	106808	65003	41936	2753	2017	4217	7055	48479	65890
INF10000	1990	207147	243758	651258	446137	330134	128503	5372	15862	21232	23484	206588	256073
INQAD412	1990	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1990	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1990	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1991	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1991	72764	46565	25841	38421	68597	25991	3177	0	1346	6656	25795	51231
INB10000	1991	170703	109239	60622	90135	160928	60975	7453	0	3158	15615	60515	120188
INC10000	1991	92714	52766	38488	62785	118917	25628	2857	3059	10274	2012	38194	61849
IND10000	1991	78313	47431	28963	49010	67836	18616	1657	661	883	971	12686	46350
INE10000	1991	163660	68336	78526	127224	146576	44928	8264	4882	3530	1311	21789	86523
INF10000	1991	630674	340150	262318	413693	629705	194234	27429	11726	25049	27966	177941	396587
INQAD412	1991	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1991	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1991	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1992	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1992	26432	40166	64358	6937	12747	38511	37693	15331	6776	0	17262	68144
INB10000	1992	62008	94228	150982	16275	29903	90345	88427	35966	15897	0	40497	159863
INC10000	1992	30938	70852	64891	16247	15610	19523	35419	9354	9993	3108	24093	69499
IND10000	1992	24744	40623	57305	10893	7366	20303	26129	4103	5382	2334	24192	69739
INE10000	1992	63027	102423	128086	24818	13262	20303	42286	4530	6255	3410	33261	116701
INF10000	1992	230328	395028	507931	84675	86793	192225	245330	73613	47469	9625	144498	511037
INQAD412	1992	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1992	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1992	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1993	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1993	65685	30669	51779	26262	14410	13668	155	1181	744	37157	8727	15998
INB10000	1993	154096	71949	121472	61610	33805	32064	364	2772	1744	87169	20472	37531
INC10000	1993	66252	27187	52978	26068	13172	17228	2599	1710	473	18918	14840	17438
IND10000	1993	73643	33922	46469	20207	18405	23421	2677	3064	67	25275	9390	10654

cyp03_pit129.FLO

INE10000	1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	21639	15661
INF10000	1993	483274	233388	399517	196845	111821	176598	19599	11926	3509	193964	84101	104301
INQAD412	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1993	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1994	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1994	14521	37547	41106	11205	20128	5360	28275	0	0	19406	65106	76704
INB10000	1994	34066	88084	96434	26288	47219	12573	66332	0	0	45526	152736	179946
INC10000	1994	17832	38992	46845	16024	25159	29823	23390	1794	514	25408	44849	70600
IND10000	1994	10971	36397	35467	8674	17011	0	20721	0	0	13125	40261	72924
INE10000	1994	15823	47449	92236	31296	41942	9828	30129	2012	653	40037	52302	110523
INF10000	1994	100005	257725	347790	108697	168819	77121	176987	5622	1723	163872	369013	533198
INQAD412	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1994	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1995	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1995	72221	8138	24730	49422	46270	5872	2882	71	316	0	0	1399
INB10000	1995	169429	19093	58015	115942	108548	13774	6762	166	740	0	0	3282
INC10000	1995	86675	35166	33980	46460	52865	7381	3830	243	523	329	966	4044
IND10000	1995	54302	20107	16345	51746	39960	8070	3279	655	498	857	596	786
INE10000	1995	110561	57811	46682	84669	61351	12427	4813	608	665	825	1636	4209
INF10000	1995	541463	165495	204787	364854	328958	49592	22748	1501	2848	1704	3843	17034
INQAD412	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1995	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1996	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1996	4795	2678	3259	6685	2478	4493	1137	8848	6956	12454	28555	26864
INB10000	1996	11249	6283	7646	15683	5812	10540	2667	20757	16318	29216	66990	63022
INC10000	1996	6472	4000	6638	10147	4472	7786	1542	5188	11529	21123	24489	40490
IND10000	1996	2428	2416	3330	4140	3759	4164	410	1721	2643	3442	8501	21277
INE10000	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139
INF10000	1996	33922	21287	27852	49708	22230	41186	8462	46250	71112	106468	163947	232805
INQAD412	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1996	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1997	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1997	19718	84766	59257	73556	14927	25331	9426	3203	0	1699	4996	20292
INB10000	1997	46259	198858	139016	172560	35018	59425	22113	7515	0	3986	11721	47604
INC10000	1997	34726	74263	69844	67281	53779	34287	7765	1238	96	1734	7715	21475
IND10000	1997	20358	83597	60259	62467	35476	15273	14738	5202	1005	4075	5063	32643
INE10000	1997	48119	138138	123156	62596	90294	31642	27906	5202	1021	4088	7181	32654
INF10000	1997	190650	607314	490294	446614	264467	185113	85331	20608	1649	14483	39307	150230
INQAD412	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1997	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1998	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1998	60894	39273	29136	10891	361	0	0	0	12114	15658	13922	38400
INB10000	1998	142855	92133	68352	25550	847	0	0	0	28419	36732	32660	90087
INC10000	1998	59944	48938	44590	16678	3608	102	0	0	12752	21081	19833	42941
IND10000	1998	78855	50112	38323	10245	2418	732	0	0	14059	18101	21884	45247
INE10000	1998	141708	78165	69530	21772	4050	906	0	50	13991	43164	39459	70919
INF10000	1998	508739	323750	269460	94510	12558	1490	0	73	81459	149115	135787	301173
INQAD412	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1998	100	100	100	100	100	100	100	100	100	100	100	100

PROJECT MEMORANDUM

TANKERSLEY CREEK STUDY

SledgeLaw

Date: November 30, 2021

Project No.: 11126B.00

Prepared By:	Michael Pinckney P.E. and Tony Smith P.E.
Reviewed By:	David Harkins, Ph.D., P.E.
Subject:	Tankersley Creek Reservoir Analysis Update

Background

A Pre-Application Meeting was held on October 13, 2021 between Sledge Law, Carollo Engineers (Carollo), Luminant staff (via telephone), and the Texas Commission on Environmental Quality's (TCEQ) water rights and availability staff. The subject of this meeting regarded the potential approach for securing a water right for the Northeast Texas Municipal Water District (NETMWD) to authorize diversion and impoundment of surface water in Pond GR20 (previously referred to as Pit G-129) for the purposes of developing supplemental surface water supply storage on Tankersley Creek in the Cypress Creek River Basin.

Previous analyses of the water availability located at Pond GR20 focused solely on the firm water supply availability for the potential ecological benefits providing additional supplemental stream flow during low-flow, drought conditions. During the Pre-Application Meeting, TCEQ staff rightly noted that from the perspective of maximizing potential water supply, the proposed surface water permit could seek to obtain the maximum annual diversion amount greater than the firm yield of the pit, given that NETMWD already has permitted firm water supply from other sources - primarily Lake O' The Pines Reservoir (LOTP). Considering the objective of maximizing potential water supply, it would indeed be beneficial to determine the potential maximum annual amount of surface water available for potential use as a maximum diversion target. A larger diversion capability, while not firm, would allow for greater potential operational flexibility in supplementing flows within Tankersley Creek as well as downstream surface water supplies in LOTP, particularly for varying hydrologic conditions.

TCEQ staff further indicated that a key factor in their consideration of a potential new water right will be the extent of flows contributing to the final pit configuration. Of particular concern was the extent of potential effects from flooding from the creek into the pit.

Thus, after authorization from Sledge Law, Carollo has performed two analyses to address these considerations, namely:

1. Performance of a Water Availability Modeling (WAM) analysis to identify the potential maximum annual diversion amount from the Pond GR20 location; and
2. A compilation and evaluation of the potential contributing watersheds of the proposed finished project area surrounding the Pond GR20 location.

Methods and results of these two analyses are presented herein.

Identification of Streamflow Availability, Maximum Diversion, and Updated Yields

The latest information provided by Luminant indicates a slightly larger contributing watershed area to the final pit configuration. Using this pit configuration with the latest, slightly larger contributing watershed, Carollo expanded upon the WAM modeling initially developed and documented in the Tankersley Creek Reservoir Study Technical Memorandum 1 dated February 2019 to determine available streamflow for a maximum annual diversion amount, as well as updated firm yields for Pond GR20 and potentially supplemental yield for LOTP. The revised drainage area to Pond GR20 is 898 acres (1.4 sq-mi), with a revised storage capacity of 6,810 ac-ft at a water surface elevation (WSE) of 367 ft above msl.

Two WAM Run 3 scenarios were developed to identify the annual volume of streamflow available, and the reliability of such a diversion. Scenario 1 is a modeled WAM Run 3 modified to add the control point for Pond GR20 without a water right diversion - in order to identify the unappropriated flow at the project location. Scenario 2 is a modified WAM Run 3 to model the proposed reservoir and diversion.

Figure 1 presents the annual volume of unappropriated flow at the Pond GR20 control point. It is observed that the maximum annual volume of unappropriated flow is approximately 1,730 ac-ft. A review of monthly unappropriated flows shows that the monthly volume of unappropriated flows ranges from zero to approximately 584 ac-ft, with 72% of all months having zero unappropriated flow, as shown in Figures 2 and 3.

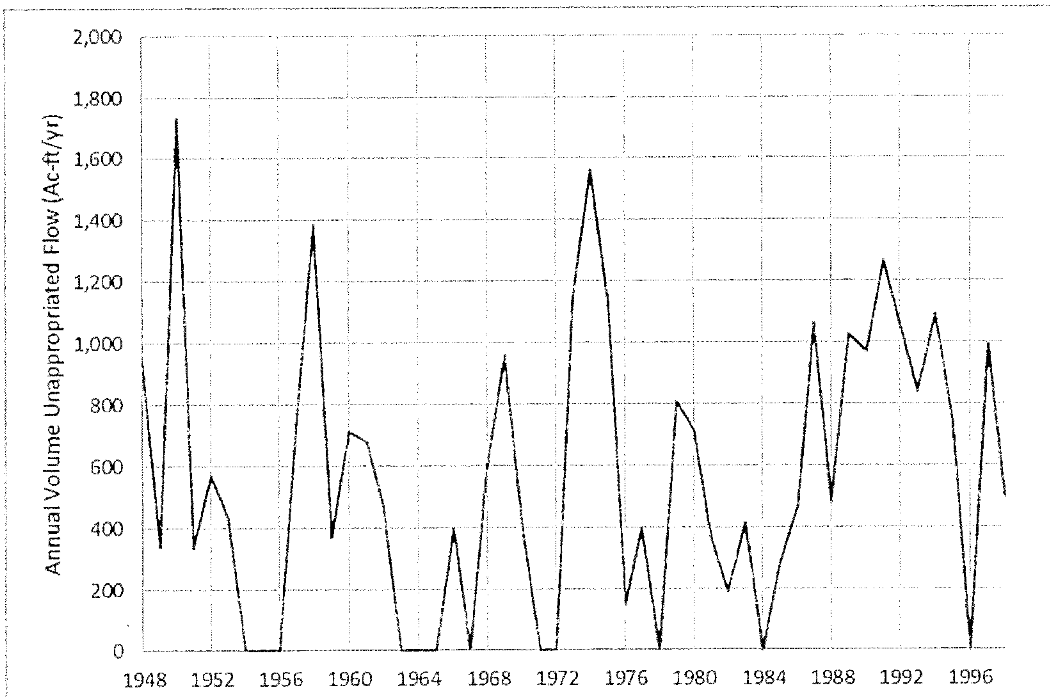

Figure 1: Modeled Annual Unappropriated Flow at Pond GR20 Control Point utilizing WAM Run 3

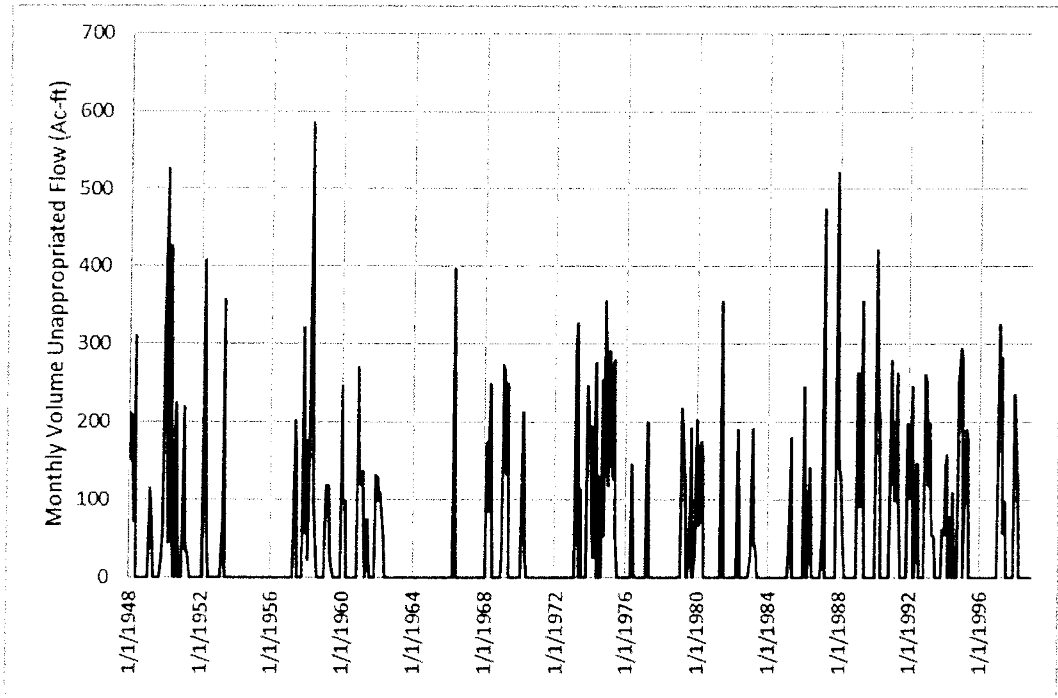

Figure 2: Modeled Monthly Unappropriated Flow at Pond GR20 Control Point utilizing WAM Run 3

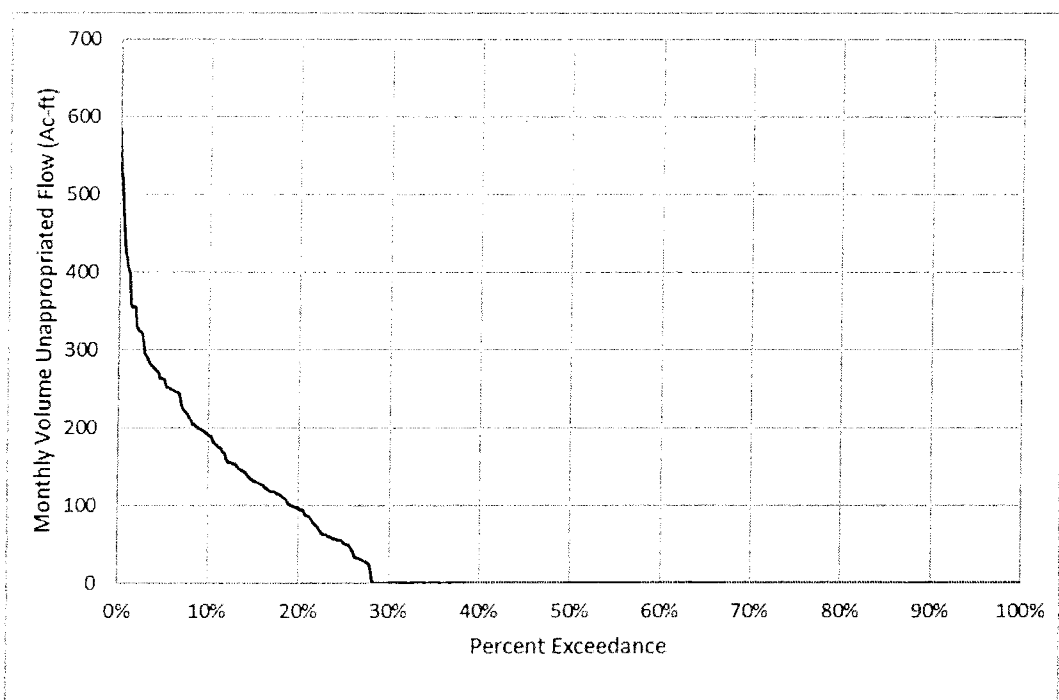

Figure 3: Percent Exceedance of Modeled Monthly Unappropriated Flow at Pond GR20 Control Point utilizing WAM Run 3

To model the proposed diversion and Pond GR20 in the WAM while maximizing the diversion of available unappropriated flows the following analysis has been performed. First, for each month the volume of unappropriated stream flow available for diversion is identified. However, since Pond GR20 refills using unappropriated flow as well, the volume necessary to refill the pond is removed from the potential streamflow diversion. Calculation of the available unappropriated flow while leaving flow available for depletion by Pond GR20 is accomplished by using a dummy water right record (WR) with a water right (WR) Type 8. A Type 8 WR record allows the construction of a water right diversion target for use in subsequent Target Options (TO) record calculations without performing a water diversion or streamflow depletion. The Type 8 WR's diversion target is calculated as the unappropriated flow available at the control point, TO Option 3, and subtraction of the drawdown volume of Pond GR20, TO Option 5. For instances where the drawdown volume exceeds the unappropriated flow volume, the resultant negative number is converted to a zero diversion. The WAM code is as follows:

```
** Calculate Unappropriated flow considering volume needed to refill storage at PIT129
WR585100                20211231    8                                    1040X9PT129    PT129
TO      3
TO      5            SUB                         PIT129
```

The proposed water right diversion is modeled as a WR record with an annual diversion of 540 ac-ft per year with a constant monthly diversion pattern backed by a 6,810 ac-ft reservoir. The annual diversion target is then adjusted to divert the available unappropriated flow calculated by the dummy water right, using a TO Option 13 record to modify the target to be the maximum of the unappropriated flow or the monthly diversion from Pond GR20. A Supplemental Water Right Option (SO) record is thus added to limit the annual streamflow depletion amount to the identified 1,730 ac-ft/yr of available streamflow. The WAM code is as follows:

```
WR585100      540   MONTH20211231   1  1      1.0                    104000PT129    PT129
TO     13             MAX                                    1040X9PT129
SO                                                                  1730
WSPIT129     6810
```

The monthly diversions from Pond GR20 are modeled to be returned to Tankersley Creek as return flow made available to supplement the yield of Lake O' The Pines. Thus a junior priority date refill of Lake O' The Pines has also been added as follows to allow for calculation of the potential gain in supply to Lake O' The Pines:

```
WRB10040        0      IND20211231    1                                        JrFill     4590
WSLKOPNS   251000
```

The proposed Pond GR20 has a modeled firm yield of 540 ac-ft/year. If the water from Pond GR20 is discharged to supplement the yield of Lake O' The Pines, then the modeled firm yield of Lake O' The Pines increases by approximately 540 ac-ft/yr to 179,340 ac-ft/yr. A copy of the Cypress WAM modeling the potential water right is included as Attachment 1.

Figure 4 presents an exceedance plot of the monthly regulated flows for both the without-project condition and with the project in operation continuously throughout the calendar year. Without the proposed project, the modeled regulated flow at Control Point B10150 entering Lake O' The Pines is zero (0) ac-ft per month in approximately 27% of all simulated months in the WAM period of record. With the project in place, the modeled diversion of 540 ac-ft/yr of firm supply backed by storage from GR20, with a streamflow depletion limit of 1,730 ac-ft/yr and the discharge of these flows to Lake O' The Pines continuously throughout the calendar year provides a monthly base flow of over 40 ac-ft per month (see Figure 4). Figures 5 and 6 present, in a time series and frequency context, the increase in monthly storage in Lake O' The Pines as a result of the operation of Pond GR20 and its associated discharges to Lake O' The Pines.

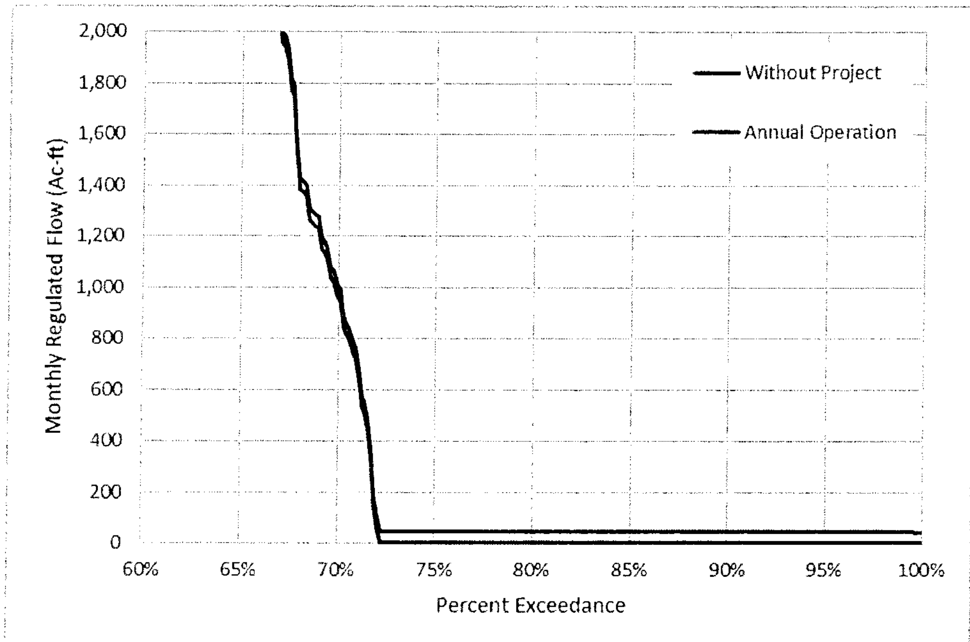

Figure 4: Comparative plot of percent exceedance of modeled monthly regulated flows at Control Point B10150 upstream of Lake O' The Pines for without project and with project (continuous annual operation) conditions utilizing WAM Run 3 (note adjustment of axis to observe difference)

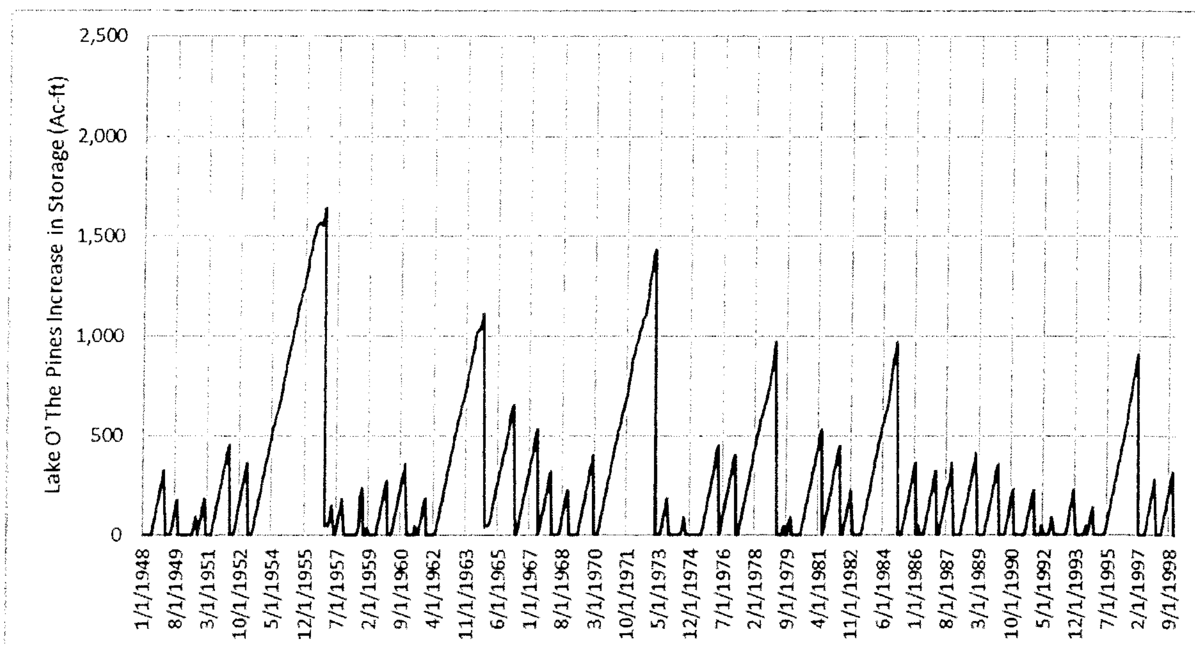

Figure 5: Modeled increase in monthly storage volume at Lake O' The Pines with Pond GR20 operated continuously throughout the calendar year utilizing WAM Run 3

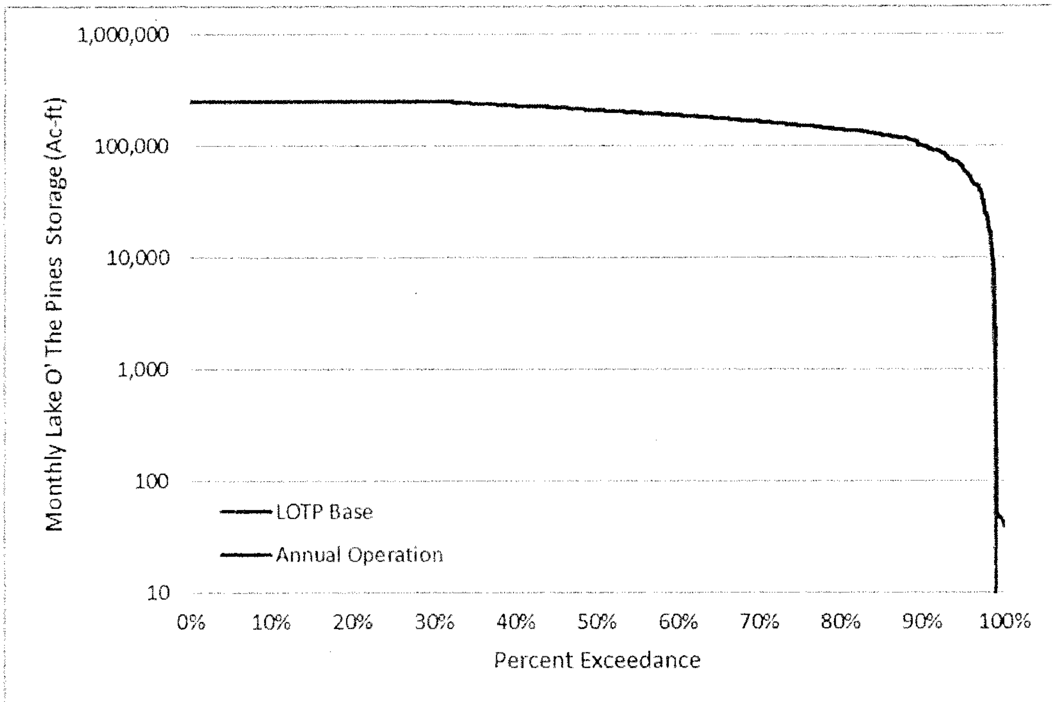

Figure 6: Plot of percent exceedance of modeled monthly storage at Lake O' The Pines over the period of record with proposed project in place utilizing WAM Run 3

Similar to the analysis originally discussed in the Tankersley Creek Reservoir Study Technical Memorandum 1 dated February 2019, the benefits of seasonal operation of Pond GR20 have been evaluated to provide an assessment of the potential increase in base flows if the proposed project were operated in seasonal summer "dry" conditions. As described in the previous analysis, a flow switch was added to the proposed diversion for Pond GR20 which limits releases from the pit to only when regulated flows at the USGS gage on Big Cypress Creek near Pittsburg were below a threshold of 1,200 ac-ft/month (approximately 20 cfs). The WAM code is as follows:

```
WR585100     2079    MONTH20211231   1  1       1.0                       104000PT129    PT129
TO     13             MAX                                           1040X9PT129
SO                    1730
WSPIT129     6810
FS  1  1  A10000     0.0      1.0    1200           1           0   1   1          1
FS  2  1  A10000     0.0      1.0    1200           1           0   2   2          1
FS  3  1  A10000     0.0      1.0    1200           1           0   3   3          1
FS  4  1  A10000     0.0      1.0    1200           1           0   4   4          1
FS  5  1  A10000     0.0      1.0    1200           1           0   5   5          1
FS  6  1  A10000     0.0      1.0    1200           1           0   6   6          1
FS  7  1  A10000     0.0      1.0    1200           1           0   7   7          1
FS  8  1  A10000     0.0      1.0    1200           1           0   8   8          1
FS  9  1  A10000     0.0      1.0    1200           1           0   9   9          1
FS 10  1  A10000     0.0      1.0    1200           1           0  10  10          1
FS 11  1  A10000     0.0      1.0    1200           1           0  11  11          1
FS 12  1  A10000     0.0      1.0    1200           1           0  12  12          1
```

With the seasonal discharge limitation, diversions from GR20, along with a streamflow depletion limit of 1,730 ac-ft/yr, the discharge of flows to Lake O' The Pines seasonally provides a monthly base flow of over 170 ac-ft per month. Once again comparing the regulated flow at Control Point B10150 entering Lake O' the Pines, it is observed in Figure 7 that of the 27% of months where regulated flow was zero, for 20% of those months the regulated flow has increased by approximately 170 ac-ft/month. Said another way, if the proposed project were to be operated during the summer dry period rather than continuously throughout the year, the "dry period" flows would increase by approximately 170 ac-ft/month in approximately 20% of the months over the modeled period of record.

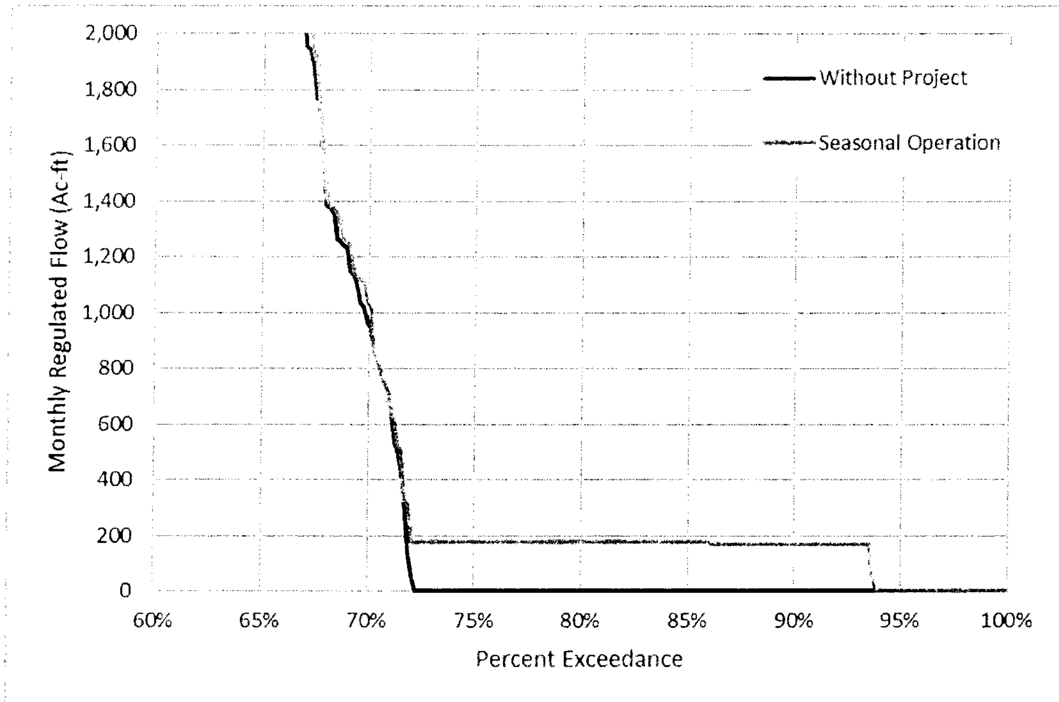

Figure 7: Percent Exceedance of Modeled Monthly Regulated Flow at Control Point B10150 upstream of Lake O' The Pines utilizing WAM Run 3

These increases to streamflow would further result in increases to the magnitude of storage available during the summer "dry" period. While the increases would occur less frequently (due to operation being limited to summer dry periods), the magnitude of water available to be stored downstream in Lake O' the Pines increases, as shown in Figures 8 and 9. These plots present the time series and frequency of exceedance, respectively, of the increases in the modeled monthly storage in Lake O' The Pines as a result of the operation of Pond GR20 and its associated downstream discharges.

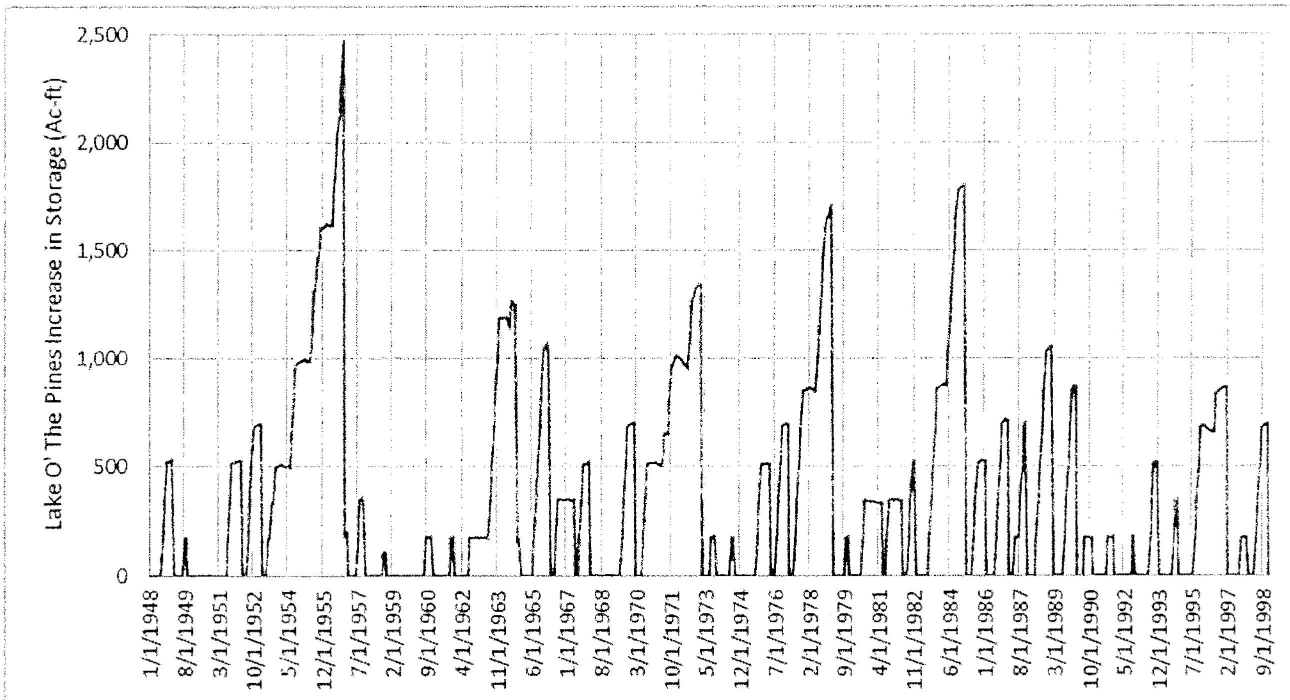

Figure 8: Increases in modeled monthly storage volume of Lake O' The Pines with Pond GR20 operated all-yearlong utilizing WAM Run 3

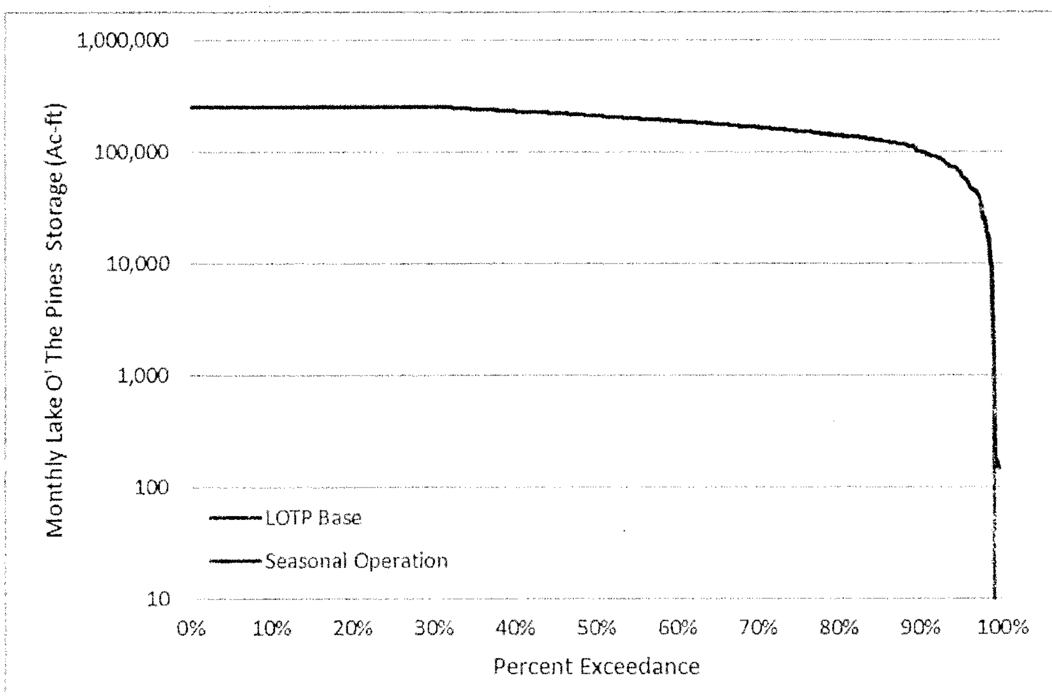

Figure 9: Percent Exceedance of Modeled Monthly Storage at Lake O' The Pines utilizing WAM Run 3

Contributing Watershed Evaluation

Luminant provided available historical information from past studies of the project area, indicating that no detailed modeling of the watershed's hydrology or rainfall information are available for the project site beyond standard available FEMA floodplain maps.

The map of the proposed layout for the final pit configuration with Pond GR20 and an overlay of the 100-yr floodplain is included as Attachment 2, as well as digital attachments in both ArcGIS and CAD formats. The FEMA 100-yr floodplain is denoted by a dashed red line labeled as Flood Zone A.

Based on Carollo's review of this information, it does not appear that flooding from the creek into Pond GR20 is likely, given the location of the 100-year flood plain from the FEMA mapping of the area. No mapping of the 500-yr flood plain is available from FEMA.

Conclusions

From the updated modeling analyses performed herein, it has been determined that the maximum annual volume of unappropriated flow available at the proposed project site is approximately 1,730 ac-ft/yr. This amount is not firm, but given the existence of alternative sources of surface water supply available to NETMWD (e.g., stored supplies from Lake O' the Pines), this amount could be available on a non-firm basis and effectively utilized under certain conditions to supplement supplies. It is recommended that if a permit is pursued for this proposed project, the maximum annual diversion amount should be 1,730 ac-ft/yr.

Further, the proposed Pond GR20 has been shown to have a modeled firm yield of 540 ac-ft/year. If the water from Pond GR20 is discharged to supplement the yield of Lake O' The Pines, then the modeled firm yield of Lake O' The Pines increases by approximately 540 ac-ft/yr to 179,340 ac-ft/yr.

With the proposed project in place – meaning a modeled diversion of 540 ac-ft/yr of firm supply backed by storage from Pond GR20, a streamflow depletion limit of 1,730 ac-ft/yr, and the discharge of these flows to Lake O' The Pines – if the project is operated continuously throughout the calendar year the modeling analyses performed herein indicate an increase to monthly flow of slightly more than 40 ac-ft per month. If the proposed project were to be operated only during "dry period" conditions, i.e., when regulated streamflow at the USGS gage on Big Cypress Creek near Pittsburg are below 1,200 ac-ft/month, then the increase to monthly flows increases to 170 ac-ft/month in about 20% of the months in the modeled period of record. The model files utilized in this assessment are provided as Attachment 1.

Based on Carollo's review of the available information regarding flooding in the project area, it does not appear that flooding from the creek into Pond GR20 is likely, given the location of the 100-year flood plain from the FEMA mapping of the area. This available mapping information is provided as Attachment 2.

WAM Modifications: Max Diversion Evaluation

Addition of new Control Point watershed parameters to the DIS file.

- Proposed impoundment Pit129

```
FD585100  A10000       0
WP585100 1.40313
```

- Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

```
FDTCUSBC  A10000       0
WPTCUSBC 35.3043
```

- Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

```
FDPPDISC  A10000       0
WPPPDISC 21.8636
```

Modifications to Cypress Run3 DAT file.

Addition of new Control Points:

- Proposed impoundment Pit129

```
CP585100  585005                      7           513
```

- Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

```
CPTCUSBC  A10000                      7          NONE
```

- Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

```
CPPPDISC  TCUSBC                      7          NONE
```

- Additional control point modifications to maintain the stream network.

```
** Carollo modify existing CPs to include new tracking CP for Pit 129
analyses
**CP585031  A10000                      7           513
**CP585007  A10000                      7          NONE
**CP585006  A10000                      7          NONE
CP585031  PPDISC                      7           513
CP585007  PPDISC                      7          NONE
CP585006  PPDISC                      7          NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129
analyses
**CP585005  A10000                      7          NONE
**CP585004  A10000                      7          NONE
**CP585003  A10000                      7          NONE
**CP585002  A10000                      7          NONE
**CP585001  A10000                      7          NONE
CP585005  PPDISC                      7          NONE
CP585004  TCUSBC                      7          NONE
CP585003  TCUSBC                      7          NONE
CP585002  TCUSBC                      7          NONE
CP585001  TCUSBC                      7          NONE
```

```
** Carollo modify existing CPs to include new tracking CP for Pit 129
analyses
**CPA10120  A10000                          7              513
**CPA10100  A10000                          7              513
**CPA10090  A10000                          7              513
CPA10120  TCUSBC                          7              513
CPA10100  TCUSBC                          7              513
CPA10090  TCUSBC                          7              513
```

Modeling of Pit 129

```
SVPIT129        4      231      629      944      1306      1766      2365
3072     4266     4744     5876     6810
SAPIT129        2       23       30       34        39        54        67
75       86       102      125      143
```

Modeled Diversion of Pit 129

```
** Calculate Unappropriated flow considering volume needed to refill
storage at PIT129
WR585100                20211231   8
1040X9PT129   PT129
TO     3
TO     5             SUB                             PIT129
** PIT129 Diversion
WR585100      540   MONTH20211231   1  1      1.0
104000PT129   PT129
TO    13             MAX
1040X9PT129
SO                  1730
WSPIT129     6810
```

Optional flow switches controlling timing of pit129 water discharges.

```
FS   1   1  A10000      0.0      1.0      1200            1            0    1
1       1
FS   2   1  A10000      0.0      1.0      1200            1            0    2
2       1
FS   3   1  A10000      0.0      1.0      1200            1            0    3
3       1
FS   4   1  A10000      0.0      1.0      1200            1            0    4
4       1
FS   5   1  A10000      0.0      1.0      1200            1            0    5
5       1
FS   6   1  A10000      0.0      1.0      1200            1            0    6
6       1
```

```
FS  7  1  A10000      0.0      1.0     1200               1           0   7
7        1
FS  8  1  A10000      0.0      1.0     1200               1           0   8
8        1
FS  9  1  A10000      0.0      1.0     1200               1           0   9
9        1
FS 10  1  A10000      0.0      1.0     1200               1           0  10
10       1
FS 11  1  A10000      0.0      1.0     1200               1           0  11
11       1
FS 12  1  A10000      0.0      1.0     1200               1           0  12
12       1
```

Modeled additional water right simulating a proposed junior water right authorizing impoundment of additional water in LOTP.

```
** Jr Refill for LOTP to pickup diversion discharges from PIT129
WRB10040       0     IND20211231   1
JrFill    4590
WSLKOPNS  251000
```

cyp03_pit129-GR20wTO

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD    51    1948       1      -1      -1       0       5       0       0       3       0       0       0
** ==============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10     104000PT129
**FY   1.0  241800    1000     100      10                   FYLOTP
**FY   1.0   48500    1000     100      10                      BOB
**FY     1   10000    1000     100      10     10405850307
**FY     1   10000    1000     100      10     10405850301
**FY     1   10000    1000     100      10     10405850306
**FY     1   10000    1000     100      10     10405850304
**FY     1   10000    1000     100      10     10405850303
**FY     1   10000    1000     100      10     10405850305
**FY     1   10000    1000     100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
UC         0.080   0.084   0.088   0.090   0.090   0.087
UC   REC   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
```

```
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                        7            NONE
CPPPDISC  TCUSBC                        7            NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                        7             513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                        7            NONE
CP585037  A10120                        7             513
CP585009  A10120                        7            NONE
CP585010  A10120                        7            NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                        7             513
**CP585007  A10000                        7            NONE
**CP585006  A10000                        7            NONE
CP585031  PPDISC                        7             513
CP585007  PPDISC                        7            NONE
CP585006  PPDISC                        7            NONE
CP585036  585034                        7             513
CP585034  585033                        7             513
CP585033  585032                        7             513
CP585035  585032                        7             513
CP585032  585005                        7             513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                        7            NONE
**CP585004  A10000                        7            NONE
**CP585003  A10000                        7            NONE
**CP585002  A10000                        7            NONE
**CP585001  A10000                        7            NONE
```

```
CP585005  PPDISC        7      NONE
CP585004  TCUSBC        7      NONE
CP585003  TCUSBC        7      NONE
CP585002  TCUSBC        7      NONE
CP585001  TCUSBC        7      NONE
CP585011  A10070        7      NONE
CP585012  A10010        7      NONE
CP585013  A10010        7      NONE
** add control points for A5814
CP581431  581432        7      QAD413
CP581432  A10260        7      QAD413
CP581433  A10240        7      QAD413
** add control points for A5813
CP581301  D10000        7      NONE
CP581302  D10000        7      NONE
CP581303  D10000        7      NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170        7      B10170
CP458237  B10170        7      B10170
**
CPA10370  A10340        7      QAD413
CPA10350  A10340        7      QAD413
CPA10340  A10300        7
**CPA10300  A10000        7      NONE
CPA10300  A10200        7      NONE
**
CPA10290  A10200        7      NONE
CPA10280  A10240        7      QAD413
CPA10260  A10240        7      QAD413
**CPA10240  A10000        7
CPA10240  A10200        7
CPA10200  A10000        7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000        7      513
**CPA10100  A10000        7      513
**CPA10090  A10000        7      513
CPA10120  TCUSBC        7      513
CPA10100  TCUSBC        7      513
```

cyp03_pit129-GR20wTO

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

cyp03_pit129-GR20wTO

CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

```
CPF10130  F10080                          7            NONE
CPF10120  F10080                          7             513
CPF10110  F10080                          7             513
CPF10100  F10080                          7          QAD512
CPF10090  F10080                          7          QAD413
CPF10080  F10005                          7             513
CPF10030  F10020                          7          QAD412
CPF10020  F10005                          7             513
CPF10005  F10000                          7
CPF10000     OUT                          0            NONE
CP 10050   10040                          7          QAD413
CP 10040   10010                          7          QAD413
CP 10020   10010                          7          QAD413
CP 10010     OUT                          7            NONE
CPQAD412     OUT                          0
CPQAD413     OUT                          0
CPQAD512     OUT                          0
CP   513     OUT                          0
CPSABINE     OUT                          2    NONE    NONE
CPSULPHR     OUT                          2    NONE    NONE
CPA240DM     OUT                          2    NONE    NONE
CPB270DM     OUT                          2    NONE    NONE
CPB70DUM     OUT                          2    NONE    NONE
CPB20MUN     OUT                          2    NONE    NONE
CPAVNGER     OUT                          2    NONE    NONE
CPDNGRFD     OUT                          2    NONE    NONE
CPHGHSPR     OUT                          2    NONE    NONE
CPJEFFSN     OUT                          2    NONE    NONE
CPLVGSTN     OUT                          2    NONE    NONE
CPORECTY     OUT                          2    NONE    NONE
**
** ====================================================================
CPA-ZERO     OUT                          2    ZERO    ZERO      -3        0
** ====================================================================
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
```

```
** Calculate Unappropriated flow considering volume needed to refill storage at PIT129
WR585100                20211231   8                                          1040X9PT129   PT129
TO     3
TO     5              SUB                           PIT129
** PIT129 Diversion
WR585100      540   MONTH20211231   1  1      1.0                             104000PT129   PT129
TO    13              MAX                                            1040X9PT129
SO                   1730
WSPIT129    6810
** Jr Refill for LOTP to pickup diversion discharges from PIT129
WRB10040        0     IND20211231   1                                              JrFill    4590
WSLKOPNS  251000
**
**TXU app 5850, 6/24/05, kb
WR585001       50     IND20041231   1                                         10405850001    5850
WR585002        0     IND20041231   1                                         10405850002    5850
SO                                BACKUP
WR585003        0     IND20041231   1                                         10405850003    5850
SO                                BACKUP
WR585004        0     IND20041231   1                                         10405850004    5850
SO                                BACKUP
WR585005        0     IND20041231   1                                         10405850005    5850
SO                                BACKUP
WR585006        0     IND20041231   1                                         10405850006    5850
SO                                BACKUP
WR585007        0     IND20041231   1                                         10405850007    5850
SO                                BACKUP
WR585008        0     IND20041231   1                                         10405850008    5850
SO                                BACKUP
WR585009        0     IND20041231   1                                         10405850009    5850
SO                                BACKUP
WR585010        0     IND20041231   1                                         10405850010    5850
SO                                BACKUP
WR585011        0     IND20041231   1                                         10405850011    5850
SO                                BACKUP
WR585012        0     IND20041231   1                                         10405850012    5850
SO                                BACKUP
WR585013        0     IND20041231   1                                         10405850013    5850
```

SO				BACKUP			
WR585037	0	IND20041231		1		10405850307	5850
WSR58507	525.6	0.979	0.5841				
WR585031	0	IND20041231		1		10405850301	5850
WSR58501	271.4	0.979	0.5841				
WR585036	0	IND20041231		1		10405850306	5850
WSR58506	327	0.979	0.5841				
WR585034	0	IND20041231		1		10405850304	5850
WSR58504	509.3	0.979	0.5841				
WR585033	0	IND20041231		1		10405850303	5850
WSR58503	287.3	0.979	0.5841				
WR585035	0	IND20041231		1		10405850305	5850
WSR58505	604.8	0.4012	0.856				
WR585032	0	IND20041231		1		10405850302	5850
WSR58502	245.1	0.979	0.5841				
**							
** APPLICATION 5814							
WR581431	0	OTHER20031028		1		10405814301	
WS HR9	356	0.979	0.5841				
WR581432	0	OTHER20031028		1		10405814302	
WS HR21	263	0.979	0.5841				
WR581433	0	OTHER20031028		1		10405814303	
WS HR10	1495	0.4012	0.856				
** APPLICATION 5813							
WR581301	685	581320031001		1		10405813001	
WR581303	0	581320031001		1		10405813003	
SO				BACKUP			
WR581302	0	581320031001		1		10405813002	
SO				BACKUP			
WRD10130	0	REC19830222		1		10404334301	4334
WSWHTOAK	6.7	0.979	0.5841		0		
WRD10160	0	REC19830222		1		10404334302	4334
WSBASSLK	3.4	0.979	0.5841		0		
WRD10140	0	REC19830222		1		10404334303	4334
WSDOGWOD	6	0.979	0.5841		0		
WRD10180	0	REC19830222		1		10404334304	4334
WSLKAUTM	130	0.979	0.5841		0		
WRD10170	0	REC19830222		1		10404334305	4334

```
WSCATFSH        5   0.979  0.5841        0
WRD10150        0     REC19830222   1                                10404334306    4334
WSLKPINE     10.5   0.979  0.5841        0
WRD10190        0     REC19830222   1                                10404334307    4334
WSLKWALL        5   0.979  0.5841        0
WRF10080     2343     MUN19830418   1                         1      10404349001    4349
WSF10080     8.29   0.979  0.5841        0
SO        3293.45    2343
WRF10080     1281     IND19830418   1                         1      10404349002    4349
WSF10080     8.29   0.979  0.5841        0
SO        3293.45    1281
WRB10250        0     REC19841127   1                                10404522301
WSB10250      380   0.979  0.5841        0
WRF10180    202.5     IRR19841218   1                         1      10404525101
WRA10370        0     REC19750106   1                                60404558301
WSA10370      350   0.979  0.5841        0
WRA10350        0     REC19751215   1                                60404559301
WSA10350      230   0.979  0.5841        0
**
**
**  Lake Cypress Springs
**
**
WRA10340    10500     MUN19700720   1                                60404560301    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340     1000     MUN19660131   1                                60404560302    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340      210     IRR19700720   1                                60404560303    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340     3590     IND19700720   1                                60404560304    4560 CYPRESS
WSLKCYPS    72800
**
WRA10340        0     REC19660131   1                                60404560305    4560 CYPRESS
WSLKCYPS    72800
**
```

```
**
WRA10300   11.61     IRR19630831   1                               60404561001
WRA10290    24.0     IRR19630801   1                               60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                               60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                               60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1                               60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                               60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1                               60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                               60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1                            2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                               60404564304    4564  BOBROR
```

```
**
** ==================================================================
WRA10120     1680      MUN19550822    1                                    60404565301    4565
WSTANKSL     2700  0.4012   0.856        0
WRA10120      550      IND19550822    1                                    60404565302    4565
WSTANKSL     2700  0.4012   0.856        0
WRA10120        0      REC19550822    1                                    60404565303    4565
WSTANKSL     2700  0.4012   0.856        0
WRA10090    21.44      IRR19591231    1                                    60404566301
WSA10090     0.23   0.979  0.5841        0
WRA10100        6      IRR19561231    1                                    60404567301
WSA10100        5   0.979  0.5841        0
WRA10050      7.5      IRR19631231    1                                    60404568301
WSA10050       35   0.979  0.5841        0
WRA10070      400      MUN19380317    1                                    60404569301    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10070        0      REC19380317    1                                    60404569302    4569
WSNEWCTY     1176  0.4012   0.856        0
WRA10060      144      MUN19750120    1                                    60404570301    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10060        0      REC19750120    1                                    60404570302    4570
WSOLDCTY      100   0.979  0.5841        0
WRA10040        4      IRR19631231    1                                    60404571301
WSA10040       12   0.979  0.5841        0
WRA10030      4.4      IRR19631231    1                                    60404572301
WSA10030       10   0.979  0.5841        0
WRE10020     25.3      IND19850604    1                                    10404573301
WSE10020       42   0.979  0.5841        0
WRA10010       11      IRR19551231    1                                    60404573001
WRB10320        0      IRR19511231    1                                    60404574001    4574
WSOFF320      5.0   0.979  0.5841        0
SO           5.43    1.40
WRB10320      1.4      IRR19511231    1                                    60404574301    4574
WSB10320      0.5   0.979  0.5841        0
WSOFF320      5.0   0.979  0.5841        0
OR            5.0
SO           5.43    1.40
WRB10290        0      REC19730430    1                                    60404575301
```

```
WSB10290      80   0.979  0.5841       0
**
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                          60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                          60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                          60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                          60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                          60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                          60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                          60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                          60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                          60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                          60404582004    4582 ELLISON
WSELLISN   24700
```

```
SO                    26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232        0   OTHER19720508                              60404582303    4582  barnes
WSBARNES    24000  0.4012   0.856       0
WR458232        0   OTHER19720508                                   4582BU    4582  barnes
WSBARNES    24000
SO                          458237  BACKUP
**
**
WRB10120     38.3     IRR19620731   1                          60404583301
WSB10120     4.79   0.979  0.5841       0
WRB10110     14.2     IRR19480930   1                          60404584301
WSB10110       60   0.979  0.5841       0
WRB10100     0.56     IRR19550331   1                          60404585301
WSB10100       50   0.979  0.5841       0
WRB10090        1     IRR19641231   1                          60404586301
WSB10090       12   0.979  0.5841       0
WRB10080      150     IRR19561231   1                          60404587301
WSSIMPSN     2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070     6668     IND19600504   1                          60404588301    4588
WSJOHNSN    10100
**
WRB10070        0     REC19600504   1                          60404588302    4588
WSJOHNSN    10100
**
**
WRB10050        0     REC19751208   1                          60404589301
WSB10050      240   0.979  0.5841       0
**
**
**  Lake O'the Pines
** ====================================================================
```

```
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                  1MUN    4590  FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                  2IND    4590  FYLOTP
WSLKOPNS  251000
** ================================================================================
**
WRF10250       8     IRR19670430   1                          1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                          1     60404592001
WRF10240      85     IRR19620531   1                          1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                          1     60404594002
WRF10210    2000     MUN19630218   1                          1     60404595001
WRF10190   80.21     IRR19570319   1                          1     60404596001
WRC10040      25     IRR19760621   1                                60404597301
WSC10040      35   0.979  0.5841       0
WRC10030      10     IND19700126   1                                60404598301
WSC10030       5   0.979  0.5841       0
WRC10010      47     IRR19530731   1                                60404599001
WSC10010       7   0.979  0.5841       0
SO         40.42      47
WRF10170    62.5     IRR19660630   1                          1     60404600001
WRD10090       0     REC19461121   1                                60404601301
WSD10090     135   0.979  0.5841       0
WRD10080       0     REC19600211   1                                60404602301
WSD10080    1414  0.4012   0.856       0
WRD10070       0     REC19730312   1                                60404603301
WSELWOOD     116   0.979  0.5841       0
WRD10060    7.03     IRR19670630   1                                60404604301
WSD10060      28   0.979  0.5841       0
WRD10030       0     REC19741209   1                                60404605301    4605
WSD10030      36   0.979  0.5841       0
WRD10040       0     REC19741209   1                                60404605302    4605
WSD10040     114   0.979  0.5841       0
WRD10020       0     REC19740812   1                                60404606301
WSD10020     294   0.979  0.5841       0
WRD10010       0     REC19740812   1                                60404607301
```

cyp03_pit129-GR20wTO

WSD10010	330	0.979	0.5841		0				
WRE10070	18.2		IRR19520630	1				60404608301	
WSE10070	20	0.979	0.5841		0				
WRE10060	15		IND19680318	1				60404609001	4609
WSE10060	4.8	0.979	0.5841		0				
WRE10050	225		IND19821206	1				60404609301	4609
WSE10050	228.2	0.979	0.5841		0				
WRE10040	122		IRR19551010	1				60404610001	
WRE10010	955		IND19430701	1				60404611301	
WSHOLMES	744	0.4012	0.856		0				
WRF10160	46.58		IRR19550323	1			1	60404612001	
WRF10140	165.21		MIN19690224	1			1	60404613001	
WRF10130	7558		MUN19470418	1			1	60404614001	4614
WRF10130	8442		MUN19561127	1			1	60404614002	4614
WRF10120	10		IRR19751215	1			1	60404615301	
WSF10120	54	0.979	0.5841		0				
WRF10110	0		REC19690811	1			1	60404616301	
WSSHADOW	1325	0.4012	0.856		0				
WRF10030	0		REC19720207	1			1	60404617301	
WSLINDEN	112	0.979	0.5841		0				
WRF10020	42		IRR19790221	1			1	60404618301	4618
WSF10020	42	0.979	0.5841		0				
WRF10020	51		IRR19810413	1			1	60404618302	4618
WSF10020	42	0.979	0.5841		0				
WR 10050	0		REC19760524	1				60404619301	
WS 10050	184	0.979	0.5841		0				
WR 10040	0		REC19781016	1				60404620301	
WS 10040	600	0.4012	0.856		0				
WR 10020	0		REC19470922	1				60404621301	
WS 10020	160	0.979	0.5841		0				
WRD10120	0		REC19860404	1				10405054301	
WSD10120	550	0.979	0.5841		0				
WRC10050	0		REC19860729	1				10405080301	
WSC10050	300	0.979	0.5841		0				
WRF10100	0		REC19861125	1			1	10405112301	
WSF10100	277	0.979	0.5841		0				
WRA10280	0		IND19880121	1				10405167301	
WSPONDH1	477	0.979	0.5841		0				

```
WRB10300       0     IRR19890112   1                                    10405212301
WSB10300    0.09   0.979  0.5841       0
WRB10260       0     IRR19890810   1                                    10405251301
WSB10260      86   0.979  0.5841       0
IFD10110  1025.6   CONST19891214   1   1                    IF5272
**
WRD10110    6180     MUN19891214   1                                    10405272301    5272
WSLKGILM   12720
WRD10110       0     REC19891214   1                                    10405272302    5272
WSLKGILM   12720
WRF10090       0     REC19900710   1                              1     10405302301
WSF10090      80   0.979  0.5841       0
WRA10260       0     IND19950522   1                                    10405529301
WSPONDH4   173.7   0.979  0.5841       0
WRE10080       0     REC19950801   1                                    10405537301
WSE10080     296   0.979  0.5841       0
WRE10090      34     IRR19980320   1                                    10405608301    5608
WSE10090    55.6   0.979  0.5841       0
WRE10090       0     REC19980320   1                                    10405608302    5608
WSE10090    55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                    60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                    60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
```

```
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129       4     231     629     944    1306    1766    2365    3072    4266    4744    5876    6810
SAPIT129       2      23      30      34      39      54      67      75      86     102     125     143
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129-GR20wTO_FY

cyp03_pit129-GR20wTO_FY

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ===============================================
JD    51    1948      1      -1      -1       0       5       0       0       3       0       0       0
** ===============================================
JO
RO    -1
**
FY      1   10000    1000     100      10     104000PT129
**FY    1.0  241800    1000     100      10                       FYLOTP
**FY    1.0   48500    1000     100      10                          BOB
**FY      1   10000    1000     100      10     10405850307
**FY      1   10000    1000     100      10     10405850301
**FY      1   10000    1000     100      10     10405850306
**FY      1   10000    1000     100      10     10405850304
**FY      1   10000    1000     100      10     10405850303
**FY      1   10000    1000     100      10     10405850305
**FY      1   10000    1000     100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
```

```
UC          0.080   0.084   0.088   0.090   0.090   0.087
UC    REC   0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC OTHER    0.083   0.083   0.083   0.083   0.083   0.083
UC          0.083   0.083   0.083   0.083   0.083   0.083
UC CONST      2.0     2.0     2.0     2.0     2.0     1.0
UC            1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH       31   28.25      31      30      31      30
UC             31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                       7              NONE
CPPPDISC  TCUSBC                       7              NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                       7               513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                       7              NONE
CP585037  A10120                       7               513
CP585009  A10120                       7              NONE
CP585010  A10120                       7              NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                       7               513
**CP585007  A10000                       7              NONE
**CP585006  A10000                       7              NONE
CP585031  PPDISC                       7               513
CP585007  PPDISC                       7              NONE
CP585006  PPDISC                       7              NONE
CP585036  585034                       7               513
CP585034  585033                       7               513
CP585033  585032                       7               513
CP585035  585032                       7               513
CP585032  585005                       7               513
```

```
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000        7       NONE
**CP585004  A10000        7       NONE
**CP585003  A10000        7       NONE
**CP585002  A10000        7       NONE
**CP585001  A10000        7       NONE
CP585005  PPDISC          7       NONE
CP585004  TCUSBC          7       NONE
CP585003  TCUSBC          7       NONE
CP585002  TCUSBC          7       NONE
CP585001  TCUSBC          7       NONE
CP585011  A10070          7       NONE
CP585012  A10010          7       NONE
CP585013  A10010          7       NONE
** add control points for A5814
CP581431  581432          7       QAD413
CP581432  A10260          7       QAD413
CP581433  A10240          7       QAD413
** add control points for A5813
CP581301  D10000          7       NONE
CP581302  D10000          7       NONE
CP581303  D10000          7       NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170          7       B10170
CP458237  B10170          7       B10170
**
CPA10370  A10340          7       QAD413
CPA10350  A10340          7       QAD413
CPA10340  A10300          7
**CPA10300  A10000        7       NONE
CPA10300  A10200          7       NONE
**
CPA10290  A10200          7       NONE
CPA10280  A10240          7       QAD413
CPA10260  A10240          7       QAD413
```

```
**CPA10240  A10000                       7
CPA10240  A10200                       7
CPA10200  A10000                       7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                       7             513
**CPA10100  A10000                       7             513
**CPA10090  A10000                       7             513
CPA10120  TCUSBC                       7             513
CPA10100  TCUSBC                       7             513
CPA10090  TCUSBC                       7             513
CPA10070  A10010                       7             513
CPA10060  A10010                       7             513
CPA10050  A10010                       7             513
CPA10040  A10010                       7             513
CPA10030  A10010                       7          QAD413
CPA10020  A10010                       7            NONE
CPA10010  A10000                       7             513
CPA10000  B10150                       0            NONE
CPB10320  B10310                       7          QAD413
CPB10310  B10150                       7            NONE
CPB10300  B10150                       7          QAD413
CPB10290  B10150                       7          QAD413
CPB10270  B10150                       7
CPB10260  B10150                       7          QAD413
CPB10250  B10150                       7          QAD413
CPB10230  B10170                       7             513
CPB10220  B10230                       7             513
CPB10210  B10150                       7             513
CPB10200  B10150                       7             513
CPB10180  B10170                       7             513
CPB10170  B10150                       7
CPB10150  B10040                       7            NONE
CPB10120  B10040                       7             513
CPB10110  B10040                       7             513
CPB10100  B10040                       7             513
```

cyp03_pit129-GR20wTO_FY

CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

CPE10050	E10040	7		QAD412
CPE10040	E10000	7		NONE
CPE10020	E10010	7		513
CPE10010	E10000	7		QAD412
CPE10000	F10160	0		NONE
CPF10250	F10230	7		QAD512
CPF10240	F10230	7		513
CPF10230	F10220	7		NONE
CPF10220	F10210	7		NONE
CPF10210	F10190	7		NONE
CPF10190	F10130	7		NONE
CPF10180	F10170	7		NONE
CPF10170	F10130	7		NONE
CPF10160	F10130	7		NONE
CPF10140	F10130	7		NONE
CPF10130	F10080	7		NONE
CPF10120	F10080	7		513
CPF10110	F10080	7		513
CPF10100	F10080	7		QAD512
CPF10090	F10080	7		QAD413
CPF10080	F10005	7		513
CPF10030	F10020	7		QAD412
CPF10020	F10005	7		513
CPF10005	F10000	7		
CPF10000	OUT	0		NONE
CP 10050	10040	7		QAD413
CP 10040	10010	7		QAD413
CP 10020	10010	7		QAD413
CP 10010	OUT	7		NONE
CPQAD412	OUT	0		
CPQAD413	OUT	0		
CPQAD512	OUT	0		
CP 513	OUT	0		
CPSABINE	OUT	2	NONE	NONE
CPSULPHR	OUT	2	NONE	NONE

```
CPA240DM    OUT                         2   NONE    NONE
CPB270DM    OUT                         2   NONE    NONE
CPB70DUM    OUT                         2   NONE    NONE
CPB20MUN    OUT                         2   NONE    NONE
CPAVNGER    OUT                         2   NONE    NONE
CPDNGRFD    OUT                         2   NONE    NONE
CPHGHSPR    OUT                         2   NONE    NONE
CPJEFFSN    OUT                         2   NONE    NONE
CPLVGSTN    OUT                         2   NONE    NONE
CPORECTY    OUT                         2   NONE    NONE
**
** ======================================================================
CPA-ZERO    OUT                         2   ZERO    ZERO      -3       0
** ======================================================================
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
** Check Unappropriated flow
WR585100                20211231   8                                  1040X1PT129   PT129
TO     3
** Calculate Unappropriated flow considering volume needed to refill storage at PIT129
WR585100                20211231   8                                  1040X9PT129   PT129
TO     3
TO     5              SUB                          PIT129
** PIT129 Diversion
WR585100     552    MONTH20211231   1  1      1.0                     104000PT129   PT129
TO    13              MAX                                     1040X9PT129
SO                   1730
WSPIT129    6810
** Check Unappropriated flow
WR585100                20211231   8                                  1040X2PT129   PT129
TO     3
WRB10040       0      IND20211231   1                                      JrFill    4590
WSLKOPNS  251000
```

```
** Check Unappropriated flow
WR585100                20211231   8                                      1040X3PT129   PT129
TO     3
**
**
**TXU app 5850, 6/24/05, kb
WR585001      50     IND20041231   1                                      10405850001    5850
WR585002       0     IND20041231   1                                      10405850002    5850
SO                                BACKUP
WR585003       0     IND20041231   1                                      10405850003    5850
SO                                BACKUP
WR585004       0     IND20041231   1                                      10405850004    5850
SO                                BACKUP
WR585005       0     IND20041231   1                                      10405850005    5850
SO                                BACKUP
WR585006       0     IND20041231   1                                      10405850006    5850
SO                                BACKUP
WR585007       0     IND20041231   1                                      10405850007    5850
SO                                BACKUP
WR585008       0     IND20041231   1                                      10405850008    5850
SO                                BACKUP
WR585009       0     IND20041231   1                                      10405850009    5850
SO                                BACKUP
WR585010       0     IND20041231   1                                      10405850010    5850
SO                                BACKUP
WR585011       0     IND20041231   1                                      10405850011    5850
SO                                BACKUP
WR585012       0     IND20041231   1                                      10405850012    5850
SO                                BACKUP
WR585013       0     IND20041231   1                                      10405850013    5850
SO                                BACKUP
WR585037       0     IND20041231   1                                      10405850307    5850
WSR58507   525.6   0.979  0.5841
WR585031       0     IND20041231   1                                      10405850301    5850
WSR58501   271.4   0.979  0.5841
```

WR585036	0	IND20041231		1		10405850306	5850
WSR58506	327	0.979	0.5841				
WR585034	0	IND20041231		1		10405850304	5850
WSR58504	509.3	0.979	0.5841				
WR585033	0	IND20041231		1		10405850303	5850
WSR58503	287.3	0.979	0.5841				
WR585035	0	IND20041231		1		10405850305	5850
WSR58505	604.8	0.4012	0.856				
WR585032	0	IND20041231		1		10405850302	5850
WSR58502	245.1	0.979	0.5841				
**							
** APPLICATION 5814							
WR581431	0	OTHER20031028		1		10405814301	
WS HR9	356	0.979	0.5841				
WR581432	0	OTHER20031028		1		10405814302	
WS HR21	263	0.979	0.5841				
WR581433	0	OTHER20031028		1		10405814303	
WS HR10	1495	0.4012	0.856				
** APPLICATION 5813							
WR581301	685	581320031001		1		10405813001	
WR581303	0	581320031001		1		10405813003	
SO				BACKUP			
WR581302	0	581320031001		1		10405813002	
SO				BACKUP			
WRD10130	0	REC19830222		1		10404334301	4334
WSWHTOAK	6.7	0.979	0.5841		0		
WRD10160	0	REC19830222		1		10404334302	4334
WSBASSLK	3.4	0.979	0.5841		0		
WRD10140	0	REC19830222		1		10404334303	4334
WSDOGWOD	6	0.979	0.5841		0		
WRD10180	0	REC19830222		1		10404334304	4334
WSLKAUTM	130	0.979	0.5841		0		
WRD10170	0	REC19830222		1		10404334305	4334
WSCATFSH	5	0.979	0.5841		0		
WRD10150	0	REC19830222		1		10404334306	4334

```
WSLKPINE    10.5   0.979  0.5841      0
WRD10190       0    REC19830222   1                               10404334307    4334
WSLKWALL       5   0.979  0.5841      0
WRF10080    2343    MUN19830418   1                        1      10404349001    4349
WSF10080    8.29   0.979  0.5841      0
SO       3293.45    2343
WRF10080    1281    IND19830418   1                        1      10404349002    4349
WSF10080    8.29   0.979  0.5841      0
SO       3293.45    1281
WRB10250       0    REC19841127   1                               10404522301
WSB10250     380   0.979  0.5841      0
WRF10180   202.5    IRR19841218   1                        1      10404525101
WRA10370       0    REC19750106   1                               60404558301
WSA10370     350   0.979  0.5841      0
WRA10350       0    REC19751215   1                               60404559301
WSA10350     230   0.979  0.5841      0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500    MUN19700720   1                               60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000    MUN19660131   1                               60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210    IRR19700720   1                               60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590    IND19700720   1                               60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0    REC19660131   1                               60404560305    4560 CYPRESS
WSLKCYPS   72800
```

```
**
**
WRA10300   11.61     IRR19630831   1                        60404561001
WRA10290    24.0     IRR19630801   1                        60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                        60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                        60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
**
WRA10200   10000     MUN19711220   1                        60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                        60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1                        60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                        60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1                     2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                         1TXU_MONTE    4590     BOB LOTPBOB
```

```
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                       60404564304    4564  BOBROR
**
** ===================================================================
WRA10120    1680     MUN19550822   1                                       60404565301    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120     550     IND19550822   1                                       60404565302    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120       0     REC19550822   1                                       60404565303    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10090   21.44     IRR19591231   1                                       60404566301
WSA10090    0.23   0.979  0.5841       0
WRA10100       6     IRR19561231   1                                       60404567301
WSA10100       5   0.979  0.5841       0
WRA10050     7.5     IRR19631231   1                                       60404568301
WSA10050      35   0.979  0.5841       0
WRA10070     400     MUN19380317   1                                       60404569301    4569
WSNEWCTY    1176  0.4012   0.856       0
WRA10070       0     REC19380317   1                                       60404569302    4569
WSNEWCTY    1176  0.4012   0.856       0
WRA10060     144     MUN19750120   1                                       60404570301    4570
WSOLDCTY     100   0.979  0.5841       0
WRA10060       0     REC19750120   1                                       60404570302    4570
WSOLDCTY     100   0.979  0.5841       0
WRA10040       4     IRR19631231   1                                       60404571301
WSA10040      12   0.979  0.5841       0
WRA10030     4.4     IRR19631231   1                                       60404572301
WSA10030      10   0.979  0.5841       0
WRE10020    25.3     IND19850604   1                                       10404573301
WSE10020      42   0.979  0.5841       0
WRA10010      11     IRR19551231   1                                       60404573001
WRB10320       0     IRR19511231   1                                       60404574001    4574
WSOFF320     5.0   0.979  0.5841       0
```

```
SO          5.43    1.40
WRB10320     1.4     IRR19511231   1                                      60404574301    4574
WSB10320     0.5   0.979  0.5841       0
WSOFF320     5.0   0.979  0.5841       0
OR           5.0
SO          5.43    1.40
WRB10290       0     REC19730430   1                                      60404575301
WSB10290      80   0.979  0.5841       0
**
**
**
**  Welsh Reservoir
WRB10270   11000     IND19730910   1                                      60404576301    4576
WS WELSH   23587
**
**
WRB10270       0     REC19730910   1                                      60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124     IRR19500930   1                                      60404577301
WSB10230      96   0.979  0.5841       0
WRB10220       6     IRR19521231   1                                      60404578301
WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                      60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                      60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                      60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
```

```
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                           60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                           60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                           60404582004    4582 ELLISON
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                               60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                                    4582BU    4582  barnes
WSBARNES   24000
SO                        458237  BACKUP
**
**
WRB10120    38.3     IRR19620731   1                                           60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                                           60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                                           60404585301
WSB10100      50   0.979  0.5841       0
WRB10090       1     IRR19641231   1                                           60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                                           60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
```

```
WRB10070    6668     IND19600504   1                                      60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                      60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                      60404589301
WSB10050     240   0.979  0.5841        0
**
**
**  Lake O'the Pines
** ==============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                             1MUN    4590   FYLOTP
WSLKOPNS  251000       -1
WRB10040  151800     IND19570916   1                                             2IND    4590   FYLOTP
WSLKOPNS  251000
** ==============================================================================
**
WRF10250       8     IRR19670430   1                            1     60404591301
WSF10250       6   0.979  0.5841        0
WRF10230   96.88     IRR19690930   1                            1     60404592001
WRF10240      85     IRR19620531   1                            1     60404593301
WSF10240     100   0.979  0.5841        0
WRF10220    1080     IRR19550103   1                            1     60404594002
WRF10210    2000     MUN19630218   1                            1     60404595001
WRF10190   80.21     IRR19570319   1                            1     60404596001
WRC10040      25     IRR19760621   1                                  60404597301
WSC10040      35   0.979  0.5841        0
WRC10030      10     IND19700126   1                                  60404598301
WSC10030       5   0.979  0.5841        0
WRC10010      47     IRR19530731   1                                  60404599001
WSC10010       7   0.979  0.5841        0
SO         40.42      47
```

cyp03_pit129-GR20wTO_FY

WRF10170	62.5		IRR19660630	1		1	60404600001	
WRD10090	0		REC19461121	1			60404601301	
WSD10090	135	0.979	0.5841		0			
WRD10080	0		REC19600211	1			60404602301	
WSD10080	1414	0.4012	0.856		0			
WRD10070	0		REC19730312	1			60404603301	
WSELWOOD	116	0.979	0.5841		0			
WRD10060	7.03		IRR19670630	1			60404604301	
WSD10060	28	0.979	0.5841		0			
WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	

WSLINDEN	112	0.979	0.5841		0			
WRF10020	42	IRR19790221		1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51	IRR19810413		1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0	REC19760524		1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0	REC19781016		1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0	REC19470922		1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0	REC19860404		1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0	REC19860729		1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0	REC19861125		1		1	10405112301	
WSF10100	277	0.979	0.5841		0			
WRA10280	0	IND19880121		1			10405167301	
WSPONDH1	477	0.979	0.5841		0			
WRB10300	0	IRR19890112		1			10405212301	
WSB10300	0.09	0.979	0.5841		0			
WRB10260	0	IRR19890810		1			10405251301	
WSB10260	86	0.979	0.5841		0			
IFD10110	1025.6	CONST19891214		1	1	IF5272		
**								
WRD10110	6180	MUN19891214		1			10405272301	5272
WSLKGILM	12720							
WRD10110	0	REC19891214		1			10405272302	5272
WSLKGILM	12720							
WRF10090	0	REC19900710		1		1	10405302301	
WSF10090	80	0.979	0.5841		0			
WRA10260	0	IND19950522		1			10405529301	
WSPONDH4	173.7	0.979	0.5841		0			
WRE10080	0	REC19950801		1			10405537301	
WSE10080	296	0.979	0.5841		0			

```
WRE10090      34     IRR19980320   1                                       10405608301    5608
WSE10090    55.6   0.979  0.5841        0
WRE10090       0     REC19980320   1                                       10405608302    5608
WSE10090    55.6   0.979  0.5841        0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999   1                                       60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999   1                                       60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129       4     231     629     944    1306    1766    2365    3072    4266    4744    5876    6810
```

```
SAPIT129       2       23       30       34       39       54       67       75       86      102      125      143
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
** Therefore, this DI record is only included as a place holder.
**
DI      1       1   CADDO
IS      4       0  125000  125001  865000
IP            100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129-GR20wTOwFS1200

```
T1  Cypress Water Availability Modeling
T2  Full Authorized Diversions, No Return Flows
T3  Updated 6/18/2015 KA
**
**
**  General Comments
**
** ==============================================
JD    51    1948      1      -1      -1       0       5       0       0       3       0       0       0
** ==============================================
JO
RO    -1
**
**FY     1   10000    1000     100      10     104000PT129
**FY   1.0  241800    1000     100      10                    FYLOTP
**FY   1.0   48500    1000     100      10                       BOB
**FY     1   10000    1000     100      10     10405850307
**FY     1   10000    1000     100      10     10405850301
**FY     1   10000    1000     100      10     10405850306
**FY     1   10000    1000     100      10     10405850304
**FY     1   10000    1000     100      10     10405850303
**FY     1   10000    1000     100      10     10405850305
**FY     1   10000    1000     100      10     10405850302
**
**  Monthly Water Use Factors
**
UC  5813      60      60      60      60      76      76
UC            76      76      76      60      60      60
UC   MUN   0.077   0.070   0.075   0.076   0.084   0.091
UC         0.100   0.100   0.089   0.085   0.076   0.078
UC   IND   0.068   0.063   0.070   0.080   0.081   0.077
UC         0.109   0.109   0.104   0.084   0.072   0.076
UC   IRR   0.000   0.001   0.004   0.013   0.051   0.162
UC         0.200   0.241   0.142   0.097   0.053   0.038
UC   MIN   0.079   0.080   0.084   0.080   0.081   0.077
UC         0.080   0.084   0.088   0.090   0.090   0.087
UC   REC   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
```

```
UC OTHER   0.083   0.083   0.083   0.083   0.083   0.083
UC         0.083   0.083   0.083   0.083   0.083   0.083
UC CONST     2.0     2.0     2.0     2.0     2.0     1.0
UC           1.0     1.0     1.0     1.0     1.0     1.0
UC MONTH      31   28.25      31      30      31      30
UC            31      31      30      31      30      31
**
**  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC  A10000                       7            NONE
CPPPDISC  TCUSBC                       7            NONE
** Carollo add additional control point for modeling of pit 129
CP585100  585005                       7             513
**
**TXU app 5850, 6/24/05, kb
CP585008  A10120                       7            NONE
CP585037  A10120                       7             513
CP585009  A10120                       7            NONE
CP585010  A10120                       7            NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031  A10000                       7             513
**CP585007  A10000                       7            NONE
**CP585006  A10000                       7            NONE
CP585031  PPDISC                       7             513
CP585007  PPDISC                       7            NONE
CP585006  PPDISC                       7            NONE
CP585036  585034                       7             513
CP585034  585033                       7             513
CP585033  585032                       7             513
CP585035  585032                       7             513
CP585032  585005                       7             513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005  A10000                       7            NONE
**CP585004  A10000                       7            NONE
**CP585003  A10000                       7            NONE
**CP585002  A10000                       7            NONE
**CP585001  A10000                       7            NONE
```

```
CP585005  PPDISC                      7           NONE
CP585004  TCUSBC                      7           NONE
CP585003  TCUSBC                      7           NONE
CP585002  TCUSBC                      7           NONE
CP585001  TCUSBC                      7           NONE
CP585011  A10070                      7           NONE
CP585012  A10010                      7           NONE
CP585013  A10010                      7           NONE
** add control points for A5814
CP581431  581432                      7         QAD413
CP581432  A10260                      7         QAD413
CP581433  A10240                      7         QAD413
** add control points for A5813
CP581301  D10000                      7           NONE
CP581302  D10000                      7           NONE
CP581303  D10000                      7           NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232  B10170                      7         B10170
CP458237  B10170                      7         B10170
**
CPA10370  A10340                      7         QAD413
CPA10350  A10340                      7         QAD413
CPA10340  A10300                      7
**CPA10300  A10000                      7           NONE
CPA10300  A10200                      7           NONE
**
CPA10290  A10200                      7           NONE
CPA10280  A10240                      7         QAD413
CPA10260  A10240                      7         QAD413
**CPA10240  A10000                      7
CPA10240  A10200                      7
CPA10200  A10000                      7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120  A10000                      7             513
**CPA10100  A10000                      7             513
**CPA10090  A10000                      7             513
CPA10120  TCUSBC                      7             513
CPA10100  TCUSBC                      7             513
```

cyp03_pit129-GR20wTOwFS1200

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB10040	B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

cyp03_pit129-GR20wTOwFS1200

CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

```
CPF10130  F10080                       7              NONE
CPF10120  F10080                       7               513
CPF10110  F10080                       7               513
CPF10100  F10080                       7            QAD512
CPF10090  F10080                       7            QAD413
CPF10080  F10005                       7               513
CPF10030  F10020                       7            QAD412
CPF10020  F10005                       7               513
CPF10005  F10000                       7
CPF10000     OUT                       0              NONE
CP 10050   10040                       7            QAD413
CP 10040   10010                       7            QAD413
CP 10020   10010                       7            QAD413
CP 10010     OUT                       7              NONE
CPQAD412     OUT                       0
CPQAD413     OUT                       0
CPQAD512     OUT                       0
CP   513     OUT                       0
CPSABINE     OUT                       2    NONE      NONE
CPSULPHR     OUT                       2    NONE      NONE
CPA240DM     OUT                       2    NONE      NONE
CPB270DM     OUT                       2    NONE      NONE
CPB70DUM     OUT                       2    NONE      NONE
CPB20MUN     OUT                       2    NONE      NONE
CPAVNGER     OUT                       2    NONE      NONE
CPDNGRFD     OUT                       2    NONE      NONE
CPHGHSPR     OUT                       2    NONE      NONE
CPJEFFSN     OUT                       2    NONE      NONE
CPLVGSTN     OUT                       2    NONE      NONE
CPORECTY     OUT                       2    NONE      NONE
**
** ======================================================================
CPA-ZERO     OUT                       2    ZERO      ZERO      -3       0
** ======================================================================
**
**  Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
```

```
** Check Unappropriated flow
WR585100                20211231   8                                               1040X1PT129    PT129
TO      3
** Calculate Unappropriated flow considering volume needed to refill storage at PIT129
WR585100                20211231   8                                               1040X9PT129    PT129
TO      3
TO      5            SUB                          PIT129
** PIT129 Diversion
WR585100     2079    MONTH20211231   1  1      1.0                                 104000PT129    PT129
TO     13            MAX                                             1040X9PT129
SO                  1730
WSPIT129     6810
FS   1   1   A10000     0.0      1.0     1200          1          0   1   1      1
FS   2   1   A10000     0.0      1.0     1200          1          0   2   2      1
FS   3   1   A10000     0.0      1.0     1200          1          0   3   3      1
FS   4   1   A10000     0.0      1.0     1200          1          0   4   4      1
FS   5   1   A10000     0.0      1.0     1200          1          0   5   5      1
FS   6   1   A10000     0.0      1.0     1200          1          0   6   6      1
FS   7   1   A10000     0.0      1.0     1200          1          0   7   7      1
FS   8   1   A10000     0.0      1.0     1200          1          0   8   8      1
FS   9   1   A10000     0.0      1.0     1200          1          0   9   9      1
FS  10   1   A10000     0.0      1.0     1200          1          0  10  10      1
FS  11   1   A10000     0.0      1.0     1200          1          0  11  11      1
FS  12   1   A10000     0.0      1.0     1200          1          0  12  12      1
** Check Unappropriated flow
WR585100                20211231   8                                               1040X2PT129    PT129
TO      3
WRB10040        0    IND20211231   1                                                    JrFill     4590
WSLKOPNS  251000
** Check Unappropriated flow
WR585100                20211231   8                                               1040X3PT129    PT129
TO      3
**
**
**TXU app 5850, 6/24/05, kb
WR585001       50    IND20041231   1                                               10405850001     5850
WR585002        0    IND20041231   1                                               10405850002     5850
SO                                BACKUP
```

```
WR585003      0    IND20041231   1                        10405850003   5850
SO                               BACKUP
WR585004      0    IND20041231   1                        10405850004   5850
SO                               BACKUP
WR585005      0    IND20041231   1                        10405850005   5850
SO                               BACKUP
WR585006      0    IND20041231   1                        10405850006   5850
SO                               BACKUP
WR585007      0    IND20041231   1                        10405850007   5850
SO                               BACKUP
WR585008      0    IND20041231   1                        10405850008   5850
SO                               BACKUP
WR585009      0    IND20041231   1                        10405850009   5850
SO                               BACKUP
WR585010      0    IND20041231   1                        10405850010   5850
SO                               BACKUP
WR585011      0    IND20041231   1                        10405850011   5850
SO                               BACKUP
WR585012      0    IND20041231   1                        10405850012   5850
SO                               BACKUP
WR585013      0    IND20041231   1                        10405850013   5850
SO                               BACKUP
WR585037      0    IND20041231   1                        10405850307   5850
WSR58507  525.6   0.979  0.5841
WR585031      0    IND20041231   1                        10405850301   5850
WSR58501  271.4   0.979  0.5841
WR585036      0    IND20041231   1                        10405850306   5850
WSR58506    327   0.979  0.5841
WR585034      0    IND20041231   1                        10405850304   5850
WSR58504  509.3   0.979  0.5841
WR585033      0    IND20041231   1                        10405850303   5850
WSR58503  287.3   0.979  0.5841
WR585035      0    IND20041231   1                        10405850305   5850
WSR58505  604.8  0.4012   0.856
WR585032      0    IND20041231   1                        10405850302   5850
WSR58502  245.1   0.979  0.5841
**
** APPLICATION 5814
```

WR581431	0	OTHER20031028		1			10405814301	
WS HR9	356	0.979	0.5841					
WR581432	0	OTHER20031028		1			10405814302	
WS HR21	263	0.979	0.5841					
WR581433	0	OTHER20031028		1			10405814303	
WS HR10	1495	0.4012	0.856					
** APPLICATION 5813								
WR581301	685	581320031001		1			10405813001	
WR581303	0	581320031001		1			10405813003	
SO				BACKUP				
WR581302	0	581320031001		1			10405813002	
SO				BACKUP				
WRD10130	0	REC19830222		1			10404334301	4334
WSWHTOAK	6.7	0.979	0.5841		0			
WRD10160	0	REC19830222		1			10404334302	4334
WSBASSLK	3.4	0.979	0.5841		0			
WRD10140	0	REC19830222		1			10404334303	4334
WSDOGWOD	6	0.979	0.5841		0			
WRD10180	0	REC19830222		1			10404334304	4334
WSLKAUTM	130	0.979	0.5841		0			
WRD10170	0	REC19830222		1			10404334305	4334
WSCATFSH	5	0.979	0.5841		0			
WRD10150	0	REC19830222		1			10404334306	4334
WSLKPINE	10.5	0.979	0.5841		0			
WRD10190	0	REC19830222		1			10404334307	4334
WSLKWALL	5	0.979	0.5841		0			
WRF10080	2343	MUN19830418		1		1	10404349001	4349
WSF10080	8.29	0.979	0.5841		0			
SO	3293.45	2343						
WRF10080	1281	IND19830418		1		1	10404349002	4349
WSF10080	8.29	0.979	0.5841		0			
SO	3293.45	1281						
WRB10250	0	REC19841127		1			10404522301	
WSB10250	380	0.979	0.5841		0			
WRF10180	202.5	IRR19841218		1		1	10404525101	
WRA10370	0	REC19750106		1			60404558301	
WSA10370	350	0.979	0.5841		0			
WRA10350	0	REC19751215		1			60404559301	

```
WSA10350     230   0.979  0.5841       0
**
**
**  Lake Cypress Springs
**
**
WRA10340   10500     MUN19700720   1                                   60404560301    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    1000     MUN19660131   1                                   60404560302    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340     210     IRR19700720   1                                   60404560303    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340    3590     IND19700720   1                                   60404560304    4560 CYPRESS
WSLKCYPS   72800
**
WRA10340       0     REC19660131   1                                   60404560305    4560 CYPRESS
WSLKCYPS   72800
**
**
WRA10300   11.61     IRR19630831   1                                   60404561001
WRA10290    24.0     IRR19630801   1                                   60404562002
**
**
**  Lake Monticello
**
**
WRA10240   15300     IND19700406   1                                   60404563301    4563
WSLKMONT   40100
**
WRA10240    1000     IND19730604   1                                   60404563302    4563
WSLKMONT   40100
**
**
**
**  Lake Bob Sandlin
```

```
**
WRA10200   10000     MUN19711220   1                                     60404564301    4564     BOB
WSBOBSAN  213350
**
WRA10200    8000     IND19711220   1                                     60404564302    4564     BOB
WSBOBSAN  213350
**
WRA10200   10900     IND19711220   1                                     60404564303    4564     BOB
WSBOBSAN  213350
**
WRA10200       0     REC19711220   1                                     60404564305    4564     BOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - MUNI AUTHORIZATION
WRA10200    1930     MUN19711220   1                                  2MEMBERSFRMBOB    4590     BOB LOTPBOB
WSBOBSAN  213350
** LOTP WATER FROM BOB SANDLIN - IND AUTHORIZATION
WRA10200   10000     IND19711220   1                                     1TXU_MONTE    4590     BOB LOTPBOB
WSBOBSAN  213350
** REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
** BOB SANDLIN STORAGE, INFLOWS ONLY.
WRA10200   19600     IND19780313   1                                     60404564304    4564  BOBROR
**
** ================================================================
WRA10120    1680     MUN19550822   1                                     60404565301    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120     550     IND19550822   1                                     60404565302    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10120       0     REC19550822   1                                     60404565303    4565
WSTANKSL    2700  0.4012   0.856       0
WRA10090   21.44     IRR19591231   1                                     60404566301
WSA10090    0.23   0.979  0.5841       0
WRA10100       6     IRR19561231   1                                     60404567301
WSA10100       5   0.979  0.5841       0
WRA10050     7.5     IRR19631231   1                                     60404568301
WSA10050      35   0.979  0.5841       0
WRA10070     400     MUN19380317   1                                     60404569301    4569
WSNEWCTY    1176  0.4012   0.856       0
WRA10070       0     REC19380317   1                                     60404569302    4569
```

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WSNEWCTY    1176  0.4012   0.856        0
WRA10060     144    MUN19750120   1                                          60404570301    4570
WSOLDCTY     100   0.979  0.5841        0
WRA10060       0    REC19750120   1                                          60404570302    4570
WSOLDCTY     100   0.979  0.5841        0
WRA10040       4    IRR19631231   1                                          60404571301
WSA10040      12   0.979  0.5841        0
WRA10030     4.4    IRR19631231   1                                          60404572301
WSA10030      10   0.979  0.5841        0
WRE10020    25.3    IND19850604   1                                          10404573301
WSE10020      42   0.979  0.5841        0
WRA10010      11    IRR19551231   1                                          60404573001
WRB10320       0    IRR19511231   1                                          60404574001    4574
WSOFF320     5.0   0.979  0.5841        0
SO          5.43    1.40
WRB10320     1.4    IRR19511231   1                                          60404574301    4574
WSB10320     0.5   0.979  0.5841        0
WSOFF320     5.0   0.979  0.5841        0
OR           5.0
SO          5.43    1.40
WRB10290       0    REC19730430   1                                          60404575301
WSB10290      80   0.979  0.5841        0
**
**
**
**  Welsh Reservoir
WRB10270   11000    IND19730910   1                                          60404576301    4576
WS WELSH   23587
**
**
WRB10270       0    REC19730910   1                                          60404576302    4576
WS WELSH   23587
**
**
**
WRB10230     124    IRR19500930   1                                          60404577301
WSB10230      96   0.979  0.5841        0
WRB10220       6    IRR19521231   1                                          60404578301
```

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WSB10220       1   0.979  0.5841       0
WRB10210      75     IRR19531231   1                                  60404579301
WSB10210      64   0.979  0.5841       0
WRB10200       2     IRR19581231   1                                  60404580301
WSB10200     0.5   0.979  0.5841       0
WRB10180       0     REC19690922   1                                  60404581301
WSB10180     510   0.979  0.5841       0
**
**
**  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
**  is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
**  Ellison Creek Reservoir
**
WRB10170    2000     MUN19720508   1                                  60404582001    4582 ELLISON
WSELLISN   24700
**
WRB10170   21000     IND19421130   1                                  60404582002    4582 ELLISON
WSELLISN   24700
**  Fill from Cypress Creek at priority
WRB10170                19421130   1                                  60404582004    4582 ELLISON
WSELLISN   24700
SO                 26000  B10150
**
**  Miscellaneous impoundments on Barnes Cr etc.
**
WR458232       0   OTHER19720508                                      60404582303    4582  barnes
WSBARNES   24000  0.4012   0.856       0
WR458232       0   OTHER19720508                                           4582BU    4582  barnes
WSBARNES   24000
SO                        458237   BACKUP
**
**
WRB10120    38.3     IRR19620731   1                                  60404583301
WSB10120    4.79   0.979  0.5841       0
WRB10110    14.2     IRR19480930   1                                  60404584301
WSB10110      60   0.979  0.5841       0
WRB10100    0.56     IRR19550331   1                                  60404585301
WSB10100      50   0.979  0.5841       0
```

```
WRB10090       1     IRR19641231   1                                      60404586301
WSB10090      12   0.979  0.5841       0
WRB10080     150     IRR19561231   1                                      60404587301
WSSIMPSN    2500  0.4012   0.856       0
**
**
**
**  Wilkes Reservoir (aka Johnson Reservoir)
WRB10070    6668     IND19600504   1                                      60404588301    4588
WSJOHNSN   10100
**
WRB10070       0     REC19600504   1                                      60404588302    4588
WSJOHNSN   10100
**
**
WRB10050       0     REC19751208   1                                      60404589301
WSB10050     240   0.979  0.5841       0
**
**
**  Lake O'the Pines
** ==============================================================================
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040   40070     MUN19570916   1                                             1MUN    4590  FYLOTP
WSLKOPNS  251000      -1
WRB10040  151800     IND19570916   1                                             2IND    4590  FYLOTP
WSLKOPNS  251000
** ==============================================================================
**
WRF10250       8     IRR19670430   1                                1     60404591301
WSF10250       6   0.979  0.5841       0
WRF10230   96.88     IRR19690930   1                                1     60404592001
WRF10240      85     IRR19620531   1                                1     60404593301
WSF10240     100   0.979  0.5841       0
WRF10220    1080     IRR19550103   1                                1     60404594002
WRF10210    2000     MUN19630218   1                                1     60404595001
WRF10190   80.21     IRR19570319   1                                1     60404596001
WRC10040      25     IRR19760621   1                                      60404597301
WSC10040      35   0.979  0.5841       0
```

cyp03_pit129-GR20wTOwFS1200

WRC10030	10		IND19700126	1			60404598301	
WSC10030	5	0.979	0.5841		0			
WRC10010	47		IRR19530731	1			60404599001	
WSC10010	7	0.979	0.5841		0			
SO	40.42	47						
WRF10170	62.5		IRR19660630	1		1	60404600001	
WRD10090	0		REC19461121	1			60404601301	
WSD10090	135	0.979	0.5841		0			
WRD10080	0		REC19600211	1			60404602301	
WSD10080	1414	0.4012	0.856		0			
WRD10070	0		REC19730312	1			60404603301	
WSELWOOD	116	0.979	0.5841		0			
WRD10060	7.03		IRR19670630	1			60404604301	
WSD10060	28	0.979	0.5841		0			
WRD10030	0		REC19741209	1			60404605301	4605
WSD10030	36	0.979	0.5841		0			
WRD10040	0		REC19741209	1			60404605302	4605
WSD10040	114	0.979	0.5841		0			
WRD10020	0		REC19740812	1			60404606301	
WSD10020	294	0.979	0.5841		0			
WRD10010	0		REC19740812	1			60404607301	
WSD10010	330	0.979	0.5841		0			
WRE10070	18.2		IRR19520630	1			60404608301	
WSE10070	20	0.979	0.5841		0			
WRE10060	15		IND19680318	1			60404609001	4609
WSE10060	4.8	0.979	0.5841		0			
WRE10050	225		IND19821206	1			60404609301	4609
WSE10050	228.2	0.979	0.5841		0			
WRE10040	122		IRR19551010	1			60404610001	
WRE10010	955		IND19430701	1			60404611301	
WSHOLMES	744	0.4012	0.856		0			
WRF10160	46.58		IRR19550323	1		1	60404612001	
WRF10140	165.21		MIN19690224	1		1	60404613001	
WRF10130	7558		MUN19470418	1		1	60404614001	4614
WRF10130	8442		MUN19561127	1		1	60404614002	4614
WRF10120	10		IRR19751215	1		1	60404615301	
WSF10120	54	0.979	0.5841		0			
WRF10110	0		REC19690811	1		1	60404616301	

WSSHADOW	1325	0.4012	0.856		0			
WRF10030	0		REC19720207	1		1	60404617301	
WSLINDEN	112	0.979	0.5841		0			
WRF10020	42		IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979	0.5841		0			
WRF10020	51		IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979	0.5841		0			
WR 10050	0		REC19760524	1			60404619301	
WS 10050	184	0.979	0.5841		0			
WR 10040	0		REC19781016	1			60404620301	
WS 10040	600	0.4012	0.856		0			
WR 10020	0		REC19470922	1			60404621301	
WS 10020	160	0.979	0.5841		0			
WRD10120	0		REC19860404	1			10405054301	
WSD10120	550	0.979	0.5841		0			
WRC10050	0		REC19860729	1			10405080301	
WSC10050	300	0.979	0.5841		0			
WRF10100	0		REC19861125	1		1	10405112301	
WSF10100	277	0.979	0.5841		0			
WRA10280	0		IND19880121	1			10405167301	
WSPONDH1	477	0.979	0.5841		0			
WRB10300	0		IRR19890112	1			10405212301	
WSB10300	0.09	0.979	0.5841		0			
WRB10260	0		IRR19890810	1			10405251301	
WSB10260	86	0.979	0.5841		0			
IFD10110	1025.6		CONST19891214	1	1	IF5272		
**								
WRD10110	6180		MUN19891214	1			10405272301	5272
WSLKGILM	12720							
WRD10110	0		REC19891214	1			10405272302	5272
WSLKGILM	12720							
WRF10090	0		REC19900710	1		1	10405302301	
WSF10090	80	0.979	0.5841		0			
WRA10260	0		IND19950522	1			10405529301	
WSPONDH4	173.7	0.979	0.5841		0			
WRE10080	0		REC19950801	1			10405537301	
WSE10080	296	0.979	0.5841		0			
WRE10090	34		IRR19980320	1			10405608301	5608

```
WSE10090    55.6   0.979  0.5841       0
WRE10090       0     REC19980320    1                             10405608302    5608
WSE10090    55.6   0.979  0.5841       0
**  This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005       0   OTHER99999999    1                             60409999301    9999
WS CADDO  125000
**  This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005   40000     MUN99999999    1                             60409999302    9999
WS CADDO  165000
**
**   Storage-Area Tables
**
SVLKMONT       0    1000    2000    5500    9500   14000   22500   30000   40000   55000   70000   97000
SALKMONT       0     175     350     700     975    1150    1475    1725    2000    2525    3100    3675
SVBOBSAN       0       0    5000   17500   35000   57500   87500  155000  190000  270000  350000
SABOBSAN       0     300    1100    2300    3400    4450    5600    8000    8950   10750   12350
**
SVJOHNSN       0     150     700    1400    2400    3900    5700    7800    9600   12600   15800   18000
SAJOHNSN       0      50     110     170     245     340     445     550     650     790     900     950
SVLKCYPS       0    3000    6000   11000   20000   30000   47000   72000   92000  120000  186000
SALKCYPS       0     500     750    1100    1600    2100    2700    3450    4150    5100    7150
SVELLISN       0    3500    6000    7500    9250   11750   15500   20500   27500   36500   47000
SAELLISN       0     500     580     660     780     920    1090    1340    1620    1860    2200
SVLKOPNS       0      50     400    6000   18000   36000   74000  130000  200000  259000
SALKOPNS       0      50     500    1000    3000    6000    9500   12750   16250   18500
SV CADDO       0   10000   35000   70000  140000  235000  370000  560000  865000
SA CADDO       0    8500   15000   20500   27750   34500   42250   51500   64250
SV WELSH       0     500    2600    4000    8200   12000   17400   20000   30100   36000   40000   44600
SA WELSH       0     130     370     470     710     890    1130    1230    1600    1740    1865    1930
SVLKGILM       0     670    2470    4980    8230   12270   17270   23420   30860
SALKGILM       0     285     430     570     720     895    1100    1350    1630
**
** Carollo add additional SVSA curve for Pit 129.
SVPIT129       4     231     629     944    1306    1766    2365    3072    4266    4744    5876    6810
SAPIT129       2      23      30      34      39      54      67      75      86     102     125     143
**
**  Drought Indices
** The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of
```

```
** Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this
** limitation.  However, Texas' currently authorized diversions do not exceed this consumptive use
limitation.
** Therefore, this DI record is only included as a place holder.
**
DI     1       1   CADDO
IS     4       0  125000  125001  865000
IP           100     100     100     100
**
**  Streamflow And Evaporation Records
**
ED
```

cyp03_pit129.DIS

```
**
** Carollo add additional CPs for 1 reservoir (pit 129) ad flow analyses.
FD585100  A10000       0
WP585100 1.40313
FDTCUSBC  A10000       0
WPTCUSBC 35.3043
FDPPDISC  A10000       0
WPPPDISC 21.8636
**
**TXU app 5850, 6/24/05, kb
** TXU MINING add additional CPs for 13 diversion and 7 reservoirs
FD585008  A10000       0
WP585008  5.0368
FD585037  A10000       0
WP585037  0.4791
FD585009  A10000       0
WP585009  1.1166
FD585010  A10000       0
WP585010  1.2373
FD585031  A10000       0
WP585031  0.4284
FD585007  A10000       0
WP585007  0.2604
FD585006  A10000       0
WP585006  2.8062
FD585036  A10000       0
WP585036  0.4570
FD585034  A10000       0
WP585034  0.5905
FD585033  A10000       0
WP585033  2.9988
FD585035  A10000       0
WP585035  0.6235
FD585032  A10000       0
WP585032  4.2301
```

```
FD585005  A10000       0
WP585005  5.8348
FD585004  A10000       0
WP585004  0.1356
FD585003  A10000       0
WP585003  1.9687
FD585002  A10000       0
WP585002  0.1512
FD585001  A10000       0
WP585001  0.1708
FD585011  A10000       0
WP585011  2.2375
FD585012  A10000       0
WP585012  2.6298
FD585013  A10000       0
WP585013  1.0074
**
**  Flow Distribution and Coefficients for all nine scenarios
** ADD ADDITIONAL CPS FOR A5814
FD581431  A10000       0
WP581431    .855
FD581432  A10000       0
WP581432    .930
FD581433  A10000       0
WP581433    .401
** ADD ADDITIONAL CPS FOR A5813
FD581301  D10000       0
WP581301   7.151
**
FD581302  D10000       0
WP581302   0.303
**
FD581303  D10000       0
WP581303   2.545
**
```

```
** ADD ADDITIONAL CPS FOR BARNES CREEK WATERSHED
FD458232  B10000       0  A10000
WP458232   3.364
**
FD458237  B10000       0  A10000
WP458237    .227
**
FDA10370  A10000       0
FDA10350  A10000       0
FDA10340  A10000       0
FDA10300  A10000       0
FDA10290  A10000       0
FDA10280  A10000       0
FDA10260  A10000       0
FDA10240  A10000       0
FDA10200  A10000       0
FDA10120  A10000       0
FDA10100  A10000       0
FDA10090  A10000       0
FDA10070  A10000       0
FDA10060  A10000       0
FDA10050  A10000       0
FDA10040  A10000       0
FDA10030  A10000       0
FDA10020  A10000       0
FDA10010  A10000       0
FDB10320  B10000       0  A10000
FDB10310  B10000       0  A10000
FDB10300  B10000       0  A10000
FDB10290  B10000       0  A10000
FDB10270  B10000       0  A10000
FDB10260  B10000       0  A10000
FDB10250  B10000       0  A10000
FDB10230  B10000       0  A10000
FDB10220  B10000       0  A10000
```

FDB10210	B10000	0	A10000
FDB10200	B10000	0	A10000
FDB10180	B10000	0	A10000
FDB10170	B10000	0	A10000
FDB10150	B10000	1	A10000
FDB10120	B10000	0	A10000
FDB10110	B10000	0	A10000
FDB10100	B10000	0	A10000
FDB10090	B10000	0	A10000
FDB10080	B10000	0	A10000
FDB10070	B10000	0	A10000
FDB10050	B10000	0	A10000
FDB10040	B10000	1	A10000
FDC10050	C10000	0	
FDC10040	C10000	0	
FDC10030	C10000	0	
FDC10010	C10000	0	
FDD10190	D10000	0	
FDD10180	D10000	0	
FDD10170	D10000	0	
FDD10160	D10000	0	
FDD10150	D10000	0	
FDD10140	D10000	0	
FDD10130	D10000	0	
FDD10120	D10000	0	
FDD10110	D10000	0	
FDD10090	D10000	0	
FDD10080	D10000	0	
FDD10070	D10000	0	
FDD10060	D10000	0	
FDD10050	D10000	0	
FDD10030	D10000	0	
FDD10040	D10000	0	
FDD10020	D10000	0	
FDD10010	D10000	0	

```
FDE10090  E10000       0  D10000
FDE10080  E10000       0  D10000
FDE10070  E10000       0  D10000
FDE10060  E10000       1  D10000
FDE10050  E10000       0  D10000
FDE10040  E10000       1  D10000
FDE10020  E10000       0  D10000
FDE10010  E10000       0  D10000
FDF10250  F10000       0  B10000  C10000  E10000
FDF10240  F10000       0  B10000  C10000  E10000
FDF10230  F10000       1  B10000  C10000  E10000
FDF10220  F10000       1  B10000  C10000  E10000
FDF10210  F10000       1  B10000  C10000  E10000
FDF10190  F10000       1  B10000  C10000  E10000
FDF10180  F10000       1  C10000  B10000  E10000
FDF10170  F10000       1  C10000  B10000  E10000
FDF10160  F10000       1  E10000  B10000  C10000
FDF10140  F10000       0  B10000  C10000  E10000
FDF10130  F10000       3  B10000  C10000  E10000
FDF10120  F10000       0  B10000  C10000  E10000
FDF10110  F10000       0  B10000  C10000  E10000
FDF10100  F10000       0  B10000  C10000  E10000
FDF10090  F10000       0  B10000  C10000  E10000
FDF10080  F10000       3  B10000  C10000  E10000
FDF10030  F10000       0  B10000  C10000  E10000
FDF10020  F10000       0  B10000  C10000  E10000
FDF10005  F10000       3  B10000  C10000  E10000
FD 10050  F10000       0  B10000  C10000  E10000
FD 10040  F10000       0  B10000  C10000  E10000
FD 10020  F10000       0  B10000  C10000  E10000
FD 10010  F10000       0  B10000  C10000  E10000
**
**  Watershed Parameters
**
WPA10370  6.8736   72.93   43.42
```

WPA10350	0.705	32.78	44.21
WPA10340	74.0257	65.96	43.92
WPA10300	165.78	68.53	43.83
WPA10290	3.8945	68.95	45.12
WPA10280	0.8391	69.57	45.12
WPA10260	2.4997	62.95	45.24
WPA10240	36.26	71.65	45.28
WPA10200	240.042	70.22	44.26
WPA10120	8.6031	69.44	46.42
WPA10100	0.149	65.79	46.3
WPA10090	0.8048	69.67	46.51
WPA10070	3.6154	62.41	46.49
WPA10060	0.4779	70.53	46.57
WPA10050	0.0784	79.65	46.54
WPA10040	0.1014	66.97	46.46
WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10150	682.23	69.54	44.98
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79

cyp03_pit129.DIS

WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10000	885.97	68.96	45.11
WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99
WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	7.1486	67.87	45.01
WPD10040	0.7809	64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69

WPE10050	0.4741	57.7	46.38
WPE10040	594.00	65.86	44.86
WPE10020	0.4527	65.03	47.46
WPE10010	9.9421	61.84	47.5
WPE10000	691.28	65.25	45.16
WPF10250	0.1139	68.6	46.67
WPF10240	1.0911	58.52	46.67
WPF10230	927.86	68.58	45.18
WPF10220	940.39	68.52	45.2
WPF10210	941.34	68.52	45.2
WPF10190	947.39	68.51	45.21
WPF10180	371.10	64.64	46.75
WPF10170	388.06	64.64	46.75
WPF10160	709.18	65.26	45.21
WPF10140	5.7082	64.03	47.1
WPF10130	2080.13	66.58	45.53
WPF10120	0.4119	55.16	47.76
WPF10110	2.9505	63.56	47.78
WPF10100	1.0985	61.45	47.81
WPF10090	0.3736	55	47.8
WPF10080	2158.50	66.53	45.62
WPF10030	1.1542	61.58	47.74
WPF10020	304.96	61.15	47.59
WPF10005	2791.60	66.21	46.08
WPF10000	2791.60	66.21	46.08
WP 10050	0.8384	75.04	47.24
WP 10040	3.8182	74.8	47.25
WP 10020	0.5407	67.2	47.12
WP 10010	105.81	34.29	47.2
WPSABINE	100	100	100
WPSULPHR	100	100	100
WPA240DM	100	100	100
WPB270DM	100	100	100
WPB70DUM	100	100	100
WPB20MUN	100	100	100

WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
**WPQAD412	100	100	100
**WPQAD413	100	100	100
**WPQAD512	100	100	100
**WP 513	100	100	100

ED

Cyp03_pit129.EVA

EVA10200	1948	0.129	0.151	0.019	0.073	0.032	0.442	0.244	0.375	0.467	0.225	-0.059	0.051
EVB10170	1948	0.015	0.061	0.138	0.068	-0.067	0.421	0.235	0.315	0.386	0.217	-0.155	0.031
EVB10070	1948	-0.016	0.053	0.162	0.070	-0.081	0.417	0.246	0.297	0.370	0.216	-0.186	0.023
EVF10005	1948	-0.037	0.069	0.204	0.076	-0.056	0.413	0.273	0.299	0.364	0.249	-0.219	0.027
EVA10340	1948	0.164	0.185	-0.004	0.076	0.075	0.447	0.252	0.401	0.493	0.243	-0.034	0.063
EVA10240	1948	0.142	0.163	0.009	0.074	0.046	0.444	0.247	0.383	0.477	0.229	-0.049	0.055
EVb10040	1948	-0.024	0.059	0.177	0.072	-0.072	0.415	0.256	0.297	0.368	0.228	-0.198	0.025
EVB10270	1948	0.075	0.104	0.066	0.069	-0.024	0.433	0.235	0.342	0.428	0.210	-0.101	0.038
EV 513	1948	-0.050	0.080	0.230	0.080	-0.040	0.410	0.290	0.300	0.360	0.270	-0.240	0.030
EVQAD412	1948	0.350	0.400	-0.240	0.100	0.280	0.490	0.320	0.480	0.650	0.250	0.100	0.080
EVQAD413	1948	0.050	0.000	0.030	0.050	-0.160	0.430	0.160	0.290	0.390	0.110	-0.080	0.010
EVQAD512	1948	0.100	0.080	0.170	0.060	0.020	0.420	0.210	0.420	0.420	0.310	-0.080	0.090
EVA10200	1949	-0.366	0.055	-0.057	-0.007	0.125	0.281	0.089	0.480	0.368	0.024	0.214	-0.027
EVB10170	1949	-0.427	0.040	-0.034	-0.007	0.191	0.080	0.007	0.462	0.352	-0.073	0.320	-0.068
EVB10070	1949	-0.427	0.033	-0.040	-0.009	0.187	0.049	-0.049	0.428	0.330	-0.094	0.326	-0.080
EVF10005	1949	-0.423	0.031	-0.034	-0.034	0.189	0.086	-0.086	0.398	0.318	-0.165	0.341	-0.080
EVA10340	1949	-0.472	0.062	-0.079	-0.043	0.172	0.326	0.142	0.542	0.395	-0.077	0.297	-0.031
EVA10240	1949	-0.469	0.057	-0.079	-0.032	0.171	0.274	0.115	0.528	0.384	-0.064	0.297	-0.040
EVB10040	1949	-0.425	0.033	-0.038	-0.018	0.187	0.062	-0.062	0.417	0.326	-0.120	0.331	-0.080

EVB10270	1949	-0.450	0.047	-0.062	-0.011	0.178	0.152	0.054	0.493	0.364	-0.050	0.305	-0.059
EVQAD412	1949	-0.580	0.070	-0.230	-0.100	0.100	0.650	0.160	0.550	0.370	-0.120	0.260	-0.020
EVQAD413	1949	-0.440	0.040	-0.060	0.070	0.180	-0.070	0.070	0.520	0.370	0.130	0.280	-0.080
EVQAD512	1949	-0.380	0.080	0.080	-0.040	0.250	0.270	0.280	0.620	0.480	-0.100	0.330	0.010
EV 513	1949	-0.420	0.030	-0.030	-0.050	0.190	0.110	-0.110	0.380	0.310	-0.210	0.350	-0.080
EVA10200	1950	0.054	0.065	0.127	0.022	0.040	0.250	0.121	0.420	-0.063	0.246	0.119	0.159
EVB10170	1950	0.004	0.045	0.157	0.019	0.013	0.261	0.116	0.476	-0.211	0.218	0.136	0.168
EVB10070	1950	-0.003	0.047	0.153	0.027	0.003	0.250	0.106	0.463	-0.237	0.207	0.127	0.157
EVF10005	1950	-0.007	0.031	0.157	0.023	0.019	0.244	0.133	0.473	-0.214	0.203	0.111	0.147
EVA10340	1950	0.048	0.035	0.136	-0.009	0.080	0.236	0.153	0.473	-0.107	0.250	0.169	0.192
EVA10240	1950	0.041	0.042	0.135	-0.001	0.063	0.236	0.136	0.464	-0.137	0.243	0.167	0.188
EVB10040	1950	-0.005	0.041	0.155	0.025	0.009	0.248	0.116	0.467	-0.229	0.205	0.121	0.153
EVB10270	1950	0.022	0.051	0.143	0.013	0.028	0.246	0.112	0.461	-0.193	0.228	0.154	0.178
EVQAD412	1950	0.110	0.050	0.060	-0.020	0.150	0.120	0.140	0.370	-0.060	0.260	0.210	0.190
EVQAD413	1950	0.010	0.100	0.140	0.040	-0.050	0.270	0.020	0.430	-0.310	0.220	0.180	0.190
EVQAD512	1950	0.020	-0.020	0.220	-0.040	0.100	0.360	0.260	0.630	0.010	0.280	0.140	0.220
EV 513	1950	-0.010	0.020	0.160	0.020	0.030	0.240	0.150	0.480	-0.200	0.200	0.100	0.140
EVA10200	1951	-0.131	-0.015	0.113	0.023	0.124	0.166	0.147	0.376	-0.046	0.160	0.033	-0.009
EVB10170	1951	-0.208	-0.024	0.080	0.021	0.143	-0.026	0.148	0.333	-0.132	0.129	0.038	-0.072

EVB10070	1951	-0.233	-0.020	0.055	0.019	0.160	-0.042	0.136	0.307	-0.141	0.136	0.030	-0.102
EVF10005	1951	-0.243	-0.014	0.015	0.056	0.166	0.008	0.151	0.297	-0.116	0.163	0.036	-0.132
EVA10340	1951	-0.146	-0.041	0.115	0.060	0.115	0.165	0.178	0.409	-0.113	0.135	0.083	0.000
EVA10240	1951	-0.160	-0.039	0.112	0.043	0.124	0.122	0.165	0.393	-0.127	0.128	0.073	-0.011
EVB10040	1951	-0.237	-0.018	0.040	0.032	0.162	-0.024	0.141	0.303	-0.132	0.146	0.032	-0.113
EVB10270	1951	-0.190	-0.033	0.101	0.017	0.138	0.024	0.146	0.357	-0.143	0.121	0.050	-0.042
EVQAD412	1951	-0.140	-0.060	0.090	0.080	0.150	0.440	0.150	0.440	-0.160	0.150	0.130	0.020
EVQAD413	1951	-0.200	-0.040	0.180	-0.100	0.140	-0.200	0.090	0.340	-0.220	0.050	0.010	-0.010
EVQAD512	1951	-0.070	-0.030	0.160	0.130	0.030	0.110	0.280	0.470	0.010	0.150	0.090	0.050
EV 513	1951	-0.250	-0.010	-0.010	0.080	0.170	0.040	0.160	0.290	-0.100	0.180	0.040	-0.150
EVA10200	1952	-0.056	-0.105	-0.015	-0.042	0.026	0.389	0.233	0.360	0.455	0.275	-0.282	-0.151
EVB10170	1952	-0.110	-0.155	-0.059	-0.073	0.031	0.384	0.271	0.353	0.445	0.250	-0.333	-0.192
EVB10070	1952	-0.120	-0.159	-0.057	-0.066	0.037	0.386	0.267	0.339	0.434	0.243	-0.318	-0.183
EVF10005	1952	-0.126	-0.178	-0.047	-0.075	0.027	0.395	0.257	0.358	0.425	0.241	-0.264	-0.181
EVA10340	1952	-0.081	-0.163	-0.056	-0.094	0.004	0.385	0.244	0.398	0.479	0.276	-0.312	-0.227
EVA10240	1952	-0.086	-0.158	-0.059	-0.086	0.012	0.384	0.249	0.382	0.473	0.271	-0.325	-0.220
EVB10040	1952	-0.122	-0.166	-0.053	-0.069	0.033	0.389	0.263	0.346	0.431	0.243	-0.299	-0.183
EVB10270	1952	-0.100	-0.151	-0.062	-0.074	0.028	0.382	0.262	0.355	0.458	0.259	-0.343	-0.204
EVQAD412	1952	-0.070	-0.180	-0.050	-0.090	-0.010	0.390	0.170	0.390	0.500	0.300	-0.250	-0.260

EVQAD413	1952	-0.100	-0.100	-0.090	-0.040	0.070	0.360	0.300	0.280	0.460	0.250	-0.490	-0.190
EVQAD512	1952	-0.060	-0.170	-0.050	-0.140	-0.030	0.390	0.300	0.500	0.490	0.280	-0.310	-0.230
EV 513	1952	-0.130	-0.190	-0.040	-0.080	0.020	0.400	0.250	0.370	0.420	0.240	-0.230	-0.180
EVA10200	1953	-0.081	-0.053	-0.045	-0.017	-0.049	0.391	0.104	0.438	0.414	0.266	-0.012	-0.121
EVB10170	1953	-0.118	-0.063	-0.117	-0.094	0.021	0.369	0.118	0.470	0.397	0.242	0.029	-0.186
EVB10070	1953	-0.137	-0.073	-0.123	-0.114	0.023	0.354	0.090	0.467	0.393	0.240	0.023	-0.199
EVF10005	1953	-0.127	-0.096	-0.127	-0.099	0.027	0.333	0.084	0.457	0.391	0.240	0.021	-0.230
EVA10340	1953	-0.068	-0.084	-0.092	0.014	-0.049	0.395	0.145	0.445	0.417	0.258	0.021	-0.178
EVA10240	1953	-0.085	-0.079	-0.096	-0.011	-0.043	0.392	0.131	0.450	0.414	0.255	0.020	-0.175
EVB10040	1953	-0.133	-0.081	-0.125	-0.109	0.025	0.347	0.088	0.463	0.393	0.240	0.023	-0.210
EVB10270	1953	-0.113	-0.066	-0.107	-0.065	-0.012	0.383	0.116	0.462	0.405	0.248	0.023	-0.174
EVQAD412	1953	-0.090	-0.160	-0.070	0.120	-0.210	0.390	0.040	0.380	0.440	0.280	-0.030	-0.200
EVQAD413	1953	-0.170	0.000	-0.110	-0.160	0.010	0.420	0.110	0.500	0.400	0.240	0.030	-0.100
EVQAD512	1953	0.050	-0.030	-0.090	0.040	0.080	0.420	0.330	0.490	0.410	0.250	0.080	-0.170
EV 513	1953	-0.120	-0.110	-0.130	-0.090	0.030	0.320	0.080	0.450	0.390	0.240	0.020	-0.250
EVA10200	1954	-0.091	0.179	0.234	0.088	-0.142	0.499	0.487	0.627	0.383	-0.156	0.019	-0.042
EVB10170	1954	-0.117	0.204	0.245	0.084	-0.239	0.553	0.548	0.636	0.418	-0.310	-0.013	-0.076
EVB10070	1954	-0.120	0.196	0.233	0.086	-0.258	0.549	0.533	0.601	0.416	-0.281	-0.026	-0.084
EVF10005	1954	-0.114	0.217	0.243	0.119	-0.228	0.574	0.556	0.570	0.431	-0.238	-0.047	-0.063

EVA10340	1954	-0.120	0.245	0.289	0.124	-0.120	0.561	0.617	0.722	0.403	-0.308	0.042	-0.034
EVA10240	1954	-0.123	0.231	0.275	0.110	-0.150	0.550	0.596	0.708	0.399	-0.309	0.037	-0.049
EVB10040	1954	-0.118	0.204	0.237	0.098	-0.247	0.558	0.541	0.590	0.421	-0.266	-0.034	-0.077
EVB10270	1954	-0.124	0.207	0.252	0.085	-0.212	0.541	0.557	0.670	0.402	-0.314	0.015	-0.073
EVQAD412	1954	-0.160	0.260	0.300	0.180	0.000	0.520	0.650	0.750	0.330	-0.180	0.120	-0.020
EVQAD413	1954	-0.140	0.130	0.200	-0.020	-0.350	0.470	0.460	0.700	0.370	-0.420	0.040	-0.150
EVQAD512	1954	-0.060	0.310	0.350	0.140	-0.080	0.660	0.700	0.780	0.500	-0.440	-0.010	0.030
EV 513	1954	-0.110	0.230	0.250	0.140	-0.210	0.590	0.570	0.550	0.440	-0.210	-0.060	-0.050
EVA10200	1955	-0.026	-0.056	0.161	0.079	0.032	0.374	0.237	0.118	0.202	0.227	0.179	0.084
EVB10170	1955	-0.071	-0.106	0.148	0.099	0.031	0.337	0.200	0.000	0.158	0.198	0.247	0.069
EVB10070	1955	-0.083	-0.120	0.156	0.103	0.010	0.323	0.157	-0.023	0.142	0.185	0.227	0.060
EVF10005	1955	-0.093	-0.132	0.189	0.126	-0.002	0.333	0.147	-0.039	0.190	0.243	0.223	0.060
EVA10340	1955	-0.044	-0.075	0.172	0.104	0.072	0.401	0.328	0.070	0.237	0.297	0.290	0.100
EVA10240	1955	-0.049	-0.081	0.162	0.097	0.062	0.385	0.299	0.058	0.206	0.262	0.278	0.093
EVB10040	1955	-0.087	-0.124	0.168	0.111	0.006	0.327	0.153	-0.029	0.159	0.206	0.225	0.060
EVB10270	1955	-0.061	-0.094	0.146	0.091	0.043	0.352	0.237	0.027	0.158	0.203	0.256	0.078
EVQAD412	1955	-0.040	-0.070	0.230	0.100	0.050	0.450	0.370	0.110	0.250	0.360	0.270	0.120
EVQAD413	1955	-0.050	-0.080	0.050	0.030	0.050	0.290	0.190	0.030	-0.010	0.000	0.240	0.060
EVQAD512	1955	-0.020	-0.050	0.160	0.140	0.150	0.440	0.450	0.100	0.390	0.420	0.380	0.120

EV	513	1955	-0.100	-0.140	0.210	0.140	-0.010	0.340	0.140	-0.050	0.220	0.280	0.220	0.060
EVA10200		1956	0.005	-0.102	0.143	0.095	0.120	0.288	0.389	0.460	0.414	0.191	-0.135	0.028
EVB10170		1956	-0.038	-0.180	0.095	0.067	0.055	0.234	0.378	0.385	0.343	0.130	-0.122	-0.007
EVB10070		1956	-0.043	-0.184	0.053	0.033	0.031	0.193	0.317	0.343	0.297	0.100	-0.127	-0.023
EVF10005		1956	-0.053	-0.169	0.051	0.037	0.006	0.209	0.319	0.341	0.299	0.100	-0.129	-0.033
EVA10340		1956	-0.022	-0.130	0.226	0.182	0.162	0.366	0.575	0.553	0.512	0.225	-0.136	0.036
EVA10240		1956	-0.022	-0.142	0.195	0.153	0.148	0.328	0.526	0.517	0.473	0.202	-0.136	0.028
EVB10040		1956	-0.047	-0.179	0.053	0.035	0.022	0.199	0.317	0.343	0.297	0.100	-0.127	-0.027
EVB10270		1956	-0.028	-0.167	0.130	0.096	0.102	0.259	0.428	0.436	0.390	0.154	-0.130	0.008
EVQAD412		1956	0.000	-0.060	0.270	0.230	0.290	0.390	0.640	0.680	0.610	0.260	-0.190	0.050
EVQAD413		1956	-0.010	-0.230	0.060	0.020	0.110	0.140	0.310	0.350	0.290	0.100	-0.120	0.010
EVQAD512		1956	-0.040	-0.140	0.360	0.290	0.110	0.550	0.780	0.620	0.630	0.320	-0.080	0.070
EV	513	1956	-0.060	-0.160	0.050	0.040	-0.010	0.220	0.320	0.340	0.300	0.100	-0.130	-0.040
EVA10200		1957	-0.118	-0.114	-0.141	-0.201	0.065	0.170	0.285	0.304	-0.029	-0.148	-0.176	0.007
EVB10170		1957	-0.191	-0.215	-0.224	-0.431	0.088	0.047	0.240	0.251	-0.110	-0.392	-0.246	0.014
EVB10070		1957	-0.204	-0.240	-0.234	-0.431	0.131	0.017	0.190	0.230	-0.117	-0.438	-0.257	0.016
EVF10005		1957	-0.195	-0.246	-0.219	-0.412	0.216	0.019	0.196	0.236	-0.101	-0.488	-0.253	0.043
EVA10340		1957	-0.138	-0.122	-0.182	-0.281	0.066	0.171	0.420	0.327	-0.105	-0.231	-0.180	0.014
EVA10240		1957	-0.152	-0.140	-0.196	-0.303	0.060	0.143	0.377	0.307	-0.114	-0.253	-0.193	0.006

EVB10040	1957	-0.201	-0.242	-0.229	-0.424	0.161	0.017	0.192	0.232	-0.111	-0.456	-0.255	0.026
EVB10270	1957	-0.179	-0.185	-0.219	-0.372	0.059	0.083	0.287	0.269	-0.122	-0.321	-0.225	0.001
EVQAD412	1957	-0.110	-0.050	-0.170	0.040	0.160	0.260	0.510	0.360	-0.160	-0.080	-0.100	-0.010
EVQAD413	1957	-0.230	-0.220	-0.280	-0.490	-0.140	0.010	0.170	0.210	-0.170	-0.280	-0.270	-0.070
EVQAD512	1957	-0.090	-0.090	-0.120	-0.500	-0.010	0.230	0.570	0.400	0.000	-0.260	-0.190	0.080
EV 513	1957	-0.190	-0.250	-0.210	-0.400	0.270	0.020	0.200	0.240	-0.090	-0.520	-0.250	0.060
EVA10200	1958	-0.005	0.064	0.001	-0.070	0.232	0.109	0.123	0.094	-0.086	0.109	-0.099	0.046
EVB10170	1958	-0.015	0.067	-0.025	-0.151	0.342	-0.039	0.132	-0.010	-0.314	0.034	-0.087	0.075
EVB10070	1958	-0.020	0.060	-0.028	-0.179	0.364	-0.093	0.109	-0.048	-0.378	0.029	-0.094	0.077
EVF10005	1958	-0.014	0.060	0.002	-0.210	0.435	-0.109	0.140	-0.006	-0.453	0.048	-0.073	0.079
EVA10340	1958	-0.009	0.078	-0.004	-0.079	0.317	0.128	0.195	0.140	-0.161	0.081	-0.063	0.043
EVA10240	1958	-0.014	0.074	-0.016	-0.089	0.307	0.092	0.168	0.094	-0.182	0.069	-0.075	0.046
EVB10040	1958	-0.018	0.060	-0.017	-0.190	0.390	-0.099	0.120	-0.033	-0.405	0.036	-0.087	0.077
EVB10270	1958	-0.019	0.067	-0.033	-0.119	0.306	0.012	0.129	0.012	-0.244	0.043	-0.092	0.060
EVQAD412	1958	-0.040	0.060	-0.010	-0.040	0.300	0.200	0.150	0.190	-0.100	0.140	-0.080	-0.030
EVQAD413	1958	-0.040	0.060	-0.120	-0.080	0.140	-0.040	0.010	-0.180	-0.140	-0.030	-0.160	0.070
EVQAD512	1958	0.050	0.120	0.070	-0.060	0.380	0.260	0.390	0.340	-0.100	0.090	0.020	0.100
EV 513	1958	-0.010	0.060	0.020	-0.230	0.480	-0.120	0.160	0.020	-0.500	0.060	-0.060	0.080
EVA10200	1959	0.046	-0.102	0.190	0.086	0.040	0.160	0.037	0.339	0.270	0.058	0.009	-0.115

EVB10170	1959	0.043	-0.142	0.218	0.059	-0.024	0.132	-0.028	0.342	0.211	0.038	0.022	-0.233
EVB10070	1959	0.040	-0.144	0.209	0.047	-0.016	0.155	-0.044	0.346	0.203	0.056	0.007	-0.240
EVF10005	1959	0.046	-0.129	0.228	0.037	-0.031	0.201	-0.035	0.361	0.213	0.077	0.009	-0.246
EVA10340	1959	0.048	-0.128	0.241	0.106	-0.002	0.092	0.035	0.327	0.258	-0.019	0.070	-0.170
EVA10240	1959	0.044	-0.135	0.228	0.099	0.004	0.092	0.019	0.326	0.246	-0.012	0.057	-0.177
EVB10040	1959	0.042	-0.139	0.216	0.043	-0.021	0.172	-0.041	0.351	0.207	0.064	0.007	-0.242
EVB10270	1959	0.040	-0.145	0.213	0.078	-0.001	0.104	-0.014	0.330	0.222	0.012	0.033	-0.205
EVQAD412	1959	0.030	-0.130	0.210	0.150	0.120	0.080	0.070	0.300	0.300	-0.070	0.080	-0.060
EVQAD413	1959	0.020	-0.190	0.150	0.080	0.030	0.010	-0.070	0.300	0.170	-0.010	0.000	-0.220
EVQAD512	1959	0.090	-0.090	0.340	0.100	-0.160	0.100	0.090	0.360	0.280	-0.010	0.130	-0.240
EV 513	1959	0.050	-0.120	0.240	0.030	-0.040	0.230	-0.030	0.370	0.220	0.090	0.010	-0.250
EVA10200	1960	-0.024	0.001	0.173	0.249	0.182	0.222	0.316	0.242	0.052	0.121	0.021	-0.101
EVB10170	1960	-0.036	-0.042	0.188	0.334	0.270	0.144	0.410	0.216	-0.082	0.050	-0.009	-0.260
EVB10070	1960	-0.040	-0.050	0.190	0.336	0.282	0.146	0.426	0.216	-0.109	0.047	-0.032	-0.250
EVF10005	1960	-0.034	-0.056	0.196	0.345	0.324	0.161	0.453	0.231	-0.128	0.049	-0.062	-0.244
EVA10340	1960	-0.036	-0.012	0.179	0.307	0.247	0.174	0.348	0.213	-0.005	0.077	0.061	-0.189
EVA10240	1960	-0.040	-0.017	0.179	0.309	0.241	0.167	0.353	0.209	-0.019	0.072	0.053	-0.194
EVB10040	1960	-0.038	-0.052	0.192	0.339	0.297	0.151	0.436	0.221	-0.116	0.047	-0.043	-0.248
EVB10270	1960	-0.042	-0.030	0.182	0.319	0.244	0.151	0.377	0.207	-0.054	0.059	0.024	-0.224

EVQAD412	1960	-0.070	0.020	0.160	0.250	0.210	0.240	0.260	0.190	0.030	0.120	0.120	0.030
EVQAD413	1960	-0.060	-0.030	0.170	0.310	0.150	0.100	0.340	0.170	-0.050	0.040	0.060	-0.270
EVQAD512	1960	0.020	-0.020	0.200	0.360	0.310	0.140	0.410	0.260	0.040	0.060	0.050	-0.390
EV 513	1960	-0.030	-0.060	0.200	0.350	0.350	0.170	0.470	0.240	-0.140	0.050	-0.080	-0.240
EVA10200	1961	0.063	-0.027	-0.005	0.283	0.160	-0.056	0.102	0.311	0.182	0.149	-0.204	-0.107
EVB10170	1961	0.012	-0.042	-0.081	0.407	0.259	-0.276	0.104	0.308	0.109	0.100	-0.219	-0.169
EVB10070	1961	0.014	-0.043	-0.094	0.422	0.272	-0.324	0.095	0.306	0.090	0.086	-0.224	-0.183
EVF10005	1961	-0.019	-0.041	-0.061	0.470	0.308	-0.401	0.141	0.333	0.084	0.113	-0.215	-0.181
EVA10340	1961	0.004	-0.047	0.010	0.368	0.214	-0.163	0.148	0.321	0.157	0.170	-0.214	-0.123
EVA10240	1961	0.017	-0.048	-0.016	0.363	0.213	-0.171	0.125	0.310	0.146	0.147	-0.219	-0.135
EVB10040	1961	0.002	-0.043	-0.082	0.439	0.285	-0.352	0.112	0.316	0.088	0.096	-0.221	-0.183
EVB10270	1961	0.028	-0.046	-0.066	0.373	0.227	-0.213	0.093	0.298	0.122	0.108	-0.224	-0.158
EVQAD412	1961	0.050	-0.070	0.090	0.300	0.140	-0.090	0.130	0.300	0.160	0.200	-0.240	-0.110
EVQAD413	1961	0.120	-0.050	-0.200	0.270	0.160	-0.080	-0.050	0.220	0.110	0.000	-0.250	-0.190
EVQAD512	1961	-0.110	-0.020	0.070	0.460	0.290	-0.180	0.290	0.400	0.220	0.260	-0.160	-0.070
EV 513	1961	-0.040	-0.040	-0.040	0.500	0.330	-0.450	0.170	0.350	0.080	0.130	-0.210	-0.180
EVA10200	1962	-0.079	0.021	0.138	0.072	0.300	0.126	0.340	0.449	0.060	-0.038	-0.035	0.053
EVB10170	1962	-0.114	0.028	0.199	0.071	0.390	0.069	0.398	0.504	0.003	-0.099	-0.122	0.039
EVB10070	1962	-0.120	0.039	0.215	0.074	0.380	0.096	0.413	0.509	0.022	-0.096	-0.136	0.030

EVF10005	1962	-0.114	0.082	0.261	0.065	0.380	0.129	0.423	0.534	0.070	-0.025	-0.145	0.018
EVA10340	1962	-0.102	0.031	0.153	0.059	0.399	0.024	0.353	0.481	-0.023	-0.057	-0.017	0.051
EVA10240	1962	-0.108	0.021	0.151	0.064	0.394	0.030	0.361	0.477	-0.027	-0.082	-0.032	0.050
EVB10040	1962	-0.118	0.054	0.232	0.071	0.380	0.108	0.417	0.518	0.039	-0.070	-0.139	0.026
EVB10270	1962	-0.116	0.012	0.163	0.072	0.388	0.047	0.381	0.483	-0.023	-0.116	-0.079	0.046
EVQAD412	1962	-0.120	0.040	0.080	0.060	0.360	0.040	0.330	0.420	-0.030	-0.040	0.150	0.040
EVQAD413	1962	-0.140	-0.100	0.070	0.100	0.380	-0.010	0.380	0.430	-0.130	-0.320	-0.110	0.070
EVQAD512	1962	-0.050	0.070	0.240	0.030	0.470	-0.030	0.330	0.560	0.000	0.060	-0.110	0.070
EV 513	1962	-0.110	0.110	0.290	0.060	0.380	0.150	0.430	0.550	0.100	0.020	-0.150	0.010
EVA10200	1963	0.033	0.124	0.141	-0.002	0.177	0.316	0.132	0.440	0.351	0.409	-0.004	-0.037
EVB10170	1963	0.023	0.131	0.161	-0.081	0.283	0.294	0.179	0.419	0.289	0.437	-0.025	-0.100
EVB10070	1963	0.017	0.127	0.168	-0.090	0.305	0.299	0.162	0.399	0.267	0.436	-0.037	-0.116
EVF10005	1963	0.019	0.123	0.224	-0.096	0.345	0.318	0.198	0.418	0.251	0.451	-0.039	-0.125
EVA10340	1963	0.036	0.140	0.181	-0.017	0.218	0.296	0.204	0.506	0.361	0.452	0.032	-0.044
EVA10240	1963	0.031	0.139	0.164	-0.025	0.222	0.292	0.182	0.482	0.349	0.446	0.022	-0.055
EVB10040	1963	0.017	0.125	0.188	-0.092	0.320	0.306	0.175	0.406	0.261	0.441	-0.037	-0.119
EVB10270	1963	0.024	0.135	0.144	-0.054	0.246	0.288	0.160	0.436	0.317	0.436	-0.005	-0.081
EVQAD412	1963	0.020	0.140	0.190	0.090	0.150	0.310	0.100	0.560	0.410	0.460	0.100	-0.010
EVQAD413	1963	0.010	0.140	-0.010	-0.070	0.180	0.240	0.050	0.340	0.320	0.390	-0.030	-0.090

EVQAD512	1963	0.080	0.150	0.260	-0.080	0.260	0.300	0.430	0.580	0.380	0.480	0.020	-0.020
EV 513	1963	0.020	0.120	0.260	-0.100	0.370	0.330	0.220	0.430	0.240	0.460	-0.040	-0.130
EVA10200	1964	0.052	-0.017	0.001	-0.077	0.163	0.416	0.434	0.144	0.044	0.283	-0.016	0.005
EVB10170	1964	0.037	-0.031	-0.008	-0.095	0.220	0.418	0.474	0.086	0.012	0.305	0.006	-0.066
EVB10070	1964	0.030	-0.034	-0.010	-0.098	0.227	0.420	0.449	0.053	0.022	0.303	0.013	-0.103
EVF10005	1964	0.018	-0.025	0.002	-0.050	0.229	0.426	0.468	0.069	0.076	0.307	0.023	-0.126
EVA10340	1964	0.041	-0.026	-0.017	-0.052	0.190	0.417	0.567	0.173	-0.008	0.292	-0.006	0.038
EVA10240	1964	0.042	-0.031	-0.021	-0.073	0.195	0.416	0.540	0.143	-0.019	0.291	-0.005	0.018
EVB10040	1964	0.026	-0.031	-0.006	-0.081	0.227	0.422	0.456	0.059	0.041	0.305	0.017	-0.111
EVB10270	1964	0.041	-0.035	-0.020	-0.103	0.209	0.416	0.491	0.095	-0.021	0.295	-0.001	-0.029
EVQAD412	1964	0.030	-0.040	-0.070	-0.040	0.160	0.420	0.600	0.140	-0.070	0.240	0.000	0.080
EVQAD413	1964	0.070	-0.060	-0.050	-0.250	0.220	0.400	0.390	0.000	-0.150	0.290	-0.020	-0.030
EVQAD512	1964	0.050	0.010	0.060	0.050	0.190	0.420	0.680	0.370	0.110	0.350	-0.020	0.110
EV 513	1964	0.010	-0.020	0.010	-0.020	0.230	0.430	0.480	0.080	0.110	0.310	0.030	-0.140
EVA10200	1965	-0.043	-0.111	0.042	0.254	-0.106	0.254	0.446	0.438	0.139	0.274	0.032	-0.018
EVB10170	1965	-0.129	-0.234	-0.015	0.329	-0.216	0.218	0.546	0.437	0.072	0.283	0.087	-0.106
EVB10070	1965	-0.146	-0.240	-0.030	0.346	-0.212	0.206	0.552	0.426	0.070	0.296	0.096	-0.135
EVF10005	1965	-0.161	-0.246	-0.036	0.373	-0.254	0.221	0.600	0.441	0.070	0.311	0.105	-0.181
EVA10340	1965	-0.063	-0.168	0.033	0.297	-0.206	0.256	0.551	0.482	0.072	0.253	0.054	-0.034

EVA10240	1965	-0.073	-0.175	0.023	0.300	-0.192	0.242	0.537	0.468	0.071	0.257	0.058	-0.040
EVB10040	1965	-0.151	-0.242	-0.032	0.356	-0.227	0.211	0.569	0.431	0.070	0.301	0.099	-0.152
EVB10270	1965	-0.102	-0.204	0.001	0.311	-0.186	0.220	0.526	0.443	0.071	0.270	0.073	-0.067
EVQAD412	1965	0.000	-0.040	0.060	0.290	-0.100	0.250	0.530	0.500	0.060	0.240	0.020	0.010
EVQAD413	1965	-0.100	-0.220	-0.010	0.260	-0.080	0.160	0.400	0.380	0.070	0.250	0.070	0.010
EVQAD512	1965	-0.070	-0.260	0.060	0.290	-0.390	0.340	0.640	0.540	0.090	0.240	0.060	-0.040
EV 513	1965	-0.170	-0.250	-0.040	0.390	-0.280	0.230	0.630	0.450	0.070	0.320	0.110	-0.210
EVA10200	1966	-0.111	-0.125	0.251	0.025	0.162	0.493	0.299	0.071	0.124	0.153	0.089	-0.136
EVB10170	1966	-0.164	-0.126	0.273	-0.210	0.312	0.544	0.369	0.013	0.063	0.120	0.107	-0.208
EVB10070	1966	-0.173	-0.114	0.280	-0.195	0.367	0.563	0.378	0.039	0.080	0.119	0.093	-0.221
EVF10005	1966	-0.177	-0.105	0.286	-0.235	0.449	0.579	0.428	0.076	0.092	0.144	0.103	-0.196
EVA10340	1966	-0.148	-0.190	0.262	-0.105	0.171	0.490	0.361	-0.035	0.023	0.142	0.171	-0.141
EVA10240	1966	-0.152	-0.180	0.264	-0.096	0.185	0.499	0.350	-0.031	0.031	0.131	0.155	-0.161
EVB10040	1966	-0.175	-0.111	0.282	-0.210	0.397	0.569	0.396	0.052	0.084	0.128	0.097	-0.212
EVB10270	1966	-0.160	-0.152	0.269	-0.131	0.239	0.522	0.344	-0.013	0.048	0.116	0.122	-0.199
EVQAD412	1966	-0.160	-0.270	0.270	0.290	0.080	0.460	0.330	-0.040	0.020	0.150	0.220	-0.100
EVQAD413	1966	-0.160	-0.140	0.260	-0.070	0.110	0.510	0.220	-0.080	0.040	0.040	0.060	-0.300
EVQAD512	1966	-0.110	-0.160	0.240	-0.560	0.180	0.470	0.450	-0.060	-0.020	0.190	0.210	-0.070
EV 513	1966	-0.180	-0.100	0.290	-0.260	0.500	0.590	0.460	0.100	0.100	0.160	0.110	-0.180

EVA10200	1967	0.095	0.053	0.218	0.007	-0.106	0.407	0.212	0.437	0.146	0.147	0.066	-0.142
EVB10170	1967	0.094	0.044	0.266	-0.027	-0.241	0.436	0.245	0.465	0.116	0.151	0.105	-0.295
EVB10070	1967	0.087	0.040	0.276	-0.024	-0.279	0.441	0.240	0.456	0.156	0.205	0.110	-0.313
EVF10005	1967	0.089	0.046	0.303	-0.009	-0.316	0.514	0.246	0.477	0.177	0.251	0.122	-0.311
EVA10340	1967	0.113	0.064	0.241	-0.004	-0.107	0.474	0.238	0.489	0.009	0.031	0.106	-0.172
EVA10240	1967	0.107	0.057	0.240	-0.009	-0.126	0.449	0.235	0.476	0.031	0.053	0.104	-0.194
EVB10040	1967	0.087	0.042	0.286	-0.019	-0.292	0.467	0.242	0.464	0.164	0.222	0.114	-0.313
EVB10270	1967	0.097	0.047	0.246	-0.022	-0.184	0.417	0.235	0.459	0.081	0.106	0.101	-0.252
EVQAD412	1967	0.110	0.070	0.210	0.050	0.020	0.490	0.180	0.460	-0.020	0.030	0.120	-0.010
EVQAD413	1967	0.080	0.020	0.190	-0.070	-0.160	0.210	0.220	0.390	0.090	0.060	0.070	-0.320
EVQAD512	1967	0.150	0.090	0.280	-0.030	-0.130	0.590	0.320	0.590	-0.090	-0.100	0.100	-0.220
EV 513	1967	0.090	0.050	0.320	0.000	-0.340	0.560	0.250	0.490	0.190	0.280	0.130	-0.310
EVA10200	1968	-0.166	0.045	-0.026	0.055	-0.028	0.086	0.236	0.389	-0.008	0.195	-0.190	0.035
EVB10170	1968	-0.270	0.028	0.049	-0.065	-0.104	0.052	0.272	0.389	-0.173	0.120	-0.246	0.001
EVB10070	1968	-0.302	0.024	0.072	-0.092	-0.073	0.062	0.266	0.373	-0.212	0.103	-0.256	-0.010
EVF10005	1968	-0.350	-0.003	0.120	-0.122	0.015	0.104	0.275	0.389	-0.242	0.113	-0.265	-0.016
EVA10340	1968	-0.216	0.016	-0.059	0.066	-0.037	0.029	0.270	0.440	-0.065	0.207	-0.207	0.037
EVA10240	1968	-0.220	0.024	-0.052	0.049	-0.058	0.022	0.265	0.422	-0.085	0.187	-0.213	0.030
EVB10040	1968	-0.319	0.014	0.089	-0.103	-0.041	0.077	0.269	0.379	-0.223	0.107	-0.259	-0.012

EVB10270	1968	-0.239	0.035	-0.012	-0.007	-0.101	0.025	0.263	0.393	-0.133	0.143	-0.230	0.014
EVQAD412	1968	-0.220	0.000	-0.230	0.240	0.190	-0.020	0.220	0.430	-0.020	0.290	-0.170	0.060
EVQAD413	1968	-0.150	0.110	-0.080	0.000	-0.350	-0.070	0.240	0.320	-0.120	0.070	-0.230	0.010
EVQAD512	1968	-0.180	-0.010	0.080	-0.020	-0.170	0.110	0.350	0.550	0.000	0.230	-0.210	0.050
EV 513	1968	-0.380	-0.020	0.150	-0.140	0.070	0.130	0.280	0.400	-0.260	0.120	-0.270	-0.020
EVA10200	1969	0.021	-0.003	0.041	0.106	0.068	0.416	0.476	0.511	0.274	0.067	-0.071	-0.144
EVB10170	1969	0.003	-0.021	-0.003	0.089	0.104	0.447	0.548	0.518	0.258	0.006	-0.205	-0.242
EVB10070	1969	0.008	-0.032	-0.016	0.078	0.126	0.449	0.536	0.523	0.256	0.016	-0.252	-0.238
EVF10005	1969	0.064	-0.062	-0.049	0.036	0.135	0.480	0.551	0.521	0.265	0.025	-0.306	-0.208
EVA10340	1969	0.048	-0.025	0.001	0.095	0.040	0.450	0.590	0.515	0.252	-0.013	-0.039	-0.191
EVA10240	1969	0.027	-0.021	0.005	0.102	0.054	0.440	0.576	0.519	0.250	-0.009	-0.060	-0.204
EVB10040	1969	0.028	-0.043	-0.028	0.063	0.129	0.460	0.541	0.523	0.259	0.019	-0.271	-0.227
EVB10270	1969	-0.004	-0.014	0.009	0.107	0.084	0.432	0.552	0.522	0.250	0.000	-0.129	-0.232
EVQAD412	1969	0.100	-0.070	-0.020	0.100	0.020	0.420	0.590	0.550	0.220	0.000	0.130	-0.090
EVQAD413	1969	-0.170	0.060	0.090	0.210	0.100	0.350	0.490	0.530	0.230	-0.010	-0.080	-0.330
EVQAD512	1969	0.100	0.000	0.000	0.050	-0.020	0.530	0.670	0.460	0.300	-0.050	-0.090	-0.230
EV 513	1969	0.100	-0.080	-0.070	0.010	0.140	0.500	0.560	0.520	0.270	0.030	-0.340	-0.190
EVA10200	1970	0.077	-0.044	0.113	0.040	0.221	0.291	0.332	0.345	0.193	-0.057	0.043	0.040
EVB10170	1970	0.101	-0.153	0.082	0.019	0.274	0.268	0.292	0.335	0.167	-0.235	0.059	0.017

cyp03_pit129.EVA

EVB10070	1970	0.106	-0.150	0.086	0.016	0.292	0.256	0.244	0.331	0.184	-0.246	0.046	-0.003
EVF10005	1970	0.115	-0.144	0.107	0.037	0.322	0.271	0.217	0.398	0.163	-0.273	0.055	-0.007
EVA10340	1970	0.072	-0.091	0.107	0.062	0.259	0.303	0.437	0.405	0.078	-0.171	0.112	0.068
EVA10240	1970	0.075	-0.098	0.099	0.049	0.260	0.289	0.409	0.375	0.102	-0.174	0.098	0.055
EVB10040	1970	0.109	-0.148	0.094	0.024	0.303	0.261	0.234	0.355	0.177	-0.256	0.049	-0.005
EVB10270	1970	0.087	-0.126	0.085	0.025	0.263	0.268	0.342	0.328	0.149	-0.198	0.071	0.030
EVQAD412	1970	0.030	0.060	0.160	0.110	0.300	0.290	0.510	0.450	0.010	-0.050	0.140	0.070
EVQAD413	1970	0.080	-0.170	0.020	-0.050	0.200	0.210	0.330	0.120	0.250	-0.160	0.020	0.010
EVQAD512	1970	0.100	-0.210	0.090	0.080	0.210	0.390	0.520	0.520	0.020	-0.280	0.160	0.140
EV 513	1970	0.120	-0.140	0.120	0.050	0.340	0.280	0.200	0.440	0.150	-0.290	0.060	-0.010
EVA10200	1971	0.101	0.000	0.229	0.214	0.110	0.489	0.020	0.199	0.260	0.171	0.004	-0.278
EVB10170	1971	0.126	-0.030	0.227	0.240	0.157	0.492	-0.022	0.145	0.226	0.081	-0.026	-0.285
EVB10070	1971	0.123	-0.043	0.216	0.233	0.163	0.480	-0.022	0.127	0.224	0.100	-0.030	-0.261
EVF10005	1971	0.139	-0.041	0.231	0.243	0.186	0.474	0.047	0.129	0.209	0.112	-0.030	-0.236
EVA10340	1971	0.130	0.010	0.283	0.278	0.149	0.526	0.044	0.187	0.209	0.093	0.026	-0.388
EVA10240	1971	0.123	0.000	0.268	0.267	0.145	0.519	0.015	0.174	0.215	0.096	0.019	-0.374
EVB10040	1971	0.129	-0.043	0.221	0.237	0.171	0.478	0.003	0.127	0.219	0.104	-0.030	-0.252
EVB10270	1971	0.117	-0.021	0.238	0.247	0.145	0.503	-0.029	0.152	0.225	0.092	-0.005	-0.330
EVQAD412	1971	0.100	0.020	0.320	0.310	0.130	0.540	0.100	0.170	0.180	0.220	0.120	-0.510

EVQAD413	1971	0.070	-0.050	0.170	0.200	0.090	0.500	-0.240	0.120	0.270	0.060	-0.030	-0.340
EVQAD512	1971	0.200	0.060	0.330	0.300	0.190	0.550	0.140	0.280	0.210	-0.060	-0.030	-0.340
EV 513	1971	0.150	-0.040	0.240	0.250	0.200	0.470	0.090	0.130	0.200	0.120	-0.030	-0.220
EVA10200	1972	-0.038	0.171	0.202	0.206	0.210	0.246	0.299	0.440	0.114	-0.140	-0.176	-0.066
EVB10170	1972	-0.156	0.211	0.207	0.225	0.274	0.158	0.268	0.446	0.057	-0.245	-0.225	-0.136
EVB10070	1972	-0.182	0.210	0.187	0.207	0.276	0.138	0.240	0.446	0.053	-0.257	-0.240	-0.147
EVF10005	1972	-0.230	0.216	0.183	0.191	0.291	0.108	0.240	0.455	0.069	-0.259	-0.228	-0.143
EVA10340	1972	-0.078	0.208	0.254	0.265	0.271	0.213	0.379	0.452	0.067	-0.228	-0.155	-0.082
EVA10240	1972	-0.082	0.206	0.241	0.258	0.268	0.207	0.355	0.449	0.059	-0.235	-0.173	-0.094
EVB10040	1972	-0.199	0.212	0.185	0.201	0.281	0.127	0.240	0.449	0.059	-0.257	-0.236	-0.145
EVB10270	1972	-0.111	0.205	0.218	0.241	0.266	0.186	0.301	0.445	0.050	-0.244	-0.210	-0.120
EVQAD412	1972	0.010	0.180	0.240	0.270	0.260	0.250	0.460	0.460	0.040	-0.260	-0.110	-0.030
EVQAD413	1972	-0.030	0.190	0.200	0.260	0.230	0.230	0.240	0.420	0.000	-0.250	-0.280	-0.160
EVQAD512	1972	-0.140	0.250	0.340	0.300	0.300	0.210	0.430	0.460	0.140	-0.160	-0.100	-0.070
EV 513	1972	-0.260	0.220	0.180	0.180	0.300	0.090	0.240	0.460	0.080	-0.260	-0.220	-0.140
EVA10200	1973	-0.062	0.045	-0.047	-0.084	0.218	0.039	0.216	0.433	-0.130	-0.054	-0.005	0.015
EVB10170	1973	-0.129	0.062	-0.081	-0.061	0.332	-0.074	0.159	0.460	-0.260	-0.248	-0.001	0.016
EVB10070	1973	-0.140	0.069	-0.081	-0.036	0.349	-0.074	0.117	0.459	-0.251	-0.235	-0.014	0.007
EVF10005	1973	-0.152	0.094	-0.038	0.041	0.380	-0.065	0.094	0.484	-0.232	-0.189	0.019	0.009

cyp03_pit129.EVA

EVA10340	1973	-0.097	0.051	-0.051	-0.090	0.275	-0.056	0.282	0.470	-0.274	-0.153	0.078	0.023
EVA10240	1973	-0.101	0.047	-0.069	-0.100	0.278	-0.060	0.258	0.460	-0.274	-0.171	0.053	0.018
EVB10040	1973	-0.144	0.078	-0.066	-0.008	0.360	-0.071	0.109	0.468	-0.244	-0.218	-0.002	0.007
EVB10270	1973	-0.114	0.048	-0.091	-0.100	0.300	-0.070	0.201	0.450	-0.271	-0.221	0.009	0.012
EVQAD412	1973	-0.070	0.030	-0.050	-0.110	0.200	-0.020	0.340	0.450	-0.270	0.090	0.130	-0.020
EVQAD413	1973	-0.100	-0.010	-0.220	-0.280	0.250	-0.100	0.190	0.380	-0.310	-0.380	-0.120	0.000
EVQAD512	1973	-0.100	0.090	0.040	-0.020	0.330	-0.070	0.360	0.540	-0.280	-0.310	0.160	0.100
EV 513	1973	-0.160	0.110	-0.010	0.090	0.400	-0.060	0.080	0.500	-0.220	-0.160	0.040	0.010
EVA10200	1974	-0.139	0.142	0.227	0.143	0.128	0.137	0.370	0.091	-0.208	0.076	-0.124	0.024
EVB10170	1974	-0.233	0.159	0.265	0.207	0.134	0.070	0.387	-0.008	-0.331	0.005	-0.119	0.061
EVB10070	1974	-0.263	0.150	0.266	0.197	0.136	0.057	0.356	-0.017	-0.343	0.000	-0.121	0.066
EVF10005	1974	-0.279	0.150	0.281	0.187	0.151	0.139	0.365	-0.019	-0.341	-0.006	-0.096	0.087
EVA10340	1974	-0.152	0.178	0.260	0.185	0.163	0.180	0.490	0.022	-0.330	0.020	-0.103	0.027
EVA10240	1974	-0.169	0.172	0.256	0.187	0.156	0.137	0.462	0.016	-0.336	0.018	-0.113	0.026
EVB10040	1974	-0.269	0.150	0.271	0.193	0.141	0.087	0.359	-0.017	-0.343	-0.002	-0.112	0.074
EVB10270	1974	-0.206	0.162	0.255	0.196	0.141	0.068	0.410	0.001	-0.340	0.012	-0.126	0.037
EVQAD412	1974	-0.130	0.170	0.230	0.090	0.220	0.240	0.520	0.040	-0.410	0.030	-0.110	-0.050
EVQAD413	1974	-0.210	0.150	0.220	0.230	0.090	-0.200	0.330	-0.010	-0.350	0.020	-0.200	0.000
EVQAD512	1974	-0.080	0.220	0.310	0.280	0.140	0.350	0.610	0.040	-0.210	0.020	-0.040	0.110

EV 513	1974	-0.290	0.150	0.290	0.180	0.160	0.190	0.370	-0.020	-0.340	-0.010	-0.080	0.100
EVA10200	1975	0.074	0.033	0.073	0.120	-0.021	0.171	0.303	0.357	0.316	0.286	-0.003	-0.022
EVB10170	1975	0.068	-0.051	0.080	0.103	0.009	0.110	0.354	0.342	0.299	0.218	-0.001	-0.037
EVB10070	1975	0.054	-0.073	0.070	0.097	0.009	0.094	0.346	0.343	0.303	0.194	-0.023	-0.041
EVF10005	1975	0.039	-0.077	0.070	0.087	0.034	0.079	0.373	0.359	0.319	0.173	-0.021	-0.022
EVA10340	1975	0.087	0.056	0.077	0.133	0.001	0.130	0.379	0.357	0.300	0.304	0.070	-0.020
EVA10240	1975	0.084	0.037	0.073	0.131	-0.006	0.126	0.364	0.351	0.296	0.291	0.052	-0.030
EVB10040	1975	0.049	-0.075	0.070	0.093	0.018	0.089	0.356	0.349	0.309	0.187	-0.023	-0.034
EVB10270	1975	0.076	-0.014	0.072	0.119	-0.008	0.117	0.346	0.340	0.293	0.253	0.016	-0.042
EVQAD412	1975	0.060	0.170	0.010	0.180	-0.050	0.100	0.350	0.370	0.300	0.380	0.090	-0.030
EVQAD413	1975	0.100	-0.060	0.070	0.130	-0.070	0.140	0.260	0.290	0.250	0.260	-0.030	-0.100
EVQAD512	1975	0.140	0.050	0.170	0.100	0.090	0.190	0.490	0.380	0.320	0.300	0.150	0.040
EV 513	1975	0.030	-0.080	0.070	0.080	0.050	0.070	0.390	0.370	0.330	0.160	-0.020	-0.010
EVA10200	1976	0.091	0.098	-0.118	0.059	-0.031	0.132	0.197	0.429	0.044	0.011	0.042	-0.045
EVB10170	1976	0.018	0.087	-0.194	0.098	-0.040	-0.034	0.160	0.385	-0.054	-0.030	0.071	-0.132
EVB10070	1976	-0.006	0.079	-0.217	0.127	-0.040	-0.054	0.141	0.364	-0.051	-0.018	0.060	-0.147
EVF10005	1976	-0.021	0.098	-0.207	0.129	-0.040	-0.045	0.110	0.337	-0.032	0.012	0.066	-0.143
EVA10340	1976	0.119	0.137	-0.127	0.001	-0.044	0.095	0.201	0.445	-0.043	-0.060	0.106	-0.049
EVA10240	1976	0.102	0.122	-0.148	0.023	-0.043	0.070	0.198	0.438	-0.049	-0.061	0.095	-0.066

EVB10040	1976	-0.011	0.086	-0.213	0.127	-0.040	-0.051	0.130	0.354	-0.044	-0.007	0.062	-0.145
EVB10270	1976	0.057	0.095	-0.184	0.071	-0.042	0.008	0.183	0.414	-0.057	-0.052	0.076	-0.106
EVQAD412	1976	0.220	0.180	-0.130	-0.050	-0.050	0.260	0.220	0.490	-0.020	-0.090	0.110	0.040
EVQAD413	1976	0.040	0.020	-0.250	0.120	-0.040	-0.080	0.240	0.450	-0.110	-0.110	0.040	-0.160
EVQAD512	1976	0.110	0.170	-0.010	-0.070	-0.040	0.060	0.200	0.440	-0.040	-0.030	0.160	-0.050
EV 513	1976	-0.030	0.110	-0.200	0.130	-0.040	-0.040	0.090	0.320	-0.020	0.030	0.070	-0.140
EVA10200	1977	-0.077	0.055	0.033	0.174	0.250	0.284	0.350	0.250	0.258	0.286	-0.167	0.093
EVB10170	1977	-0.109	0.061	0.009	0.293	0.338	0.232	0.360	0.167	0.188	0.273	-0.176	0.066
EVB10070	1977	-0.114	0.066	0.009	0.323	0.340	0.233	0.333	0.141	0.173	0.273	-0.174	0.053
EVF10005	1977	-0.105	0.087	0.040	0.346	0.346	0.231	0.331	0.104	0.183	0.277	-0.147	0.057
EVA10340	1977	-0.101	0.060	0.032	0.175	0.317	0.241	0.444	0.223	0.258	0.284	-0.164	0.124
EVA10240	1977	-0.106	0.055	0.020	0.193	0.318	0.241	0.424	0.217	0.241	0.281	-0.173	0.111
EVB10040	1977	-0.111	0.074	0.020	0.331	0.342	0.233	0.333	0.128	0.177	0.275	-0.164	0.055
EVB10270	1977	-0.113	0.052	0.003	0.245	0.326	0.238	0.382	0.196	0.205	0.276	-0.184	0.082
EVQAD412	1977	-0.120	0.060	0.040	0.050	0.270	0.270	0.470	0.240	0.310	0.300	-0.160	0.170
EVQAD413	1977	-0.140	0.000	-0.090	0.250	0.320	0.240	0.340	0.260	0.140	0.260	-0.260	0.040
EVQAD512	1977	-0.050	0.080	0.090	0.200	0.360	0.210	0.530	0.240	0.300	0.280	-0.120	0.150
EV 513	1977	-0.100	0.100	0.060	0.360	0.350	0.230	0.330	0.080	0.190	0.280	-0.130	0.060
EVA10200	1978	-0.137	-0.018	0.058	0.214	0.095	0.430	0.487	0.488	0.299	0.330	-0.371	-0.078

EVB10170	1978	-0.242	-0.015	0.058	0.275	0.135	0.446	0.494	0.456	0.216	0.281	-0.414	-0.146
EVB10070	1978	-0.263	-0.004	0.059	0.276	0.137	0.453	0.481	0.447	0.207	0.264	-0.422	-0.167
EVF10005	1978	-0.273	0.011	0.084	0.297	0.139	0.463	0.456	0.431	0.197	0.255	-0.359	-0.169
EVA10340	1978	-0.168	-0.049	0.059	0.278	0.115	0.430	0.553	0.501	0.269	0.359	-0.355	-0.078
EVA10240	1978	-0.182	-0.045	0.051	0.271	0.118	0.431	0.549	0.497	0.263	0.346	-0.385	-0.094
EVB10040	1978	-0.267	0.001	0.068	0.284	0.137	0.457	0.472	0.441	0.203	0.261	-0.400	-0.167
EVB10270	1978	-0.216	-0.031	0.046	0.265	0.126	0.437	0.526	0.480	0.240	0.310	-0.426	-0.127
EVQAD412	1978	-0.110	-0.080	0.030	0.260	0.080	0.420	0.640	0.570	0.350	0.440	-0.360	-0.050
EVQAD413	1978	-0.230	-0.050	-0.020	0.210	0.130	0.420	0.560	0.500	0.240	0.290	-0.620	-0.160
EVQAD512	1978	-0.150	-0.040	0.130	0.330	0.140	0.430	0.490	0.450	0.220	0.350	-0.190	-0.020
EV 513	1978	-0.280	0.020	0.100	0.310	0.140	0.470	0.440	0.420	0.190	0.250	-0.320	-0.170
EVA10200	1979	-0.142	-0.081	0.012	0.043	-0.046	0.283	0.022	0.267	0.140	0.141	-0.007	-0.061
EVB10170	1979	-0.341	-0.140	-0.054	0.046	0.003	0.261	-0.053	0.286	0.022	0.128	-0.014	-0.099
EVB10070	1979	-0.392	-0.147	-0.061	0.045	0.025	0.239	-0.078	0.302	0.014	0.123	-0.046	-0.100
EVF10005	1979	-0.446	-0.137	-0.024	0.091	0.065	0.258	-0.042	0.350	0.005	0.146	-0.061	-0.100
EVA10340	1979	-0.166	-0.099	0.023	0.089	-0.062	0.323	0.066	0.250	0.069	0.140	0.068	-0.097
EVA10240	1979	-0.190	-0.109	0.000	0.070	-0.058	0.301	0.031	0.245	0.063	0.129	0.050	-0.098
EVB10040	1979	-0.411	-0.143	-0.048	0.062	0.040	0.246	-0.065	0.319	0.011	0.131	-0.051	-0.100
EVB10270	1979	-0.264	-0.131	-0.044	0.040	-0.034	0.265	-0.034	0.253	0.043	0.117	0.011	-0.099

EVQAD412	1979	0.000	-0.060	0.100	0.120	-0.130	0.300	0.130	0.200	0.140	0.100	0.080	-0.100
EVQAD413	1979	-0.220	-0.180	-0.180	-0.100	-0.100	0.180	-0.190	0.150	0.040	0.050	0.000	-0.100
EVQAD512	1979	-0.200	-0.080	0.070	0.160	-0.020	0.470	0.190	0.320	0.030	0.240	0.160	-0.090
EV 513	1979	-0.480	-0.130	0.000	0.120	0.090	0.270	-0.020	0.380	0.000	0.160	-0.070	-0.100
EVA10200	1980	-0.074	0.115	0.112	0.100	0.034	0.282	0.582	0.589	0.115	0.167	0.003	0.076
EVB10170	1980	-0.077	0.160	0.067	0.111	0.062	0.300	0.654	0.597	0.111	0.152	-0.005	0.084
EVB10070	1980	-0.074	0.162	0.044	0.090	0.034	0.299	0.657	0.590	0.128	0.149	-0.013	0.090
EVF10005	1980	-0.047	0.192	0.035	0.078	0.013	0.330	0.659	0.584	0.197	0.174	-0.017	0.102
EVA10340	1980	-0.091	0.155	0.138	0.148	0.087	0.293	0.669	0.636	0.081	0.166	0.033	0.074
EVA10240	1980	-0.097	0.147	0.123	0.139	0.079	0.283	0.668	0.631	0.070	0.156	0.027	0.074
EVB10040	1980	-0.064	0.173	0.041	0.086	0.027	0.310	0.657	0.588	0.153	0.158	-0.015	0.094
EVB10270	1980	-0.096	0.143	0.089	0.121	0.067	0.279	0.661	0.614	0.071	0.143	0.010	0.076
EVQAD412	1980	-0.140	0.120	0.170	0.120	0.000	0.220	0.720	0.690	0.020	0.150	0.080	0.070
EVQAD413	1980	-0.160	0.070	0.070	0.130	0.100	0.200	0.650	0.610	-0.090	0.070	0.000	0.050
EVQAD512	1980	-0.010	0.230	0.190	0.230	0.230	0.420	0.620	0.610	0.200	0.240	0.020	0.080
EV 513	1980	-0.030	0.210	0.030	0.070	0.000	0.350	0.660	0.580	0.240	0.190	-0.020	0.110
EVA10200	1981	0.120	0.027	0.116	0.197	-0.223	0.246	0.247	0.337	0.317	-0.166	0.080	0.168
EVB10170	1981	0.099	-0.018	0.078	0.229	-0.308	0.127	0.256	0.271	0.236	-0.329	0.054	0.180
EVB10070	1981	0.094	-0.034	0.070	0.224	-0.314	0.117	0.245	0.243	0.217	-0.322	0.034	0.173

EVF10005	1981	0.085	-0.025	0.076	0.215	-0.281	0.107	0.291	0.253	0.201	-0.266	0.019	0.171
EVA10340	1981	0.124	0.054	0.123	0.237	-0.239	0.198	0.332	0.385	0.307	-0.256	0.143	0.202
EVA10240	1981	0.121	0.037	0.113	0.236	-0.260	0.190	0.304	0.357	0.296	-0.278	0.129	0.197
EVB10040	1981	0.091	-0.031	0.072	0.221	-0.302	0.113	0.262	0.247	0.211	-0.302	0.029	0.173
EVB10270	1981	0.111	0.000	0.090	0.234	-0.299	0.159	0.259	0.300	0.265	-0.321	0.090	0.187
EVQAD412	1981	0.160	0.110	0.170	0.230	-0.170	0.320	0.370	0.460	0.380	-0.120	0.240	0.210
EVQAD413	1981	0.120	-0.060	0.050	0.250	-0.420	0.150	0.100	0.210	0.270	-0.500	0.080	0.180
EVQAD512	1981	0.100	0.090	0.130	0.250	-0.200	0.120	0.440	0.460	0.290	-0.280	0.120	0.220
EV 513	1981	0.080	-0.020	0.080	0.210	-0.260	0.100	0.320	0.260	0.190	-0.230	0.010	0.170
EVA10200	1982	-0.033	-0.018	0.158	0.057	0.071	0.068	0.311	0.341	0.368	0.032	-0.335	-0.348
EVB10170	1982	-0.076	-0.050	0.148	0.001	-0.003	-0.050	0.368	0.371	0.343	-0.062	-0.393	-0.448
EVB10070	1982	-0.084	-0.057	0.143	-0.020	-0.011	-0.044	0.369	0.369	0.330	-0.077	-0.408	-0.491
EVF10005	1982	-0.069	-0.047	0.141	-0.026	0.008	-0.011	0.388	0.394	0.336	-0.073	-0.378	-0.466
EVA10340	1982	-0.034	-0.017	0.162	0.090	0.103	-0.007	0.358	0.362	0.390	-0.004	-0.334	-0.330
EVA10240	1982	-0.047	-0.027	0.159	0.073	0.083	-0.019	0.354	0.354	0.377	-0.018	-0.356	-0.369
EVB10040	1982	-0.079	-0.053	0.143	-0.022	-0.004	-0.032	0.376	0.378	0.332	-0.075	-0.397	-0.482
EVB10270	1982	-0.070	-0.045	0.153	0.032	0.031	-0.045	0.354	0.352	0.353	-0.047	-0.391	-0.435
EVQAD412	1982	-0.010	0.000	0.170	0.170	0.280	0.080	0.320	0.290	0.410	0.030	-0.330	-0.360
EVQAD413	1982	-0.130	-0.090	0.150	0.000	-0.070	-0.150	0.310	0.290	0.310	-0.090	-0.500	-0.570

EVQAD512	1982	0.010	0.020	0.170	0.100	0.030	-0.030	0.420	0.480	0.440	0.040	-0.220	-0.080
EV 513	1982	-0.060	-0.040	0.140	-0.030	0.020	0.010	0.400	0.410	0.340	-0.070	-0.360	-0.450
EVA10200	1983	0.067	-0.032	0.121	0.186	-0.057	0.143	0.294	0.345	0.375	0.158	-0.077	-0.145
EVB10170	1983	0.066	-0.166	0.114	0.248	-0.103	0.037	0.328	0.285	0.342	0.146	-0.131	-0.237
EVB10070	1983	0.056	-0.196	0.117	0.246	-0.113	0.036	0.325	0.277	0.333	0.146	-0.156	-0.266
EVF10005	1983	0.065	-0.223	0.119	0.279	-0.129	0.051	0.383	0.254	0.331	0.155	-0.165	-0.275
EVA10340	1983	0.093	-0.039	0.105	0.264	-0.076	0.081	0.386	0.312	0.377	0.132	-0.036	-0.150
EVA10240	1983	0.083	-0.057	0.106	0.251	-0.078	0.072	0.360	0.313	0.370	0.131	-0.054	-0.169
EVB10040	1983	0.059	-0.206	0.117	0.258	-0.119	0.041	0.346	0.269	0.333	0.149	-0.159	-0.269
EVB10270	1983	0.067	-0.112	0.110	0.236	-0.088	0.049	0.321	0.305	0.354	0.135	-0.099	-0.211
EVQAD412	1983	0.080	0.110	0.100	0.240	-0.050	0.160	0.420	0.360	0.410	0.090	0.040	-0.120
EVQAD413	1983	0.030	-0.110	0.110	0.140	-0.060	-0.010	0.140	0.350	0.340	0.120	-0.130	-0.240
EVQAD512	1983	0.160	-0.090	0.100	0.360	-0.090	0.050	0.490	0.260	0.380	0.180	-0.010	-0.070
EV 513	1983	0.070	-0.240	0.120	0.300	-0.140	0.060	0.420	0.240	0.330	0.160	-0.170	-0.280
EVA10200	1984	-0.005	-0.045	-0.010	0.207	0.062	0.397	0.223	0.327	0.193	-0.424	-0.068	-0.034
EVB10170	1984	-0.022	-0.170	-0.056	0.281	0.111	0.374	0.253	0.280	0.145	-0.660	-0.163	-0.049
EVB10070	1984	-0.020	-0.197	-0.048	0.285	0.115	0.373	0.238	0.262	0.125	-0.707	-0.196	-0.060
EVF10005	1984	-0.014	-0.193	0.006	0.331	0.173	0.377	0.294	0.292	0.165	-0.684	-0.205	-0.048
EVA10340	1984	-0.027	-0.026	-0.019	0.289	0.131	0.395	0.327	0.372	0.224	-0.484	-0.011	-0.023

EVA10240	1984	-0.028	-0.055	-0.037	0.276	0.112	0.391	0.294	0.345	0.195	-0.531	-0.040	-0.035
EVB10040	1984	-0.018	-0.195	-0.029	0.302	0.136	0.375	0.258	0.273	0.140	-0.699	-0.199	-0.056
EVB10270	1984	-0.027	-0.123	-0.064	0.263	0.091	0.381	0.247	0.295	0.147	-0.622	-0.110	-0.051
EVQAD412	1984	-0.040	0.130	0.040	0.270	0.120	0.430	0.320	0.430	0.230	-0.410	0.140	-0.050
EVQAD413	1984	-0.040	-0.210	-0.220	0.140	-0.070	0.360	0.060	0.170	0.000	-0.780	-0.170	-0.100
EVQAD512	1984	-0.010	-0.030	0.010	0.380	0.240	0.380	0.510	0.460	0.380	-0.300	-0.010	0.070
EV 513	1984	-0.010	-0.190	0.040	0.360	0.210	0.380	0.330	0.310	0.190	-0.670	-0.210	-0.040
EVA10200	1985	0.016	-0.059	0.049	0.053	0.126	0.297	0.264	0.532	0.288	-0.113	-0.221	-0.031
EVB10170	1985	-0.030	-0.100	0.041	0.085	0.222	0.307	0.234	0.562	0.236	-0.317	-0.337	-0.067
EVB10070	1985	-0.043	-0.109	0.045	0.086	0.222	0.315	0.214	0.556	0.230	-0.345	-0.347	-0.060
EVF10005	1985	-0.047	-0.128	0.085	0.119	0.258	0.373	0.205	0.571	0.242	-0.391	-0.343	-0.048
EVA10340	1985	0.018	-0.093	0.053	0.091	0.204	0.314	0.310	0.592	0.279	-0.222	-0.245	-0.066
EVA10240	1985	0.008	-0.092	0.041	0.080	0.194	0.298	0.296	0.581	0.268	-0.230	-0.260	-0.067
EVB10040	1985	-0.045	-0.116	0.060	0.098	0.235	0.336	0.211	0.561	0.234	-0.362	-0.345	-0.056
EVB10270	1985	-0.014	-0.093	0.028	0.070	0.194	0.284	0.260	0.564	0.245	-0.267	-0.303	-0.069
EVQAD412	1985	0.050	-0.110	0.050	0.060	0.110	0.300	0.370	0.600	0.320	-0.110	-0.100	-0.040
EVQAD413	1985	-0.030	-0.050	-0.080	-0.020	0.110	0.130	0.240	0.510	0.190	-0.200	-0.360	-0.100
EVQAD512	1985	0.040	-0.080	0.120	0.180	0.350	0.410	0.330	0.640	0.300	-0.290	-0.310	-0.090
EV 513	1985	-0.050	-0.140	0.110	0.140	0.280	0.410	0.200	0.580	0.250	-0.420	-0.340	-0.040

EVA10200	1986	0.172	0.043	0.230	-0.076	0.012	0.055	0.403	0.429	0.130	-0.025	-0.234	-0.096
EVB10170	1986	0.194	0.058	0.280	-0.115	-0.054	-0.132	0.480	0.370	-0.015	-0.138	-0.364	-0.208
EVB10070	1986	0.190	0.063	0.285	-0.098	-0.056	-0.195	0.479	0.351	-0.028	-0.156	-0.393	-0.223
EVF10005	1986	0.184	0.061	0.325	-0.056	-0.071	-0.259	0.504	0.332	0.020	-0.177	-0.391	-0.227
EVA10340	1986	0.195	0.023	0.282	-0.109	-0.014	0.025	0.486	0.446	0.122	-0.097	-0.218	-0.123
EVA10240	1986	0.195	0.030	0.271	-0.115	-0.014	0.002	0.477	0.436	0.087	-0.102	-0.247	-0.138
EVB10040	1986	0.188	0.063	0.300	-0.083	-0.061	-0.218	0.488	0.344	-0.011	-0.164	-0.393	-0.225
EVB10270	1986	0.195	0.047	0.263	-0.124	-0.029	-0.065	0.469	0.403	0.013	-0.119	-0.317	-0.177
EVQAD412	1986	0.180	-0.020	0.260	-0.050	0.090	0.090	0.460	0.530	0.290	-0.080	-0.070	-0.020
EVQAD413	1986	0.210	0.070	0.160	-0.230	-0.010	0.010	0.400	0.410	-0.180	-0.090	-0.400	-0.210
EVQAD512	1986	0.210	0.030	0.360	-0.140	-0.120	0.100	0.560	0.420	0.140	-0.080	-0.210	-0.150
EV 513	1986	0.180	0.060	0.350	-0.030	-0.080	-0.300	0.520	0.320	0.050	-0.190	-0.390	-0.230
EVA10200	1987	0.030	-0.120	0.244	0.312	0.034	0.120	0.231	0.442	0.181	0.112	-0.357	-0.220
EVB10170	1987	0.027	-0.283	0.362	0.393	0.066	0.045	0.228	0.434	0.133	0.065	-0.538	-0.352
EVB10070	1987	0.026	-0.316	0.389	0.390	0.074	0.038	0.213	0.417	0.127	0.053	-0.591	-0.377
EVF10005	1987	0.047	-0.337	0.408	0.402	0.065	0.008	0.229	0.413	0.129	0.076	-0.572	-0.367
EVA10340	1987	0.038	-0.134	0.237	0.402	0.015	0.029	0.289	0.482	0.138	0.115	-0.305	-0.240
EVA10240	1987	0.030	-0.158	0.256	0.395	0.027	0.037	0.271	0.471	0.134	0.097	-0.359	-0.266
EVB10040	1987	0.034	-0.324	0.396	0.394	0.071	0.027	0.219	0.415	0.127	0.061	-0.584	-0.373

EVB10270	1987	0.020	-0.225	0.312	0.388	0.052	0.049	0.237	0.447	0.130	0.068	-0.475	-0.322
EVQAD412	1987	0.030	0.030	0.090	0.380	-0.040	-0.010	0.310	0.490	0.110	0.120	-0.120	-0.150
EVQAD413	1987	-0.040	-0.250	0.330	0.350	0.100	0.130	0.160	0.430	0.120	-0.020	-0.650	-0.410
EVQAD512	1987	0.090	-0.170	0.280	0.460	0.010	0.030	0.370	0.540	0.190	0.210	-0.200	-0.190
EV 513	1987	0.060	-0.350	0.420	0.410	0.060	-0.010	0.240	0.410	0.130	0.090	-0.560	-0.360
EVA10200	1988	0.147	0.035	0.044	0.191	0.328	0.446	0.157	0.233	0.305	-0.009	-0.335	-0.085
EVB10170	1988	0.197	0.029	0.031	0.247	0.424	0.445	0.240	0.203	0.312	-0.075	-0.353	-0.172
EVB10070	1988	0.199	0.020	0.027	0.249	0.433	0.446	0.252	0.166	0.323	-0.087	-0.352	-0.190
EVF10005	1988	0.218	0.020	0.029	0.268	0.449	0.455	0.306	0.193	0.339	-0.083	-0.277	-0.190
EVA10340	1988	0.181	0.047	0.028	0.243	0.407	0.457	0.191	0.305	0.274	-0.055	-0.314	-0.094
EVA10240	1988	0.177	0.041	0.025	0.238	0.407	0.453	0.184	0.269	0.278	-0.064	-0.342	-0.111
EVB10040	1988	0.206	0.020	0.027	0.256	0.439	0.449	0.271	0.176	0.329	-0.085	-0.325	-0.190
EVB10270	1988	0.181	0.032	0.026	0.236	0.413	0.447	0.195	0.211	0.293	-0.076	-0.376	-0.148
EVQAD412	1988	0.130	0.030	-0.010	0.220	0.400	0.480	0.070	0.270	0.230	-0.090	-0.330	-0.030
EVQAD413	1988	0.140	0.020	0.020	0.190	0.380	0.420	0.080	0.080	0.270	-0.100	-0.590	-0.190
EVQAD512	1988	0.250	0.100	0.080	0.290	0.410	0.450	0.350	0.540	0.300	0.030	-0.150	-0.070
EV 513	1988	0.230	0.020	0.030	0.280	0.460	0.460	0.340	0.210	0.350	-0.080	-0.230	-0.190
EVA10200	1989	-0.064	-0.007	-0.002	0.230	-0.092	0.053	0.048	0.274	0.284	0.217	0.139	0.109
EVB10170	1989	-0.137	-0.096	-0.119	0.303	-0.087	-0.250	0.057	0.233	0.274	0.175	0.167	0.087

EVB10070	1989	-0.163	-0.110	-0.153	0.309	-0.064	-0.325	0.042	0.216	0.273	0.167	0.154	0.070
EVF10005	1989	-0.186	-0.104	-0.163	0.346	-0.031	-0.371	0.084	0.249	0.283	0.169	0.145	0.058
EVA10340	1989	-0.076	-0.002	0.010	0.305	-0.135	0.052	0.094	0.313	0.267	0.212	0.213	0.136
EVA10240	1989	-0.086	-0.020	-0.015	0.295	-0.131	0.001	0.070	0.286	0.264	0.204	0.205	0.127
EVB10040	1989	-0.171	-0.108	-0.157	0.322	-0.052	-0.342	0.057	0.228	0.277	0.167	0.151	0.066
EVB10270	1989	-0.113	-0.065	-0.076	0.287	-0.113	-0.135	0.042	0.240	0.264	0.185	0.184	0.105
EVQAD412	1989	-0.060	0.120	0.110	0.290	-0.150	0.340	0.030	0.340	0.230	0.240	0.250	0.160
EVQAD413	1989	-0.090	-0.130	-0.120	0.190	-0.170	-0.180	-0.090	0.110	0.240	0.160	0.180	0.110
EVQAD512	1989	-0.030	-0.030	0.050	0.370	-0.150	0.040	0.290	0.430	0.320	0.230	0.220	0.160
EV 513	1989	-0.200	-0.100	-0.170	0.370	-0.010	-0.400	0.110	0.270	0.290	0.170	0.140	0.050
EVA10200	1990	-0.218	0.016	-0.122	0.090	-0.104	0.334	0.170	0.371	0.109	-0.042	-0.175	-0.100
EVB10170	1990	-0.383	-0.015	-0.146	0.156	-0.137	0.326	0.187	0.355	0.059	-0.146	-0.206	-0.123
EVB10070	1990	-0.393	-0.018	-0.129	0.159	-0.144	0.323	0.173	0.337	0.056	-0.165	-0.227	-0.121
EVF10005	1990	-0.409	0.018	-0.068	0.196	-0.123	0.346	0.183	0.321	0.065	-0.125	-0.229	-0.084
EVA10340	1990	-0.311	0.041	-0.167	0.140	-0.097	0.346	0.210	0.383	0.051	-0.049	-0.154	-0.109
EVA10240	1990	-0.318	0.023	-0.176	0.131	-0.111	0.335	0.198	0.377	0.048	-0.080	-0.168	-0.121
EVB10040	1990	-0.399	-0.005	-0.107	0.172	-0.137	0.331	0.177	0.331	0.059	-0.150	-0.227	-0.108
EVB10270	1990	-0.347	-0.010	-0.177	0.130	-0.135	0.320	0.183	0.365	0.049	-0.135	-0.194	-0.136
EVQAD412	1990	-0.180	0.100	-0.190	0.070	-0.080	0.340	0.160	0.360	0.000	0.000	-0.160	-0.120

EVQAD413	1990	-0.340	-0.130	-0.320	0.040	-0.210	0.250	0.140	0.390	0.030	-0.290	-0.220	-0.240
EVQAD512	1990	-0.410	0.080	-0.100	0.260	-0.040	0.410	0.330	0.440	0.120	0.070	-0.070	-0.030
EV 513	1990	-0.420	0.040	-0.030	0.220	-0.110	0.360	0.190	0.310	0.070	-0.100	-0.230	-0.060
EVA10200	1991	0.002	-0.017	0.162	-0.276	-0.009	0.294	0.264	0.228	0.193	-0.010	-0.083	0.009
EVB10170	1991	-0.067	-0.042	0.159	-0.465	0.001	0.174	0.278	0.129	0.114	-0.070	-0.122	-0.189
EVB10070	1991	-0.077	-0.053	0.146	-0.540	-0.033	0.154	0.250	0.100	0.099	-0.059	-0.147	-0.219
EVF10005	1991	-0.061	-0.051	0.155	-0.552	-0.043	0.133	0.262	0.100	0.118	0.020	-0.124	-0.256
EVA10340	1991	0.009	-0.014	0.200	-0.215	0.058	0.271	0.359	0.238	0.186	-0.032	-0.007	-0.015
EVA10240	1991	-0.009	-0.023	0.187	-0.270	0.040	0.259	0.334	0.214	0.165	-0.057	-0.038	-0.034
EVB10040	1991	-0.071	-0.053	0.149	-0.544	-0.037	0.147	0.254	0.100	0.106	-0.031	-0.139	-0.232
EVB10270	1991	-0.048	-0.038	0.165	-0.391	0.011	0.217	0.290	0.160	0.127	-0.089	-0.098	-0.108
EVQAD412	1991	0.100	-0.020	0.200	-0.090	-0.010	0.400	0.350	0.310	0.230	0.010	0.070	0.260
EVQAD413	1991	-0.130	-0.060	0.120	-0.500	0.000	0.220	0.210	0.100	0.040	-0.310	-0.220	-0.100
EVQAD512	1991	0.010	0.040	0.270	-0.030	0.230	0.210	0.510	0.300	0.250	0.050	0.080	-0.190
EV 513	1991	-0.050	-0.050	0.160	-0.560	-0.050	0.120	0.270	0.100	0.130	0.070	-0.110	-0.280
EVA10200	1992	0.048	0.020	0.124	0.114	0.069	0.043	0.098	0.375	0.026	0.182	-0.178	-0.072
EVB10170	1992	-0.075	-0.011	0.107	0.154	0.051	-0.050	0.242	0.346	-0.061	0.048	-0.207	-0.130
EVB10070	1992	-0.099	-0.017	0.093	0.152	0.037	-0.064	0.267	0.337	-0.079	0.018	-0.227	-0.147
EVF10005	1992	-0.124	-0.013	0.116	0.188	0.033	-0.031	0.367	0.333	-0.018	-0.012	-0.211	-0.143

EVA10340	1992	0.045	0.021	0.170	0.176	0.106	0.015	0.146	0.378	0.031	0.173	-0.139	-0.072
EVA10240	1992	0.030	0.013	0.149	0.161	0.095	-0.009	0.136	0.372	-0.006	0.155	-0.160	-0.087
EVB10040	1992	-0.108	-0.015	0.101	0.165	0.035	-0.052	0.303	0.335	-0.057	0.007	-0.221	-0.145
EVB10270	1992	-0.022	-0.003	0.114	0.144	0.069	-0.047	0.160	0.357	-0.063	0.101	-0.198	-0.116
EVQAD412	1992	0.210	0.050	0.190	0.160	0.150	0.030	-0.060	0.400	0.050	0.310	-0.130	-0.050
EVQAD413	1992	-0.020	-0.030	0.020	0.040	0.050	-0.170	-0.050	0.350	-0.270	0.110	-0.280	-0.160
EVQAD512	1992	-0.040	0.030	0.260	0.270	0.120	0.130	0.410	0.390	0.210	0.130	-0.030	-0.010
EV 513	1992	-0.140	-0.010	0.130	0.210	0.030	-0.010	0.430	0.330	0.020	-0.030	-0.200	-0.140
EVA10200	1993	0.003	0.036	0.042	0.037	0.046	0.163	0.594	0.387	0.253	-0.157	-0.054	0.059
EVB10170	1993	-0.046	-0.035	-0.009	0.031	0.062	-0.082	0.646	0.360	0.225	-0.265	-0.074	0.027
EVB10070	1993	-0.064	-0.041	-0.024	0.029	0.039	-0.157	0.629	0.312	0.213	-0.269	-0.103	0.015
EVF10005	1993	-0.043	-0.004	0.003	0.066	0.070	-0.257	0.654	0.342	0.236	-0.184	-0.101	0.055
EVA10340	1993	0.037	0.065	0.071	0.074	0.142	0.139	0.750	0.520	0.267	-0.176	0.020	0.114
EVA10240	1993	0.014	0.040	0.047	0.057	0.113	0.114	0.724	0.472	0.250	-0.215	-0.004	0.087
EVB10040	1993	-0.057	-0.028	-0.014	0.042	0.050	-0.193	0.638	0.323	0.221	-0.239	-0.103	0.030
EVB10270	1993	-0.031	-0.013	0.003	0.029	0.067	0.026	0.669	0.387	0.224	-0.274	-0.051	0.038
EVQAD412	1993	0.090	0.210	0.120	0.110	0.140	0.320	0.850	0.550	0.250	-0.120	0.050	0.190
EVQAD413	1993	-0.130	-0.160	-0.110	-0.090	-0.060	0.160	0.550	0.220	0.140	-0.540	-0.110	-0.110
EVQAD512	1993	0.110	0.050	0.150	0.130	0.300	0.100	0.790	0.750	0.380	-0.030	0.120	0.180

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EV 513	1993	-0.030	0.020	0.020	0.090	0.090	-0.320	0.670	0.360	0.250	-0.130	-0.100	0.080
EVA10200	1994	-0.051	-0.029	0.150	0.110	0.016	0.318	0.123	0.325	0.376	-0.172	0.003	-0.104
EVB10170	1994	-0.122	-0.127	0.097	0.168	-0.090	0.251	0.119	0.249	0.378	-0.453	0.006	-0.239
EVB10070	1994	-0.147	-0.153	0.093	0.160	-0.112	0.230	0.099	0.218	0.373	-0.483	0.011	-0.267
EVF10005	1994	-0.131	-0.169	0.116	0.160	-0.142	0.242	0.136	0.188	0.377	-0.506	0.078	-0.269
EVA10340	1994	-0.019	-0.026	0.171	0.152	0.018	0.347	0.192	0.335	0.383	-0.279	0.077	-0.108
EVA10240	1994	-0.046	-0.043	0.154	0.150	0.006	0.323	0.163	0.322	0.379	-0.303	0.051	-0.133
EVB10040	1994	-0.141	-0.159	0.101	0.160	-0.123	0.234	0.112	0.207	0.375	-0.491	0.035	-0.267
EVB10270	1994	-0.100	-0.088	0.116	0.155	-0.039	0.274	0.119	0.284	0.375	-0.380	0.006	-0.195
EVQAD412	1994	0.040	0.070	0.280	0.060	0.170	0.420	0.180	0.380	0.360	-0.030	0.180	0.030
EVQAD413	1994	-0.200	-0.100	0.020	0.160	-0.020	0.190	-0.020	0.310	0.360	-0.410	-0.200	-0.260
EVQAD512	1994	0.070	-0.030	0.150	0.260	-0.070	0.400	0.360	0.370	0.430	-0.400	0.110	-0.110
EV 513	1994	-0.120	-0.180	0.130	0.160	-0.160	0.250	0.160	0.170	0.380	-0.520	0.120	-0.270
EVA10200	1995	0.150	0.055	0.130	-0.034	0.033	0.294	0.278	0.425	0.102	0.281	0.099	-0.051
EVB10170	1995	0.209	0.086	0.068	-0.103	0.033	0.283	0.289	0.397	0.062	0.261	0.141	-0.135
EVB10070	1995	0.216	0.096	0.057	-0.127	0.048	0.289	0.273	0.390	0.056	0.243	0.129	-0.175
EVF10005	1995	0.243	0.117	0.059	-0.111	0.104	0.326	0.277	0.396	0.077	0.259	0.148	-0.215
EVA10340	1995	0.183	0.054	0.140	0.009	0.057	0.289	0.337	0.444	0.063	0.333	0.191	-0.040
EVA10240	1995	0.180	0.055	0.126	-0.019	0.043	0.279	0.324	0.434	0.054	0.312	0.175	-0.056

EVB10040	1995	0.226	0.104	0.057	-0.121	0.068	0.302	0.275	0.392	0.064	0.249	0.136	-0.190
EVB10270	1995	0.187	0.066	0.092	-0.076	0.023	0.269	0.299	0.410	0.047	0.273	0.146	-0.096
EVQAD412	1995	0.130	0.010	0.230	0.090	0.130	0.290	0.340	0.500	0.000	0.360	0.210	-0.020
EVQAD413	1995	0.130	0.030	0.050	-0.180	-0.130	0.170	0.260	0.370	-0.010	0.190	0.070	-0.050
EVQAD512	1995	0.250	0.090	0.120	0.080	0.050	0.340	0.410	0.440	0.180	0.420	0.260	0.030
EV 513	1995	0.260	0.130	0.060	-0.100	0.140	0.350	0.280	0.400	0.090	0.270	0.160	-0.240
EVA10200	1996	0.052	0.219	0.124	0.132	0.132	0.096	-0.031	0.064	0.001	0.098	-0.105	-0.007
EVB10170	1996	0.050	0.205	0.134	0.138	0.220	0.011	0.016	-0.035	-0.147	0.023	-0.165	-0.024
EVB10070	1996	0.040	0.190	0.123	0.130	0.231	-0.015	0.001	-0.041	-0.196	0.013	-0.179	-0.024
EVF10005	1996	0.040	0.202	0.146	0.142	0.304	0.031	0.062	-0.022	-0.217	0.036	-0.204	-0.015
EVA10340	1996	0.067	0.296	0.167	0.182	0.222	0.122	0.025	0.002	-0.017	0.089	-0.115	-0.022
EVA10240	1996	0.060	0.275	0.151	0.169	0.203	0.084	-0.002	-0.010	-0.046	0.070	-0.118	-0.025
EVB10040	1996	0.040	0.194	0.131	0.134	0.257	0.002	0.023	-0.034	-0.204	0.021	-0.188	-0.021
EVB10270	1996	0.051	0.230	0.129	0.146	0.188	0.020	-0.022	-0.032	-0.108	0.034	-0.137	-0.028
EVQAD412	1996	0.040	0.390	0.140	0.210	0.190	0.150	-0.130	0.030	0.000	0.140	-0.050	-0.030
EVQAD413	1996	0.040	0.150	0.050	0.090	0.000	-0.160	-0.190	-0.100	-0.130	-0.060	-0.100	-0.050
EVQAD512	1996	0.130	0.310	0.280	0.220	0.350	0.300	0.330	0.040	0.130	0.140	-0.160	0.000
EV 513	1996	0.040	0.210	0.160	0.150	0.350	0.060	0.100	-0.010	-0.230	0.050	-0.220	-0.010
EVA10200	1997	0.012	-0.110	0.120	-0.120	0.085	0.156	0.334	0.207	0.333	-0.089	-0.117	-0.112

EVB10170	1997	-0.054	-0.203	0.083	-0.263	0.161	0.077	0.344	0.140	0.277	-0.217	-0.143	-0.203
EVB10070	1997	-0.067	-0.210	0.062	-0.310	0.159	0.069	0.320	0.126	0.266	-0.247	-0.161	-0.217
EVF10005	1997	-0.069	-0.204	0.092	-0.298	0.190	0.094	0.332	0.135	0.293	-0.237	-0.142	-0.201
EVA10340	1997	0.009	-0.144	0.182	-0.057	0.152	0.130	0.433	0.191	0.360	-0.115	-0.068	-0.119
EVA10240	1997	-0.002	-0.156	0.153	-0.104	0.142	0.113	0.409	0.177	0.338	-0.143	-0.090	-0.140
EVB10040	1997	-0.067	-0.208	0.073	-0.306	0.170	0.078	0.324	0.129	0.276	-0.243	-0.154	-0.211
EVB10270	1997	-0.032	-0.184	0.099	-0.206	0.138	0.083	0.363	0.150	0.293	-0.195	-0.130	-0.183
EVQAD412	1997	0.080	-0.060	0.240	0.100	0.070	0.170	0.470	0.210	0.440	-0.080	-0.030	-0.040
EVQAD413	1997	-0.060	-0.230	-0.030	-0.350	0.060	-0.010	0.280	0.100	0.180	-0.280	-0.220	-0.270
EVQAD512	1997	0.000	-0.170	0.280	0.040	0.290	0.180	0.530	0.250	0.400	0.000	0.010	-0.090
EV 513	1997	-0.070	-0.200	0.110	-0.290	0.210	0.110	0.340	0.140	0.310	-0.230	-0.130	-0.190
EVA10200	1998	-0.119	-0.101	0.198	0.222	0.178	0.467	0.471	0.321	-0.072	-0.058	-0.056	0.008
EVB10170	1998	-0.187	-0.160	0.198	0.282	0.230	0.479	0.529	0.261	-0.281	-0.212	-0.161	-0.053
EVB10070	1998	-0.179	-0.178	0.188	0.276	0.222	0.476	0.515	0.242	-0.324	-0.200	-0.169	-0.073
EVF10005	1998	-0.118	-0.148	0.146	0.285	0.270	0.503	0.561	0.284	-0.309	-0.188	-0.194	-0.096
EVA10340	1998	-0.137	-0.079	0.185	0.289	0.292	0.514	0.619	0.379	-0.097	-0.181	-0.079	0.003
EVA10240	1998	-0.158	-0.105	0.195	0.283	0.266	0.500	0.588	0.344	-0.140	-0.183	-0.083	-0.004
EVB10040	1998	-0.157	-0.167	0.173	0.279	0.239	0.486	0.532	0.257	-0.319	-0.196	-0.178	-0.081
EVB10270	1998	-0.191	-0.150	0.208	0.277	0.227	0.478	0.536	0.280	-0.232	-0.197	-0.115	-0.027

EVQAD412	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100
0.040												
EVQAD413	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090
0.000												
EVQAD512	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240
0.010												
EV 513	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210
-0.110												

Cyp03_pit129.FLO

cyp03_pit129.FLO

IN 513	1948	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1948	39837	54683	47268	18644	80804	2587	1317	387	556	538	1879	2191
INB10000	1948	85421	140304	163444	51133	152410	18308	3893	387	556	981	3951	6612
INC10000	1948	29882	63557	70415	21164	55875	5249	1664	114	3	10	1918	3235
IND10000	1948	28684	61008	67592	20315	53634	5039	1597	109	3	9	1841	3105
INE10000	1948	51160	108813	120555	36234	95661	8987	2848	195	6	17	3284	5538
INF10000	1948	245818	461732	523372	160270	448842	48059	12411	1026	834	1487	13517	22719
INQAD412	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1948	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1949	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1949	53230	29211	29964	22062	12371	4506	2639	873	2377	104149	7855	15562
INB10000	1949	53230	79641	71509	48647	32490	9267	9567	2955	6378	147337	47440	30625
INC10000	1949	15790	29611	30349	31147	26382	3474	11109	6217	4319	33309	31430	13587
IND10000	1949	15156	28423	29132	29898	25324	3335	10664	5967	4146	31973	30169	13042
INE10000	1949	27033	50696	51959	53326	45168	5948	19020	10643	7394	57027	53810	23262
INF10000	1949	141843	236198	227144	196580	153638	27600	58619	29262	26715	350976	195930	99641
INQAD412	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1949	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1950	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1950	84084	136888	36163	11532	110724	12673	5932	3612	58208	3290	2395	2978
INB10000	1950	187555	272450	76563	30284	251282	35799	9234	8581	155414	14209	8728	9703
INC10000	1950	86809	92543	27263	17358	91101	20008	5707	6373	31989	6056	5245	5624
IND10000	1950	83328	88832	26169	16662	87448	19205	5478	6118	30707	5813	5034	5398
INE10000	1950	148621	158440	46675	29718	155970	34255	9771	10911	54768	10368	8979	9628
INF10000	1950	624630	772963	222247	114240	735927	132996	36492	38196	357618	45235	33893	36850
INQAD412	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1950	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1951	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1951	16542	57208	12996	8613	8590	5420	5144	199	1147	899	2076	3077
INB10000	1951	33346	116218	58828	40721	35763	14242	7049	199	5204	2240	6586	10674
INC10000	1951	13869	39454	28760	19086	22833	4502	964	127	4610	544	2517	7191
IND10000	1951	13313	37872	27607	18320	21918	4322	925	122	4425	522	2417	6903

cyp03_pit129.FLO

INE10000	1951	23744	67547	49240	32676	39092	7708	1650	218	7893	931	4310	12311
INF10000	1951	104787	329631	202057	136571	144259	39062	14268	803	26149	5485	19808	44561
INQAD412	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1951	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1952	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1952	15269	6229	20312	106196	33309	8586	1038	149	0	61	3848	21941
INB10000	1952	24386	25447	48508	181164	39031	45318	1423	149	0	61	5193	44782
INC10000	1952	10868	15772	22429	47240	23845	16873	459	171	0	0	516	8299
IND10000	1952	10432	15140	21530	45346	22889	16196	441	164	0	0	495	7966
INE10000	1952	18607	27003	38400	80878	40824	28887	786	292	0	0	883	14208
INF10000	1952	79538	100745	161461	456724	153136	134496	3941	904	0	90	9734	99366
INQAD412	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1952	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1953	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1953	12501	16796	13933	19484	92921	939	6803	1210	4340	824	2510	16909
INB10000	1953	36309	37043	50537	37893	259460	3792	14916	3402	7144	824	6125	29045
INC10000	1953	18011	20055	41452	19220	128023	4029	6754	3811	2405	56	2787	15206
IND10000	1953	17288	19251	39790	18449	122890	3868	6483	3658	2308	54	2676	14596
INE10000	1953	30835	34336	70969	32906	219183	6898	11563	6524	4117	96	4772	26033
INF10000	1953	125749	135023	240643	132932	895876	21736	49076	20287	20180	1440	20208	103789
INQAD412	1953	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1953	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1953	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1954	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1954	34592	10249	4346	3930	34988	7503	82	0	0	1301	1479	4320
INB10000	1954	53201	29468	14046	15677	51873	31348	82	0	0	2369	8121	11423
INC10000	1954	22861	18526	9864	11676	27447	11592	149	0	0	14	3651	4731
IND10000	1954	21945	17783	9468	11207	26346	11127	143	0	0	13	3505	4542
INE10000	1954	39140	31718	16887	19989	46990	19847	255	0	0	24	6251	8100
INF10000	1954	170121	117712	60245	69911	186524	92718	717	1	0	3555	26614	35817
INQAD412	1954	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1954	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1954	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1955	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1955	3909	8712	20726	21377	1715	738	57	1593	807	4091	340	1348
INB10000	1955	14380	38210	57838	73577	8259	2614	2164	3703	807	5612	1073	4024
INC10000	1955	8560	24144	48860	42703	9072	2784	1730	5415	2925	1872	554	2559
IND10000	1955	8217	23176	46901	40991	8709	2672	1661	5198	2808	1797	532	2457
INE10000	1955	14656	41336	83651	73111	15533	4766	2962	9271	5008	3205	949	4381
INF10000	1955	55519	153120	281092	279677	48531	15010	10124	27155	12907	15786	3804	16191
INQAD412	1955	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1955	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1955	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1956	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1956	1353	27842	3063	1589	8554	56	0	0	0	0	134	383
INB10000	1956	5974	48491	16298	8375	25107	56	0	0	0	0	362	383
INC10000	1956	4229	25959	10025	5086	21658	323	17	0	0	0	1	19
IND10000	1956	4059	24918	9623	4882	20789	310	17	0	0	0	1	18
INE10000	1956	7240	44444	17163	8707	37079	552	30	0	0	0	1	33
INF10000	1956	25757	175573	64217	32737	123813	1374	69	0	0	0	537	643
INQAD412	1956	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1956	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1956	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1957	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1957	731	3601	20126	94381	52405	43544	966	440	4657	13734	83633	14848
INB10000	1957	1582	12913	25857	187015	152038	134887	11906	1116	6133	42022	221153	60538
INC10000	1957	299	5516	12695	109178	102831	81815	4875	761	740	22053	94139	32666
IND10000	1957	287	5295	12186	104800	98708	78535	4680	730	711	21168	90364	31356
INE10000	1957	512	9443	21735	186918	176053	140073	8346	1302	1267	37755	161171	55926
INF10000	1957	3533	41158	89027	713419	636350	526857	37106	4694	12021	150374	703602	220223
INQAD412	1957	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1957	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1957	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1958	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1958	45440	5670	31795	152128	85637	24521	15670	3599	7617	2544	21997	9779
INB10000	1958	115786	37473	71708	374361	271125	63415	58314	16163	19375	14349	21997	23062
INC10000	1958	58853	26980	28613	71506	151261	17282	20653	2353	6261	7198	4780	8772
IND10000	1958	56493	25898	27466	68638	145196	16589	19825	2259	6010	6909	4588	8421

cyp03_pit129.FLO

INE10000	1958	100760	46191	48988	122422	258968	29587	35359	4028	10719	12323	8184	15019
INF10000	1958	406688	163390	220487	839203	1006168	162859	168828	33292	53686	50017	51627	69190
INQAD412	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1958	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1959	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1959	3592	22580	30981	30696	8110	3717	5523	1692	1389	1301	2868	35067
INB10000	1959	16004	70047	83001	112234	45291	27214	14969	8320	3473	4950	6289	55152
INC10000	1959	8250	28915	33924	58852	39468	24297	6599	3481	979	2168	2996	21731
IND10000	1959	7919	27755	32564	56492	37885	23322	6334	3342	940	2081	2876	20859
INE10000	1959	14124	49503	58080	100758	67571	41597	11298	5960	1676	3711	5129	37204
INF10000	1959	56674	219242	258433	401439	224948	137495	48534	26229	9050	15991	21286	168474
INQAD412	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1959	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1960	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1960	64111	25252	25532	4205	3388	8325	12483	504	5546	5487	5374	70491
INB10000	1960	155989	56577	91723	18213	17439	10582	31757	753	8254	16378	17132	210302
INC10000	1960	61651	30869	52451	10422	7095	4185	2060	187	967	4143	8345	121797
IND10000	1960	59179	29631	50348	10004	6810	4017	1977	180	928	3977	8010	116913
INE10000	1960	105550	52850	89800	17843	12147	7164	3527	321	1655	7093	14287	208524
INF10000	1960	477262	207177	345514	68636	54167	32386	55145	1863	16062	40778	58721	798350
INQAD412	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1960	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1961	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1961	34285	30639	35695	14373	3950	19421	7537	1591	1699	1114	12849	34310
INB10000	1961	84572	91522	116979	61979	19411	44289	34486	2032	3308	4762	19562	107170
INC10000	1961	52864	47946	57301	52215	7961	11581	23998	1878	3648	4119	11233	55312
IND10000	1961	50744	46023	55003	50121	7642	11116	23035	1803	3502	3953	10783	53094
INE10000	1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232	94697
INF10000	1961	336605	327172	402232	300644	60550	111783	147035	10521	19496	23527	73876	379781
INQAD412	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1961	100	100	100	100	100	100	100	100	100	100	100	100

IN 513	1962	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1962	33638	25699	28421	22735	12989	4879	2624	292	2931	2007	7460	7101
INB10000	1962	90002	81056	108133	53472	42717	13680	9641	1255	10739	13073	19445	28643
INC10000	1962	41302	39541	53153	26365	27183	4664	2296	384	1527	3264	4084	7723
IND10000	1962	39645	37955	51022	25307	26093	4477	2204	368	1465	3133	3920	7413
INE10000	1962	70711	67696	91002	45138	46538	7985	3931	657	2614	5587	6992	13222
INF10000	1962	298318	278055	372559	184553	171946	38882	23433	3390	21972	32375	45070	73227
INQAD412	1962	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1962	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1962	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1963	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1963	9929	5878	14341	10426	18910	1444	0	0	0	309	0	826
INB10000	1963	23294	13788	33643	24460	44363	3388	0	0	0	726	0	1939
INC10000	1963	8998	6716	12016	11131	35052	1207	337	35	1	0	117	1148
IND10000	1963	7675	5268	12014	14911	23019	1142	106	6	0	0	179	1461
INE10000	1963	15406	11498	20573	19057	60012	2067	577	60	2	0	200	2104
INF10000	1963	70437	47259	97806	80700	205895	9837	1351	139	5	1072	467	7667
INQAD412	1963	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1963	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1963	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1964	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1964	1600	3295	11447	12118	6728	1654	0	2395	2582	1058	1164	2941
INB10000	1964	3753	7729	26854	28429	15783	3881	0	5619	6057	2482	2731	6900
INC10000	1964	1447	3074	8763	6476	5769	401	9	483	834	1022	764	5969
IND10000	1964	1553	3192	7645	6994	2944	317	0	567	855	298	189	1013
INE10000	1964	2477	5262	15003	11088	9878	687	15	827	1428	1750	1308	10219
INF10000	1964	11338	23723	74751	67919	46414	7338	35	10233	12285	7759	7093	34093
INQAD412	1964	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1964	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1964	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1965	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1965	8028	46220	19775	7158	24331	11578	384	415	449	0	154	0
INB10000	1965	18833	108430	46393	16791	57079	27161	900	974	1054	0	361	0
INC10000	1965	12049	32040	23480	14544	22544	21179	1464	9	120	31	38	605
IND10000	1965	5034	25764	15645	7651	23660	12824	528	0	184	0	43	547

cyp03_pit129.FLO

INE10000	1965	20628	54855	40199	24900	38596	36260	2507	16	206	113	66	1083
INF10000	1965	76065	288441	162545	83045	174576	124930	7193	1476	2039	212	686	2492
INQAD412	1965	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1965	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1965	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1966	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1966	1756	6176	4745	138284	103327	4307	125	201	2160	1934	3102	5161
INB10000	1966	4119	14490	11131	324412	242403	10104	293	471	5066	4538	7277	12107
INC10000	1966	1680	4897	3591	159318	113530	2358	257	411	1177	661	1248	2683
IND10000	1966	1664	3313	2482	178898	84637	1087	73	82	525	535	1514	2567
INE10000	1966	2876	8384	6149	272761	194370	4036	440	704	2015	1131	2136	4594
INF10000	1966	12811	41010	30821	1117124	812643	24362	1462	2342	12195	9347	15743	28624
INQAD412	1966	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1966	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1966	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1967	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1967	7672	4362	7059	24275	31206	22852	1364	534	786	122	3355	16435
INB10000	1967	17998	10232	16561	56949	73209	53611	3200	1254	1843	286	7871	38556
INC10000	1967	4850	3918	3993	9023	19814	40356	1750	50	113	27	487	4387
IND10000	1967	4031	3111	3613	11929	17600	40450	604	0	126	0	716	7445
INE10000	1967	8303	6708	6837	15447	33923	69092	2996	85	194	46	782	7829
INF10000	1967	46001	30802	40450	120232	187465	240793	11734	2051	3175	530	13498	74976
INQAD412	1967	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1967	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1967	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1968	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1968	35450	19593	45168	22304	64758	24297	3798	1549	13329	2035	12282	34404
INB10000	1968	72222	38392	92482	54215	152730	54038	22002	4153	19517	7811	19101	76214
INC10000	1968	25170	15828	29421	31752	95207	11218	7478	1402	4239	2646	7058	27399
IND10000	1968	28805	14096	33568	28802	112683	10239	9070	1230	3752	1998	6340	26910
INE10000	1968	43141	27098	50370	54361	163001	19205	12802	2401	7258	4530	12083	46908
INF10000	1968	207527	120085	254399	207224	606840	124725	62438	11750	45799	22131	56473	222276
INQAD412	1968	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1968	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1968	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1969	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1969	9862	71203	68764	34682	64871	2377	608	359	356	395	2048	4942
INB10000	1969	26700	141236	157880	114767	114352	11219	608	683	3271	751	12770	28641
INC10000	1969	15590	46757	66884	75155	35604	6193	177	7	2	6	8176	15521
IND10000	1969	12224	56748	75881	57363	35774	3775	197	0	0	0	5324	15430
INE10000	1969	23641	65009	145506	123210	61156	8136	425	19	32	12	8065	18077
INF10000	1969	97361	373614	546786	462407	311753	37727	1786	1046	4880	1134	42842	91910
INQAD412	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1969	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1970	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1970	8790	17815	55225	41060	6893	3566	673	597	262	1566	1983	1733
INB10000	1970	38886	43529	126894	93678	32796	14829	3576	916	678	1809	8287	9724
INC10000	1970	36824	24865	53935	28189	22029	14220	2233	467	254	898	4520	4697
IND10000	1970	28773	20003	54323	35341	15269	2731	253	0	274	1453	3388	2517
INE10000	1970	46144	30013	78080	37641	43263	5122	3482	336	312	1540	6689	5843
INF10000	1970	179943	145320	382337	235549	144848	50460	13721	2539	1838	6271	28792	29924
INQAD412	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1970	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1971	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1971	2661	7903	6276	1956	1490	294	5324	2912	224	582	4790	47949
INB10000	1971	14069	19441	17139	9723	3632	401	6208	13993	224	2355	5612	71949
INC10000	1971	6085	9057	12879	6476	6450	385	134	4687	436	368	1867	16580
IND10000	1971	2586	5109	6226	3161	1631	54	721	2611	0	225	2571	20267
INE10000	1971	6234	9192	12339	6995	3765	254	767	3209	444	273	2617	20411
INF10000	1971	38969	55657	62549	34250	20448	1537	10498	32324	1630	4425	14908	160873
INQAD412	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1971	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1972	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1972	35778	9851	7109	2513	1692	5897	11293	398	0	2635	12900	22253
INB10000	1972	79469	29439	24340	12145	4433	9308	11293	398	8259	2635	30463	51060
INC10000	1972	32462	16336	10713	7863	6312	695	489	99	506	2189	18942	31893
IND10000	1972	44226	13021	8530	3954	2374	3379	353	0	497	2201	12034	23601

cyp03_pit129.FLO

INE10000	1972	55802	24585	16776	6895	5856	3775	1956	0	520	4521	25702	51367
INF10000	1972	247696	103902	76537	39728	24516	20347	20287	734	13712	13799	110912	198353
INQAD412	1972	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1972	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1972	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1973	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1973	29332	25393	75060	85083	20070	29548	1491	912	3616	17587	64229	43676
INB10000	1973	54925	63968	190340	267839	38236	71666	1491	2412	12342	37605	129727	110506
INC10000	1973	28122	33041	82869	119369	24972	37704	5036	995	9883	25530	43304	72548
IND10000	1973	25124	30975	83482	157256	17182	51858	2498	854	21007	24938	53961	60365
INE10000	1973	38724	58359	114968	244572	53542	95187	6158	1789	33801	53003	70831	135374
INF10000	1973	179822	229436	573228	932962	172407	302074	18732	7672	82735	171501	360115	470229
INQAD412	1973	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1973	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1973	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1974	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1974	50748	16594	6657	71771	9611	34032	870	4421	66183	14013	92424	53192
INB10000	1974	111481	54480	35324	149529	26629	95157	5822	8941	115941	37321	210102	121841
INC10000	1974	49316	33311	21527	62076	16191	78580	1995	1745	34600	15539	79975	50468
IND10000	1974	34550	23741	23682	34158	12847	53806	1111	1161	36449	15068	89661	53394
INE10000	1974	93858	59562	46131	45999	32803	122049	3007	1523	52711	21457	111560	93367
INF10000	1974	376053	217600	152074	380408	111674	436793	15985	18029	300146	109745	593105	392329
INQAD412	1974	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1974	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1974	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1975	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1975	30772	75906	65654	32988	72893	15264	3062	2192	324	619	909	1616
INB10000	1975	74874	206821	147102	79718	168997	44896	9862	5783	324	619	3345	8887
INC10000	1975	33952	89507	57694	26734	73979	23384	6101	1880	728	469	2985	5572
IND10000	1975	37060	73243	46454	36184	52283	21553	5777	1277	504	293	2587	4406
INE10000	1975	59428	132265	70814	55253	106273	34994	10508	2644	912	337	3124	5582
INF10000	1975	248464	632912	406998	238792	515741	152507	39091	15221	2901	2105	13961	29594
INQAD412	1975	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1975	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1975	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1976	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1976	1693	6125	31916	16780	37982	2776	11755	876	528	0	0	3155
INB10000	1976	27181	23721	80819	32874	59042	10218	18765	876	1075	0	0	21205
INC10000	1976	19986	17857	52884	14349	16822	8321	8519	350	1127	1057	2174	16467
IND10000	1976	9280	8290	32233	10547	19425	3527	24944	477	1526	1341	1429	12639
INE10000	1976	21887	19884	55590	20294	26800	9474	37504	2258	2332	2426	3574	25176
INF10000	1976	101972	90764	279532	99703	151606	41367	95673	5146	6695	5143	8488	92809
INQAD412	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1976	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1977	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1977	2891	37018	52131	51556	3156	1143	0	887	0	0	2902	2729
INB10000	1977	15058	92488	104229	113228	19453	6092	0	2879	5182	0	14597	14967
INC10000	1977	15073	48068	49445	62201	8172	3950	238	405	323	66	5940	17501
IND10000	1977	10943	53343	60751	57196	5803	2459	245	5377	5044	963	5174	8589
INE10000	1977	26347	95422	90727	101597	21623	4388	389	7447	6567	1010	6161	12636
INF10000	1977	83401	348474	360911	409089	72725	21309	925	15846	17827	1589	39427	66606
INQAD412	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1977	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1978	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1978	9239	8957	23608	1819	9836	0	0	0	0	0	2969	2050
INB10000	1978	27973	30163	63702	15145	33285	2855	0	0	0	0	3796	7748
INC10000	1978	23372	25607	36204	13555	27025	3713	55	3	2	0	1200	8371
IND10000	1978	15498	16792	33055	7493	12719	1653	93	6	0	0	1956	2806
INE10000	1978	21187	29617	46329	19655	18866	2470	93	19	0	0	1955	4653
INF10000	1978	107109	126093	215948	71406	116920	13347	219	34	3	0	10264	30674
INQAD412	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1978	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1979	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1979	43190	24586	56791	40201	32919	18649	5112	14783	50198	1002	6613	16339
INB10000	1979	81889	47193	133465	145963	91577	25220	18756	46957	78909	6477	22804	51682
INC10000	1979	48112	27427	62739	78532	42553	30433	7507	38296	9022	4428	17077	27851
IND10000	1979	31842	17663	53037	78651	64462	14203	14963	23991	30546	4365	14441	30013

cyp03_pit129.FLO

INE10000	1979	68957	52198	87681	168728	122150	36226	17277	35301	55955	15810	25167	43596
INF10000	1979	293805	187274	419217	580681	378453	135681	64296	178024	212478	39450	96057	181826
INQAD412	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1979	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1980	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1980	53071	29725	17586	45364	39960	3877	0	0	2649	1518	1786	5547
INB10000	1980	126757	77108	59289	108543	75932	17295	0	0	3311	5563	6823	10895
INC10000	1980	55729	42670	30979	48528	35624	8831	692	29	28	916	4269	6494
IND10000	1980	43734	41024	26885	41703	36805	4408	243	0	0	708	1374	2148
INE10000	1980	98383	88464	41292	74496	72221	9671	772	0	0	685	2406	3809
INF10000	1980	414764	307515	194277	341961	271388	52863	2162	43	4931	10579	19933	31304
INQAD412	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1980	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1981	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1981	2689	7604	9699	1530	48644	92577	8942	0	0	26846	9591	1677
INB10000	1981	8939	15943	25752	11344	100836	144608	8942	0	0	37274	16622	7752
INC10000	1981	6541	8667	13465	7289	45600	45539	3305	267	324	10430	8629	7489
IND10000	1981	2317	3696	7684	3697	38040	38572	4016	300	40	4272	5387	5102
INE10000	1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7594	10941
INF10000	1981	28913	45241	74018	39160	282497	364854	27127	1510	1639	76747	48503	38663
INQAD412	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1981	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1982	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1982	7152	13787	14215	17450	49290	28343	4103	0	0	0	8920	102460
INB10000	1982	18892	30960	30526	33162	81879	35067	4659	0	0	0	15955	164549
INC10000	1982	10787	23282	15937	15645	20075	17458	5408	1617	4	0	2430	61906
IND10000	1982	6995	12869	12884	8877	11579	2221	1367	0	0	34	2161	32555
INE10000	1982	10636	24253	21939	14184	21720	5489	3275	313	0	29	2156	57993
INF10000	1982	59532	115915	101010	93020	182631	85672	19702	2851	5	43	30334	420051
INQAD412	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1982	100	100	100	100	100	100	100	100	100	100	100	100

cyp03_pit129.FLO

IN 513	1983	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1983	7064	30373	49796	12528	7755	4048	0	0	0	573	0	2457
INB10000	1983	26776	89984	93444	35613	31814	10536	6516	0	0	573	0	5349
INC10000	1983	25337	55472	34266	19830	22571	6757	8766	962	0	0	806	10916
IND10000	1983	13857	48749	47837	16999	17207	3710	2039	400	0	0	581	4534
INE10000	1983	29468	79834	75246	32176	25616	11473	4658	431	0	0	583	22561
INF10000	1983	120472	332692	299709	129389	118139	42481	29446	2057	0	847	2051	57336
INQAD412	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1983	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1984	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1984	3287	10858	12612	4737	0	0	0	0	0	35115	15074	28047
INB10000	1984	12186	31370	39305	18416	0	0	0	0	0	42445	28974	49544
INC10000	1984	9421	21788	31020	17651	3112	270	57	94	0	11474	19204	27152
IND10000	1984	4219	13284	19818	10133	1348	180	0	0	0	632	3515	7321
INE10000	1984	8510	33051	37829	21116	4444	1260	250	0	0	6385	10791	18082
INF10000	1984	44474	127307	159712	84443	11157	2259	453	139	0	89051	87081	139961
INQAD412	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1984	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1985	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1985	8613	60107	32881	27370	46746	6476	0	0	0	5558	8448	52840
INB10000	1985	22945	98798	76257	75521	94076	13122	4052	0	0	9893	21956	92542
INC10000	1985	19961	27238	36499	30315	36279	6501	1574	238	0	1046	9702	46966
IND10000	1985	8501	21354	32035	26580	39114	3671	358	0	0	728	9331	39581
INE10000	1985	19212	24535	54980	44182	55250	12252	904	70	0	1673	18435	75263
INF10000	1985	91731	222351	247699	221535	274086	47069	9643	454	0	18625	73972	317156
INQAD412	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1985	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1986	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1986	4625	63607	5058	26658	20923	37037	0	0	414	473	2742	11230
INB10000	1986	16430	98505	6300	40940	48501	50634	0	0	414	473	10545	47419
INC10000	1986	8905	31640	9794	19353	25309	32120	14580	223	430	1804	14799	55621
IND10000	1986	6480	36293	6131	10883	14253	10286	316	0	0	240	3798	22875

cyp03_pit129.FLO

INE10000	1986	13707	57923	12288	24999	24789	28333	2962	3	436	1431	7689	49399
INF10000	1986	57654	277723	41913	125952	145604	164045	25905	333	1890	5476	48780	225110
INQAD412	1986	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1986	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1986	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1987	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1987	11488	35327	123391	4755	0	5018	1314	0	0	0	13493	135750
INB10000	1987	34144	66351	232533	18107	5257	13853	5973	0	0	0	44833	300753
INC10000	1987	29369	38444	65287	10853	4179	4646	2950	238	192	610	26021	132637
IND10000	1987	15153	29692	90735	5059	4282	12599	3407	0	0	310	14745	120709
INE10000	1987	29610	50950	131392	18451	6456	18177	5071	43	0	321	15037	174351
INF10000	1987	137517	229991	633826	70014	23467	54160	20664	415	283	1375	126837	897464
INQAD412	1987	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1987	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1987	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1988	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1988	40466	35480	33607	16300	934	0	0	0	0	37	38739	16240
INB10000	1988	67973	80168	73280	45724	5215	489	746	0	0	3621	38739	46012
INC10000	1988	47277	36247	41830	26642	3324	466	1157	94	0	397	8773	30557
IND10000	1988	33952	34156	43518	19391	1809	430	1015	0	0	0	2913	6295
INE10000	1988	84765	54719	69041	36635	3895	434	1283	0	0	406	6637	10486
INF10000	1988	295366	252717	271938	160964	18362	2051	4705	139	0	6533	79962	128556
INQAD412	1988	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1988	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1988	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1989	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1989	19807	68523	50439	23561	92550	31861	2908	0	0	0	0	689
INB10000	1989	39666	122602	137096	66777	195291	58001	10254	0	0	0	0	1616
INC10000	1989	28656	45684	74638	50854	71542	35279	19627	4792	944	430	1607	3813
IND10000	1989	16591	40480	31901	31506	88387	12112	5583	526	0	0	97	102
INE10000	1989	27768	76079	129853	85067	148213	43689	22416	4776	1053	1039	3025	3667
INF10000	1989	141899	360858	504428	299328	612908	202265	77228	14129	2949	2169	6840	13432
INQAD412	1989	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1989	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1989	100	100	100	100	100	100	100	100	100	100	100	100

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IN 513	1990	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1990	22820	25971	109708	57230	52990	13392	0	3174	3779	1446	29055	32067
INB10000	1990	53536	60927	257372	134260	124313	31417	0	7445	8865	3393	68163	75229
INC10000	1990	30645	35540	98738	61045	34243	13666	884	1279	1296	5455	23255	32288
IND10000	1990	36797	32309	82854	77498	50708	21903	847	334	2294	4169	34402	39666
INE10000	1990	56095	68600	84906	106808	65003	41936	2753	2017	4217	7055	48479	65890
INF10000	1990	207147	243758	651258	446137	330134	128503	5372	15862	21232	23484	206588	256073
INQAD412	1990	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1990	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1990	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1991	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1991	72764	46565	25841	38421	68597	25991	3177	0	1346	6656	25795	51231
INB10000	1991	170703	109239	60622	90135	160928	60975	7453	0	3158	15615	60515	120188
INC10000	1991	92714	52766	38488	62785	118917	25628	2857	3059	10274	2012	38194	61849
IND10000	1991	78313	47431	28963	49010	67836	18616	1657	661	883	971	12686	46350
INE10000	1991	163660	68336	78526	127224	146576	44928	8264	4882	3530	1311	21789	86523
INF10000	1991	630674	340150	262318	413693	629705	194234	27429	11726	25049	27966	177941	396587
INQAD412	1991	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1991	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1991	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1992	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1992	26432	40166	64358	6937	12747	38511	37693	15331	6776	0	17262	68144
INB10000	1992	62008	94228	150982	16275	29903	90345	88427	35966	15897	0	40497	159863
INC10000	1992	30938	70852	64891	16247	15610	19523	35419	9354	9993	3108	24093	69499
IND10000	1992	24744	40623	57305	10893	7366	20303	26129	4103	5382	2334	24192	69739
INE10000	1992	63027	102423	128086	24818	13262	20303	42286	4530	6255	3410	33261	116701
INF10000	1992	230328	395028	507931	84675	86793	192225	245330	73613	47469	9625	144498	511037
INQAD412	1992	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1992	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1992	100	100	100	100	100	100	100	100	100	100	100	100
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INB10000	1993	154096	71949	121472	61610	33805	32064	364	2772	1744	87169	20472	37531
INC10000	1993	66252	27187	52978	26068	13172	17228	2599	1710	473	18918	14840	17438
IND10000	1993	73643	33922	46469	20207	18405	23421	2677	3064	67	25275	9390	10654

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INE10000	1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	21639	15661
INF10000	1993	483274	233388	399517	196845	111821	176598	19599	11926	3509	193964	84101	104301
INQAD412	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1993	100	100	100	100	100	100	100	100	100	100	100	100
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IN 513	1994	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1994	14521	37547	41106	11205	20128	5360	28275	0	0	19406	65106	76704
INB10000	1994	34066	88084	96434	26288	47219	12573	66332	0	0	45526	152736	179946
INC10000	1994	17832	38992	46845	16024	25159	29823	23390	1794	514	25408	44849	70600
IND10000	1994	10971	36397	35467	8674	17011	0	20721	0	0	13125	40261	72924
INE10000	1994	15823	47449	92236	31296	41942	9828	30129	2012	653	40037	52302	110523
INF10000	1994	100005	257725	347790	108697	168819	77121	176987	5622	1723	163872	369013	533198
INQAD412	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1994	100	100	100	100	100	100	100	100	100	100	100	100
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INB10000	1995	169429	19093	58015	115942	108548	13774	6762	166	740	0	0	3282
INC10000	1995	86675	35166	33980	46460	52865	7381	3830	243	523	329	966	4044
IND10000	1995	54302	20107	16345	51746	39960	8070	3279	655	498	857	596	786
INE10000	1995	110561	57811	46682	84669	61351	12427	4813	608	665	825	1636	4209
INF10000	1995	541463	165495	204787	364854	328958	49592	22748	1501	2848	1704	3843	17034
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INQAD413	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1995	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1996	100	100	100	100	100	100	100	100	100	100	100	100
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INB10000	1996	11249	6283	7646	15683	5812	10540	2667	20757	16318	29216	66990	63022
INC10000	1996	6472	4000	6638	10147	4472	7786	1542	5188	11529	21123	24489	40490
IND10000	1996	2428	2416	3330	4140	3759	4164	410	1721	2643	3442	8501	21277
INE10000	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139
INF10000	1996	33922	21287	27852	49708	22230	41186	8462	46250	71112	106468	163947	232805
INQAD412	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1996	100	100	100	100	100	100	100	100	100	100	100	100

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IN 513	1997	100	100	100	100	100	100	100	100	100	100	100	100
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INB10000	1997	46259	198858	139016	172560	35018	59425	22113	7515	0	3986	11721	47604
INC10000	1997	34726	74263	69844	67281	53779	34287	7765	1238	96	1734	7715	21475
IND10000	1997	20358	83597	60259	62467	35476	15273	14738	5202	1005	4075	5063	32643
INE10000	1997	48119	138138	123156	62596	90294	31642	27906	5202	1021	4088	7181	32654
INF10000	1997	190650	607314	490294	446614	264467	185113	85331	20608	1649	14483	39307	150230
INQAD412	1997	100	100	100	100	100	100	100	100	100	100	100	100
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INQAD512	1997	100	100	100	100	100	100	100	100	100	100	100	100
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INA10000	1998	60894	39273	29136	10891	361	0	0	0	12114	15658	13922	38400
INB10000	1998	142855	92133	68352	25550	847	0	0	0	28419	36732	32660	90087
INC10000	1998	59944	48938	44590	16678	3608	102	0	0	12752	21081	19833	42941
IND10000	1998	78855	50112	38323	10245	2418	732	0	0	14059	18101	21884	45247
INE10000	1998	141708	78165	69530	21772	4050	906	0	50	13991	43164	39459	70919
INF10000	1998	508739	323750	269460	94510	12558	1490	0	73	81459	149115	135787	301173
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INQAD413	1998	100	100	100	100	100	100	100	100	100	100	100	100
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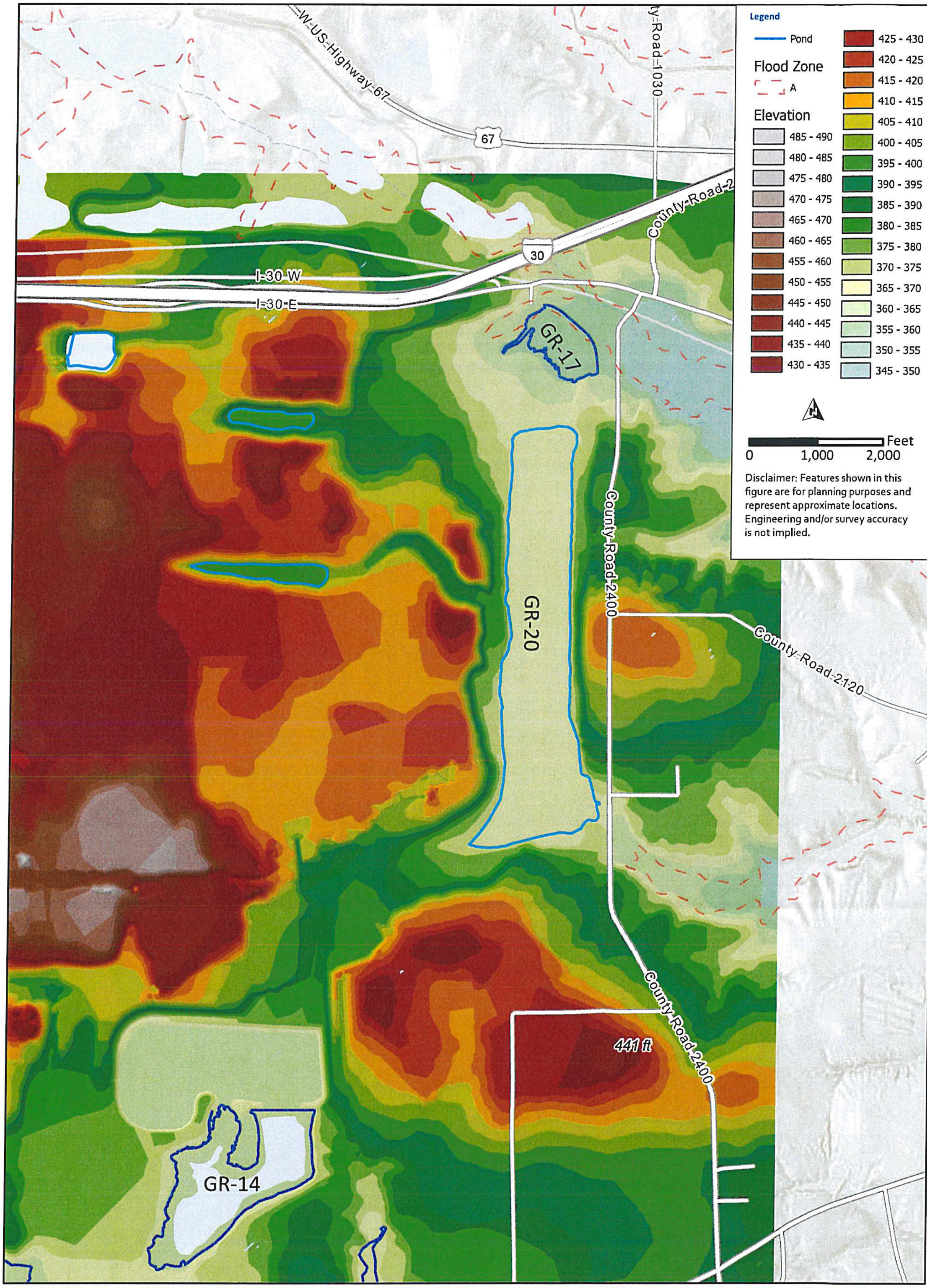


Attachment 2 Proposed Reservoir Site with 100-Year Floodplain Overlay

DEVELOPMENT AGREEMENT
BETWEEN
LUMINANT GENERATION COMPANY LLC,
LUMINANT MINING COMPANY LLC,
AND
NORTHEAST TEXAS MUNICIPAL WATER DISTRICT

DATED JUNE 7, 2021

TABLE OF CONTENTS

LIST OF EXHIBITS

DEVELOPMENT AGREEMENT

This Development Agreement (the "Agreement") is entered into between the Northeast Texas Municipal Water District, a conservation and reclamation district created in 1953 under Article XVI, Section 59 of the Texas Constitution ("NETMWD"), whose address is 4180 Highway 250 South, Hughes Springs, Texas, and Luminant Generation Company LLC, a Texas limited liability company and Luminant Mining Company LLC, a Texas limited liability company (together, "Luminant"), with principal offices at 6555 Sierra Drive, Irving, Texas (NETMWD and Luminant are sometimes individually referred to as a "Party", and together as the "Parties").

RECITALS

WHEREAS, Luminant is the owner of the property known as the Monticello Winfield South Mine, located in or near Winfield Texas, as more particularly described on *Exhibit A* attached hereto and made a part hereof (the "Property" or the "Land");

WHEREAS, NETMWD was created by the Texas Legislature to, among other things, serve the water needs of its member cities and to manage the Big Cypress Creek Basin (the "Basin") and associated reservoirs, including Lake O' the Pines;

WHEREAS, NETMWD seeks additional water supply in the upper end of the Basin for beneficial downstream uses including industrial, environmental, water quality and supply during critical low-flow and drought conditions within the Basin;

WHEREAS, the Property is located within the Tankersley Creek region of the Basin ("Tankersley Creek"), said Property having been permitted for mining operations by Luminant and now being subject to the reclamation requirements of the Railroad Commission of Texas ("RRC"), which requirements are codified in 16 Texas Administrative Code § 12.1 et seq. (the "Coal Mining Regulations") and governed by Permit No. 34F, issued by RRC to Luminant, as amended from time to time (together with the other permits listed herein, the "Permits") and secured by a reclamation performance bond (the "Bond"), posted by Luminant, until completion of all mine reclamation obligations (the "Reclamation");

WHEREAS, the Property is also subject to the rules and regulations of various other regulatory agencies, including but not limited to, the Texas Commission on Environmental Quality ("TCEQ") for water quality and water supply authorizations and the United States Army Corps of Engineers ("USACE") with regard to impacts on jurisdictional wetlands from Luminant's prior mining activities and mitigation of the same (the regulations, collectively, the "Environmental Regulations");

WHEREAS, within the Property lies that certain final mining pit G-129 (henceforth referred to as proposed "Pond GR-20") that will be interconnected by hydrology and/or pumping operations with Pond GR-17 and proposed Ponds GR-18 and GR-19, as shown on *Exhibit B* attached hereto and made a part hereof (the "Ponds");

WHEREAS, Pond GR-18 is part of an approximately 145-acre watershed and Pond GR-19 is part of an approximately 135-acre watershed, both of which drain by gravity into Pond GR-20 in addition to the approximately 535-acre watershed that includes Pond GR-20; and

WHEREAS, upon completion of the Reclamation, the parties anticipate that Pond GR-20 will have the capacity to impound and store approximately 6,810 acre-feet of water on approximately 143 surface acres of land with a total watershed of approximately 815 acres, as more particularly described on *Exhibit C* attached hereto and made a part hereof (the proposed "GR-20");

WHEREAS, water from the proposed Pond GR-20 will have the ability to be pumped into pit GR-17 or directly into upstream tributaries of the Basin; and

WHEREAS, Pond GR-17 is a part of a 147-acre watershed that drains into Pond GR-17 and contains a concrete spillway from which water can be released into Tankersley Creek; and

WHEREAS, there has been increasing state legislative interest in the feasibility and desirability of converting quarries and surface mine pits for use as water storage reservoirs to enhance the state's available water supply;

WHEREAS, NETMWD has found that the water from the proposed Pond GR-20, if made available to the Basin, will be put to a beneficial use, serve a public purpose, be in the best interests and welfare of the public, and provide long-term benefit to the environmental condition of the Basin, including improved water quality, seasonal flows and the reintroduction, together with U.S. Fish and Wildlife Service and Texas Parks & Wildlife Department, of the American paddlefish (Polyodon spathula) to the Basin;

WHEREAS, NETMWD desires to acquire the right to store water in and release water from the proposed Pond GR-20 and Pond GR-17 to tributaries of the Basin for the furtherance of the above purposes;

WHEREAS, Luminant desires to grant, upon completion of the Reclamation, to NETMWD access to Pond GR-20 for water storage, management, water quality testing and release into tributaries of the Basin, provided that 1) NETMWD obtains the necessary water rights from TCEQ (the "Water Rights") for such project and 2) the RRC declares the Ponds permanent for purposes of Reclamation, which is subject to: (a) Luminant's ability to remain in compliance with the Coal Mining Regulations, the Permits, the Environmental Regulations and any other rules and regulations covering its reclamation obligations or its occupancy of the Land; and (b) the final approval by the RRC of all necessary permit revisions, release of reclamation performance Bond obligations and the closure of the Land from all other environmental Permits, the Environmental Regulations and from any other programs or permits covering the Reclamation obligations (the "Releases");

WHEREAS, NETMWD could be a beneficiary of the Reclamation activities undertaken by Luminant if these approvals from the TCEQ and RRC are obtained, which would facilitate improved quality and seasonal quantity of environmental flows in the Basin;

WHEREAS, NETMWD is authorized to enter into this Agreement pursuant to its enabling legislation in Section 14, Chapter 78, Acts of the 53rd Legislature, Regular Session, 1953 (article 8280-147, Vernon's Texas Civil Statutes) and other applicable laws;

WHEREAS, the NETMWD Board of Directors authorized the execution of this Agreement on May 24, 2021;

WHEREAS, NETMWD is located in the Region D Regional Water Planning Group area pursuant to designations made by the Texas Water Development Board to implement the provisions of Senate Bill 1 of the Texas Legislature, Regular Session, 1997, which requires all regions of the state and all water supply agencies within such regions to develop viable water supply plans over a fifty (50) year planning cycle;

WHEREAS, Luminant and NETMWD acknowledge that this Agreement is binding upon the NETMWD and Luminant, and their respective heirs, successors and assigns for the Term (defined herein) of this Agreement; and

WHEREAS, a memorandum of this Agreement is to be recorded in the Real Property Records of Titus County.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the parties agree as follows:

SECTION 1. AUTHORITY, CONSIDERATION, TERM

1.1. Authority. Authority for NETMWD to enter into this Agreement exists under its enabling legislation in Section 14, Chapter 78, Acts of the 53rd Legislature, Regular Session, 1953 (article 8280-147, Vernon's Texas Civil Statutes), and such other statutes as may be applicable.

1.2. Consideration. The benefits to the Parties set forth in the Recitals and herein, plus the mutual promises expressed herein, are good and valuable consideration for this Agreement, the sufficiency of which is acknowledged by the Parties.

1.3. Effective Date. This Agreement shall be effective on the date this Agreement is fully executed by both Parties.

1.4. Term. The term of this Agreement will commence on the Effective Date and continue for twenty-five (25) years (the "Term").

1.4.1. Extensions to Term. Prior to the termination of the Term, and with one hundred eighty (180) days written notice to the other Party or any of its respective successors or assigns, either Party may extend this Agreement for additional periods of five (5) years each if either (i) the obligations associated with the Permits, the Bond, the Environmental Regulations and other rules and regulations covering Reclamation have not been fully and finally met, or (ii) NETMWD has not successfully obtained the necessary Water Rights; provided, however, that (i) neither party is in material breach of the

Agreement, and (ii) such additional periods do not cumulatively exceed the limitations of State law.

1.4.2. Termination Right. In the event that, prior to the termination of the Term, a Party has used commercially reasonable efforts to satisfy the Conditions Precedent, as defined herein, for which such Party is responsible, but such Party is unable to do so due to no fault of its own, then with thirty (30) days prior written notice to the other Party or any of its respective successors or assigns, such Party may terminate this Agreement. The Parties contemplate that such a termination right event could include, without limitation, (a) a state or federal agency's failure to approve an application or request by Luminant in pursuit of the Project that will allow Luminant to remain in compliance with the Coal Mining Regulations, the Permits, the Environmental Regulations and any other rules and regulations covering its reclamation obligations or its occupancy of the Land and to obtain the Releases; (b) failure by the TCEQ to grant NETMWD the necessary Water Rights under terms substantially sufficient for the Project, as described in Section 2.1 below, and (c) the discovery of any water quality impairment in Ponds GR-17 or GR-20 that would prevent NETMWD from releasing or discharging water into the Basin under applicable TCEQ water quality standards. For purposes of this Section 1.4.2, a Party is not required to file a lawsuit to appeal a decision of a state or federal agency related to an the agency's action on an application or request in furtherance of the Project in order for the Party to be considered under this Agreement to have engaged in "commercially reasonable efforts"; provided, however, that a Party may in its sole discretion so appeal an agency decision.

SECTION 2. PROJECT; RIGHTS AND RESPONSIBILITIES; REPRESENTATIONS

2.1. Project. The "Project" established by the Agreement will be 1) the Reclamation of Pit G-129 and associated areas to leave in place the Ponds in a manner that will allow for the capture and storage of approximately 6,810 acre-feet of water in and the release of such water from the Ponds GR-17 and GR-20 to tributaries of the Basin by NETMWD, and 2) the acquisition of the necessary Water Rights by NETMWD for the storage of approximately 6,810 acre-feet of water and the release of an annual yield of at least 500 acre-feet of water per year from that storage into tributaries of the Basin as and when NETMWD deems appropriate, all in accordance with applicable law.

2.2. Luminant's Rights and Responsibilities. Luminant shall have the following obligations and responsibilities related to the Project:

2.2.1. Reclamation. So long as any portion of the Property is under the Bond or otherwise subject to an Environmental Regulation or a Permit, Luminant shall have the following rights and responsibilities related to the Ponds or Pond GR-20:

2.2.1.1. performance of the Reclamation, at its sole cost and in accordance with Coal Mining Regulations, the Permits, the Bond and any other rules and regulations covering Reclamation obligations on the Property (including pit G-129);

2.2.1.2. full and sole authority and liability over the Reclamation operations and to make any regulatory decisions regarding the Ponds, including those related to their development;

2.2.1.3. sole, exclusive authority to consult with RRC, TCEQ, USACE or any other agency or entity with jurisdiction over the mining and Reclamation obligations on the Land, with the exception of NETMWD's authority to consult with TCEQ regarding water rights and permitting matters related to the Project; and

2.2.1.4. no real property title to or liability for the Ponds or associated properties or any portion thereof will transfer to the NETMWD; and

2.2.1.5. no access or inundation easement interest in Pond GR-20 or Pond GR-17 or any portion thereof will transfer to NETMWD until Closing, and such will not transfer except as expressly stipulated in this Agreement.

2.2.2. Existing Structures. Luminant shall leave in place any existing concrete infrastructure associated with Pond GR-20 or Pond GR-17, including but not limited to concrete spillways that allow for the transportation of stored water into the Basin.

2.2.3. Water Rights. Luminant shall coordinate with and not impede NETMWD's efforts to secure the Water Rights.

2.2.4. NETMWD's Access and Inundation Easement. Upon completion of the Reclamation and subject to the Conditions Precedent, as defined herein, Luminant shall grant to NETMWD and NETMWD's successors and assigns: (a) a perpetual, permanent non-exclusive easement on, over, across and through that portion of the Property more particularly described on *Exhibit D* attached hereto and made a part hereof (the "Easement Area") for 1) the inundation, overflow, flood, and submersion of the land within the perimeters of Pond GR-20 and Pond GR-17, and of any land within the Easement Area used for the transportation of water between Pond GR-20 and Pond GR-17 or for the transportation of water from Pond GR-20 or Pond GR-17 to tributaries in the Basin, the use of any existing infrastructure associated with Pond GR-20 and Pond GR-17, including but not limited to concrete spillways that allow for the transportation of stored water into tributaries of the Basin, 2) pedestrian and vehicular ingress and egress to the Pond GR-20 and Pond GR-17, together with the right to install, operate and maintain, at NETMWD's sole discretion, (i) certain pumping facilities at Pond GR-20 and Pond GR-17 including a pump station and discharge line, as more particularly set forth on *Exhibit E* attached hereto and made a part hereof (collectively, the "Pumping Facilities"), at NETMWD's sole cost and expense, and (ii) a power line for the operation of such pumping facilities within the Easement Area, and 3) water quality monitoring and testing of the Ponds, with any such monitoring and testing to Ponds GR-18 or GR-19 to occur only after NETMWD provides reasonable notice to Luminant that such testing will occur (the "Easement"). Such Easement will be in the form attached hereto as *Exhibit F*, recorded in the Real Property Records of Titus County, Texas, and will run with the Land. The granting of this Easement does not create an obligation by NETMWD to store or release water from the Pond GR-20 or Pond GR-17 or to maintain existing pumping structures associated with the storage of water in and release of water from Pond GR-20 or Pond GR-17.

2.2.5. Luminant's Access. Subject to NETMWD's rights under the Easement and NETMWD's right to store water covered by the Water Rights within Pond GR-20 pursuant to Section 2.3.4 below, Luminant shall have ongoing, full and unrestricted access to the Ponds and Pond GR-20.

2.2.6. Maintenance. Upon completion of the Reclamation, Luminant shall, at Luminant's sole cost and expense, maintain the Pond GR-20 and the Ponds in compliance with all applicable laws for the purposes expressed herein; provided, however, that NETMWD shall be responsible, at NETMWD's sole cost and expense, for all maintenance related to the intake, release and/or use of the water contained in Pond GR-20 and all repairs resulting from NETMWD's negligence in operation of Pond GR-20. Luminant shall not alter the Ponds or Pond GR-20 in any manner that would prevent either 1) water being stored in and flowing from ponds GR-18 and GR-19 into Pond GR-20, or 2) water from Pond GR-20 being transferred to, stored in, and released from Pond GR-17 into the Basin. Luminant shall not divert water from the Ponds, Pond GR-20 or the watersheds serving the Ponds and Pond GR-20 for any purpose. This obligation shall run with the land and shall be binding upon Luminant's successors and/or assigns in title. This paragraph shall survive Closing.

2.2.7. Preserving the Watersheds. Luminant shall have an ongoing obligation to help preserve the 815-acre watershed that serves Pond GR-20 and the 147-acre watershed that serves pit GR-17. Luminant shall not take any action to alter the contributing 815-acre watershed of Pond GR-20 or the contributing 147-acre watershed of Pond GR-17 so as to prevent water within these watersheds from reaching Pong GR-20 and Pond GR-17, respectively. Luminant shall not take any action that would cause water quality contamination of the contributing 815-acre watershed of Pond GR-20 or the contributing 147-acre watershed of Pond GR-17. This obligation shall run with the land and shall be binding upon Luminant's successors and/or assigns in title. This paragraph shall survive Closing.

2.2.8. Water Storage Agreement. Upon completion of the Reclamation and subject to the Conditions Precedent, as defined herein, Luminant shall execute a Water Storage Agreement with NETMWD and NETMWD's successors and assigns, authorizing NETMWD the right to store approximately 6,810 acre-feet of water in Pond GR-20 and subsequently discharge such water into tributaries of the Basin or into Pond GR-17 for storage before subsequently discharging such water from Pond GR-17 into tributaries of the Basin (the "Water Storage Agreement"). The Water Storage Agreement will be in accordance with the Water Rights issued by TCEQ, will obligate Luminant (or its successors) to abide by the terms specified in Sections 2.2.6 (Maintenance) and 2.2.7

(Preserving the Watershed) above, will be for a term of not less than 50 years, and will only be enforceable so long as 1) sufficient water is available to allow for the storage of approximately 6,810 acre-feet of water and 2) water reaching Ponds GR-17 and GR-20 is of a quality that meets applicable TCEQ water quality standards and can be released into the Basin for a beneficial use. The Water Storage Agreement will be in the form attached hereto as *Exhibit I*, recorded in the Real Property Records of Titus County, Texas, and will run with the Land.

2.3. NETMWD's Rights and Responsibilities. NETMWD shall have the following obligations and responsibilities related to the Project:

2.3.1. Reclamation. NETMWD shall coordinate with and not impede Luminant's efforts to obtain approval from the RRC to undertake the Project. NETMWD will use Best Management Practices ("BMPs") in the installation and operation of its Pumping Facilities at Pond GR-20 or Pond GR-17 to ensure minimal impacts to the water quality and to the stability or productivity of surrounding vegetated landscape. NETMWD assumes no liability for any Reclamation activities, now or in the future; except that NETMWD shall assume liability for any actions performed by NETMWD with regard to the Ponds and related Pumping Facilities that are inconsistent with this Agreement and that impede with Luminant's release of the Reclamation obligations or would constitute a violation of the Coal Mining Regulations.

2.3.2. Water Use Permit. NETMWD shall consult with and secure from TCEQ the necessary Water Rights for the Project, and shall deliver to Luminant a copy of the Water Use Permit issued by TCEQ for the Water Rights. In its attempts to obtain the Water Rights, NETMWD shall ensure that Luminant is apprised of and has the opportunity to participate in all meetings with the TCEQ or any other governmental agency.

2.3.3. NETMWD-Added Improvements. NETMWD shall own and maintain, at NETMWD's sole cost and expense, any improvements added to the Land or that NETMWD otherwise installs on the Land, including but not limited to the Pumping Facilities necessary or appropriate for the transfer of water from Pond GR-20 for the benefit of the Basin (the "NETMWD-Added Facilities"). Any such NETMWD-Added Facilities shall be installed only within the Easement Area and in accordance with all terms and conditions of the Easement. This paragraph shall survive Closing.

2.3.4. Water Storage Agreement. Upon completion of the Reclamation and subject to the Conditions Precedent, as defined herein, NETMWD shall execute the Water Storage Agreement addressed in Section 2.2.8 above, committing to pay Luminant $100,000 per year for the right to store approximately 6,810 acre-feet of water within Pond GR-20 and subsequently discharge such water directly into tributaries of the Basin from the north, east, or south sides of the perimeter of Pond GR-20 and the adjacent property lines of the Property on each of those sides of such perimeter, or after first discharging such water into Pond GR-17 for temporary storage prior to discharge into tributaries of the Basin. The execution of such Water Storage Agreement does not create an obligation by NETMWD to store or release water from Pond GR-20 or to maintain existing pumping structures (specifically excluding any NETMWD-Added Facilities) associated with the storage of water in and release of water from Pond GR-20 or Pond GR-17.

2.3.5. Utilities. NETMWD shall, at NETMWD's sole cost and expense, procure all required power for the operation of the Pumping Facilities and shall cause any necessary powerlines to be installed within the Easement Area and in accordance with the terms and conditions of the Easement. This paragraph shall survive Closing.

2.3.6. TPDES Permit. If required by the TCEQ, NETMWD shall secure and maintain a TPDES discharge wastewater permit for NETMWD's discharge of water from Pond GR-20 and from Pond GR-17 into tributaries of the Basin. This paragraph shall survive Closing.

2.3.7. Water Quality. During the course of NETMWD infrastructure development and normal operations, NETMWD shall employ Best Management Practices to minimize negative impacts to water quality within its control and will not impede the necessary surface water discharge monitoring from the Impoundment conducted by Luminant until release of all RRC and TCEQ obligations. NETMWD will support as needed Luminant's efforts to address all Impoundment and discharge water quality concerns.

2.3.8. Water Quality Testing. NETMWD will perform, as needed, water quality testing of the water in Ponds GR-17 and GR-20 to ensure that there is no water quality impairment that would prevent NETMWD from releasing or discharging water into the Basin that meets applicable TCEQ water quality standards.

2.4. Miscellaneous. For clarity, NETMWD shall not be required to provide any financial support to Luminant for the development of the natural elements of the Reclamation plan which are regulated by the RRC and will not have any authority or ability to direct the development or change those aspects which are regulated by the RRC.

For clarity, Luminant shall not be responsible for the costs or expenses associated with constructing, nor be required to provide any financial support to NETMWD to construct or maintain, any NETMWD-Added Facilities such as power supply, pump stations or pipeline infrastructure. Further, Luminant shall not be responsible for the costs or expenses associated with completing the application for or procuring of the Water Rights.

Notwithstanding Luminant's regulatory control of the Ponds and those portions of the Property covered by the Permits or the Bond and that Luminant can design Pond GR-20 and amend such design from time to time at its sole discretion, Luminant will allow the NETMWD to review the design and any subsequent changes to it, and will endeavor, to the extent Luminant determines to be feasible in its sole judgment, to accommodate NETMWD's desires and future uses of Pond GR-20 in finalizing Pond GR-20 design and in the developing of Pond GR-20

SECTION 3. RECLAMATION, DISCLAIMER; DISCLOSURES RELATED TO THE PITS

3.1. Reclamation Standards and Requirements. All Reclamation of the Ponds undertaken by Luminant will be in accordance with the Coal Mining Regulations, the Permits, the Bond, the Environmental Regulations and any other rules and regulations of other governmental agencies covering reclamation obligations, including but not limited to the Environmental Regulations related to former mining land or other real property impacted in the course of mining operations. The Parties acknowledge that there are currently open and active environmental permits attached to the Land, a complete listing of which is attached hereto as *Exhibit G*. Luminant's compliance with applicable regulations shall be determined solely by the governmental agency with enforcement jurisdiction over those regulations.

The timing and sequencing of the Reclamation will be determined and completed at the sole discretion of Luminant consistent with the Permits, the Coal Mining Regulations and the Environmental Regulations.

3.2. Environmental Disclaimer. EXCEPT AS SET FORTH HEREIN, LUMINANT DOES NOT AND HAS NOT MADE ANY REPRESENTATION OR WARRANTY REGARDING THE PRESENCE OR ABSENCE OF ANY HAZARDOUS SUBSTANCES (AS HEREINAFTER DEFINED) ON, UNDER OR ABOUT THE PROPERTY OR THE COMPLIANCE OR NONCOMPLIANCE OF THE PROPERTY WITH THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT, THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT, THE RESOURCE CONSERVATION RECOVERY ACT, THE FEDERAL WATER POLLUTION CONTROL ACT, THE FEDERAL ENVIRONMENTAL PESTICIDES ACT, THE CLEAN WATER ACT, THE TEXAS NATURAL RESOURCES CODE, THE TEXAS WATER CODE, THE TEXAS SOLID WASTE DISPOSAL ACT, THE TEXAS HAZARDOUS SUBSTANCES SPILL PREVENTION AND CONTROL ACT, ANY FEDERAL, STATE OR LOCAL "SUPERFUND" OR "SUPER LIEN" STATUTE, OR ANY OTHER STATUTE, LAW, ORDINANCE, CODE, RULE, REGULATION, ORDER OR DECREE REGULATING, RELATING TO OR IMPOSING LIABILITY (INCLUDING STRICT LIABILITY) OR STANDARDS OF CONDUCT CONCERNING ANY HAZARDOUS SUBSTANCES (COLLECTIVELY, THE "HAZARDOUS SUBSTANCE LAWS"). For purposes of this Agreement, the term "Hazardous Substances" shall mean and include those elements or compounds which are contained on the list of hazardous substances adopted by the United States Environmental Protection Agency and the list of toxic pollutants designated by Congress or the Environmental Protection Agency or under any Hazardous Substance Laws. NETMWD is advised that the agronomic or silvicultural practices applicated to Pond GR-20 watershed, or the presence of a threatened or endangered species or its habitat may affect NETMWD's intended use of Pond GR-20. The acknowledgments and agreements of NETMWD set forth in this Section shall survive Closing and shall not be merged therein.

3.3. Disclosures. Luminant hereby discloses to NETMWD, and NETMWD hereby acknowledges, that portions of the Property have been used for a variety of functions related to the operation and maintenance of a mine and the equipment associated with such operation and maintenance. As well, portions of the Land have been used historically by prior owners and/or tenants for farming, hunting and ranching, and in connection with such uses prior owners and/or tenants may have used on the Land fertilizers, insecticides, pesticides, and other potentially hazardous materials commonly used in connection with such operations, and may have operated on the Land gasoline and diesel powered farm equipment and vehicles that typically result in incidental deposits of oil, gasoline, diesel or other hydrocarbons on the Land.

The information referred to in this Section 3.3 is made available without representation by Luminant or recourse to Luminant. NETMWD relies on such information at its own risk. Without limiting the generality of the of the foregoing, NETMWD acknowledges that Luminant has made no representations (expressed or implied) regarding the accuracy of such information, the qualifications of the parties preparing such information, or the conclusions set forth therein.

3.4. No Indemnification. Luminant shall have no obligation to indemnify or hold NETMWD harmless from and against claims, suits, liabilities, costs, losses, DAMAGES, or expenses for bodily injury, death, or property damage caused by, arising from, or relating to the use of Pond GR-20 or Pond GR-17, the Easement Area, or the Pumping Facilities by NETMWD, NETMWD's successors or assigns, or their employees, agents, guests, lessees, licensees or invitees. NETMWD shall have no obligation to indemnify or hold Luminant harmless from and against claims, suits, liabilities, costs, losses, DAMAGES, or expenses for bodily injury, death, or property damage caused by, arising from, or relating to the use of Pond GR-20 or Pond GR-17, the Easement Area, or the Pumping Facilities by Luminant, Luminant's successors or assigns, or their employees, agents, guests, lessees or invitees.

SECTION 4. CONDITIONS TO CLOSE

4.1. Luminant shall have no obligation to grant NETMWD the Easement or execute the Water Storage Agreement and NETMWD shall have no obligation to execute the Water Storage Agreement until the following conditions have been satisfied (the "Conditions Precedent"):

4.1.1. Luminant has received full approval for the Project from the RRC (i.e., approval of a final pit "Reclamation Plan" and approval to make Pond GR-20 permanent);

4.1.2. [Reserved];

4.1.3. NETMWD has secured from TCEQ the Water Rights and provided a copy of the same to Luminant;

4.1.4. NETMWD has determined that the water quality of the water to be collected and stored in Ponds GR-17 and GR-20 will be sufficient to meet applicable TCEQ water quality standards for discharge into the Basin; and

4.1.5. NETMWD has received due authorization and approval from its Board of Directors to enter into this Agreement and the Water Storage Agreement.

4.2. Notwithstanding any other provision of this Agreement, if the Conditions Precedent are not satisfied within the Term of this Agreement, then this Agreement shall terminate and be of no force and effect, and the Parties shall have no further obligations to one another hereunder, except with respect to the obligations described herein as surviving termination of the Agreement.

4.3. The Parties may, by mutual written agreement, extend the Term in accordance with Section 1.4.1 to satisfy any of the Conditions Precedent.

SECTION 5. CLOSING; REPRESENTATIONS & COVENANTS

5.1. Closing Date. The closing shall occur within thirty (30) days after all Conditions Precedent are satisfied (the "Closing"); provided that each Party may, at its option and in its sole discretion and upon written notice to the other Party, waive, on its own behalf but not for the other Party, any Condition Precedent and proceed to Closing.

5.2. Closing Deliverables. At Closing, Luminant and NETMWD shall cause to be delivered the following items, as applicable:

5.2.1. Luminant shall deliver the Easement and the Water Storage Agreement and record the same in the Real Property Records of Titus County;

5.2.2. NETMWD shall deliver its countersignature to the Easement and the Water Storage Agreement; and

5.2.3. NETMWD shall deliver to Luminant the first annual payment under the Water Storage Agreement.

5.3. Luminant's Representations. Luminant represents and warrants to NETMWD:

5.3.1. Luminant has full authority and approval to enter into this Agreement and perform the obligations of Luminant set forth herein.

5.3.2. There are no existing contracts or agreements entered into by Luminant, either recorded or unrecorded, written or oral, affecting the Ponds or the Easement Area, or any portion thereof or the use thereof, except for that certain deed-recorded TCEQ registered landfill footprint; and

5.3.3. Luminant has no knowledge of any pending or threatened condemnation proceedings with respect to the Ponds or the Easement Area.

5.4. NETMWD's Representations and Covenants. NETMWD represents and warrants to Luminant:

5.4.1. NETMWD has full authority and approval to enter into this Agreement and perform the obligations of NETMWD set forth herein.

5.4.2. NETMWD will make every effort to secure the Water Rights from TCEQ in an expeditious manner, and will allow Luminant to participate in the process;

5.4.3. NETMWD agrees that it shall not use Pond GR-20 or allow any use of Pond GR-20 in a manner that is inconsistent with, interferes with, impairs or impedes Luminant's ability to satisfy its reclamation obligations.

SECTION 6. NETMWD'S WAIVER OF GOVERNMENTAL IMMUNITY

6.1. Chapter 271 of the Texas Local Government Code. To the maximum extent allowed by applicable law, NETMWD hereby expressly waives any claim to sovereign or governmental immunity from liability or from suit for purposes of this Agreement, or in any attempt by Luminant to enforce this Agreement or to adjudicate and obtain any appropriate remedies, including but not limited to those available under Texas Local Government Code Section 271.151, et seq., for any claim arising hereunder. NETMWD and Luminant acknowledge and agree that this Agreement is a written agreement stating the essential terms for NETMWD and Luminant to provide goods and services to each other within the meaning of the Texas Local Government Code, Section 271.151. By execution of this Agreement, NETMWD represents that it is authorized to enter into this Agreement.

6.2. Other Law. The Parties do not intend the foregoing waivers to be an exclusive list. It is the Parties' intention that NETMWD waive its governmental immunity for any issues, disputes, suits, actions at law or equity, or actions for declaratory relief, injunctive relief, or mandamus arising from or relating to this Agreement to the fullest extent permitted by the Texas Constitution or any other law of the State of Texas.

SECTION 7. ASSIGNMENT

This Agreement may be assigned by Luminant without the consent of NETMWD to any Luminant affiliated or related entity and Luminant will be released from its obligations under this Agreement upon delivery of a notice of such assignment to NETMWD. Any assignment of Luminant's rights and obligations hereunder to an entity that is not affiliated with or related to Luminant will not release Luminant of its respective obligations under this Agreement until NETMWD has approved the assignment in writing; provided, however, NETMWD shall not unreasonably deny, delay, or condition its approval of the assignment.

Any assignment of NETMWD's rights and obligations hereunder will not be effective unless first agreed to in writing by Luminant, whose consent and agreement shall not be unreasonably withheld.

Prior to the future sale, conveyance or transfer of any portion of the Water Rights, the NETMWD shall give written notice of this Agreement to the prospective purchaser, grantee or transferee, and shall also give Luminant at least ten (10) days' prior written notice of the sale or conveyance.

This Agreement shall be binding upon the Parties, their grantees, successors, assigns, or subsequent purchasers. Any reference to Luminant or NETMWD shall be deemed to and will include the successors or assigns thereof, and all the covenants and agreements in this Agreement shall bind and inure to the benefit of the respective successors and assigns thereof whether so expressed or not.

SECTION 8. EVENTS OF DEFAULT; REMEDIES

No Party shall be in default under this Agreement until notice of the alleged failure of such Party to perform has been given (which notice shall set forth in reasonable detail the nature of the alleged failure) and until such Party has been given a reasonable time to cure the alleged failure (such reasonable time determined based on the nature of the alleged failure, but in no event less than thirty (30) days after written notice of the alleged failure has been given); provided, however, in the event of any default by a Party hereunder, the failure to promptly cure of which could lead to an imminent risk of personal injury, loss of life, or damage to property, such Party shall take such immediate action as is reasonably necessary to avoid or mitigate such consequences. In addition, no Party shall be in default under this Agreement if, within the applicable cure period, the Party to whom the notice was given begins performance and thereafter diligently and continuously pursues performance until the alleged failure has been cured.

The provisions of this Section 8 shall not apply to Section 4 and shall not operate to lengthen the time for performance of the Conditions Precedent or limit the ability of the parties to terminate this Agreement on the date stipulated in Section 4 if the Conditions Precedent have not been satisfied on or before said date.

IF A PARTY IS IN DEFAULT, THE AGGRIEVED PARTY MAY, AT ITS OPTION AND WITHOUT PREJUDICE TO ANY OTHER RIGHT OR REMEDY UNDER THIS AGREEMENT, SEEK ANY RELIEF AVAILABLE AT LAW OR IN EQUITY, INCLUDING, BUT NOT LIMITED TO, AN ACTION UNDER THE UNIFORM DECLARATORY JUDGMENTS ACT, SPECIFIC PERFORMANCE, MANDAMUS, AND INJUNCTIVE RELIEF.

SECTION 9. RECORDATION

This Agreement shall run with the Land, shall be recorded in the real property records of Titus County, Texas after the Effective Date, and shall be binding on Luminant, NETMWD, and their respective successors in title.

SECTION 10. NO PROTEST

As a part of the consideration supporting this Agreement, NETMWD agrees and covenants not to contest, protest, or otherwise challenge any application that Luminant or any subsidiary, affiliate or assignee of Luminant or Vistra Energy Corp., formerly known as Energy Future Holdings Corp. and TXU Corp. (collectively referred to as "Applicant"), may file or make to any local, state or federal agency, including but not limited to the RRC, TCEQ, USACE, and/or the United States Environmental Protection Agency, for any environmental, development, construction, or operation authorization, including, but not limited to any local, state or federal permit, registration or any other authorization for any facility or any portion of a facility, or any other structure or process in Titus County, Texas on the Property and related to the Project, or otherwise take a position adverse to Applicant, in any proceeding, in any form or forum, including, but not limited to, before or to the RRC, the TCEQ, the Texas State Office of Administrative

Hearings, and/or state or federal court related to the Property and/or the Project, save and except any action related to breach, specific performance, or other legal or equitable actions or remedies related to this Agreement or any other acts of Luminant that are contrary to the provisions of this Agreement. NETMWD's agreement and covenant not to contest, protest, or otherwise challenge any such actions or applications includes NETMWD's express agreement and covenant not to file any public comments, requests for opposing party status, motions to overturn, motions for reconsideration, objections or any other administrative or judicial appeals regarding such application or any authorization that Applicant obtains as a result of such application. NETMWD's agreement and covenant not to contest, protest, or otherwise challenge such application also extends to any subsequent amendment or modification of any authorization that Applicant obtains as a result of any such application. NETMWD further agrees and covenants not to seek or pursue revocation of any authorization that Applicant obtains as a result of such application, or to attempt to enjoin, cease or restrain operations under such authorization, or take a position adverse to Applicant in any such revocation or injunction action, or in any other way attempt to otherwise constrain operations under such authorization, in any form or forum whatsoever. The provisions of this Section shall survive Closing, and Luminant may enforce the provisions hereof by any appropriate legal action.

SECTION 11. GENERAL PROVISIONS

11.1. Recitals. The recitals contained in this Agreement: (a) are true and correct as of the Effective Date; (b) form the basis upon which the Parties negotiated and entered into this Agreement; and (c) reflect the final intent of the Parties with regard to the subject matter of this Agreement. In the event it becomes necessary to interpret any provision of this Agreement, the intent of the Parties, as evidenced by the recitals, shall be taken into consideration and, to the maximum extent possible, given full effect. The Parties have relied upon the recitals as part of the consideration for entering into this Agreement and, but for the intent of the Parties reflected by the recitals, would not have entered into this Agreement.

11.2. Notices. Any notice required or permitted to be delivered hereunder shall be in writing and shall be deemed received on the actual receipt by mail, Federal Express or other delivery service, fax, email or hand delivery, addressed to Luminant or NETMWD, as the case may be, at the addresses provided below:

NETMWD:

P.O. Box 955
Hughes Springs, Texas 75656
Attn: Executive Director
E-mail: [redacted]

Luminant:

6555 Sierra Drive
Irving, TX 75039
Attn: General Counsel (Real Estate)
E-mail: [redacted]

11.3. <u>Further Assurances; Cooperation</u>. Each Party shall, from time to time, upon written request, execute and deliver such further instruments and documents as may be reasonably necessary to perform its obligations hereunder or to give full effect to this Agreement.

11.4. <u>Severability</u>. The provisions of this Agreement are severable. If a court of competent jurisdiction finds that any provision of this Agreement is unenforceable, the unenforceable provision shall be replaced, to the extent possible, with a legal, enforceable and valid provision that is similar in tenor to the unenforceable provisions as is legally possible, and the Agreement as so-modified shall be enforced to the greatest extent permitted by law, except when such construction would constitute a substantial deviation from the general intent and purchase of the Parties as reflected in this Agreement.

11.5. <u>No Third-Party Beneficiary</u>. This Agreement is not intended, nor will it be construed to create any third-party beneficiary rights in any person or entity who is not a Party, unless expressly otherwise provided herein.

11.6. <u>Litigation</u>. In the event of any third-party lawsuit or other claim relating to the validity of this Agreement or any actions taken by the Parties hereunder, Luminant and NETMWD intend to cooperate in the defense of such suit or claim, and to use their respective best efforts to resolve the suit or claim without diminution of their respective rights and obligations under this Agreement. The filing of any third-party lawsuit relating to this Agreement will not delay, stop or otherwise affect this Agreement, unless otherwise required by a court of competent jurisdiction.

11.7. <u>Interpretation</u>. The Parties acknowledge that each of them has been actively involved in negotiating this Agreement. Accordingly, the rule of construction that any ambiguities are to be resolved against the drafting Party will not apply to interpreting this Agreement. In the event of any dispute over the meaning or application of any provision of this Agreement, the provision will be interpreted fairly and reasonably and neither more strongly for or against any Party, regardless of which Party originally drafted the provision.

11.8. <u>Authority and Enforceability</u>. NETMWD represents and warrants that this Agreement has been approved by appropriate action of NETMWD, and that the individual executing this Agreement on behalf of the NETMWD has been duly authorized to do so. Luminant represents and warrants that this Agreement has been approved by appropriate action of Luminant, and that the individual executing this Agreement on behalf of Luminant has been duly authorized to do so. Each Party acknowledges and agrees that this Agreement is binding upon such Party and enforceable against such Party in accordance with its terms and conditions.

11.9. <u>Enforcement; No Waiver</u>. This Agreement may be enforced by Luminant or NETMWD by any proceeding at law or in equity. The remedies herein provided shall not be deemed to be exclusive, but shall be cumulative and shall be in addition to all other remedies in its favor existing in law, in equity or in bankruptcy. No subsequent change in the law regarding annexation shall affect the enforceability of this Agreement. The failure of either Party to insist at any time upon the strict performance or any covenant or agreement in this Agreement or to exercise any right, power or remedy contained in this Agreement will not be construed as a waiver or a relinquishment thereof for the future.

11.10. Law; Venue. This Agreement is subject to all applicable state and federal laws and any applicable permits, ordinances, rules, orders and regulations of any local, state or federal governmental authority having or asserting jurisdiction; but nothing contained herein shall be construed as a waiver of any right to question or contest any such law, ordinance, order, rule or regulation in any forum having jurisdiction. The venue for any legal proceeding to enforce or interpret the provisions of this Agreement shall be in Dallas County, Texas, on agreement of the Parties and pursuant to Section 15.020 of the Civil Practice and Remedies Code.

11.11. Execution. This Agreement may be separately executed in individual counterparts and, upon execution, shall constitute one and the same instrument.

11.12. Construction. This Agreement shall be construed fairly and simply, and not strictly for or against either Party. Headings used throughout this Agreement are for convenience and reference only, and the words contained therein shall in no way be held to explain, restrict, modify, amplify or aid in the interpretation or construction of the meaning of the provisions of this Agreement.

11.13. No Partnership or Joint Venture. Nothing in this Agreement or any related document should be construed to create any form of partnership or joint venture among the Parties.

11.14. Multiple Originals. The Parties may execute this Agreement in one or more duplicate originals, each of equal dignity.

11.15. Amendment. This Agreement may only be amended as mutually agreed in a writing duly executed by the Parties.

11.16. Time is of the Essence. It is acknowledged and agreed by the Parties that time is of the essence in the performance of this Agreement.

11.17. Entire Agreement. This Agreement, together with any exhibits attached hereto, constitutes the entire agreement between the Parties with respect to its subject matter, and may not be amended except by a writing signed by all Parties with authority to sign and dated subsequent to the date hereof. There are no other agreements, oral or written, except as expressly set forth herein.

11.18. Coordination of Parties. After this Agreement is fully executed, the Parties agree to continue to regularly communicate and coordinate regarding the development of Pond GR-20 as a water supply and the implementation of the provisions of this Agreement. The Parties agree to execute, acknowledge, and deliver or cause to be executed, acknowledged, and delivered, such instruments and take such other actions as may be necessary, advisable, or convenient to carry out their obligations under this Agreement and under any document, certificate, or other instrument delivered pursuant hereto or required by law. The Parties further acknowledge that it is difficult to anticipate all of the activities, situations, and other factors which may be relevant to them in satisfying their respective obligations under this Agreement. Therefore, the Parties acknowledge that it will be necessary for them to cooperate with each other relative to any unforeseen situation and work together in good faith to address such situation.

[*Remainder of the page intentionally left blank.*]

The parties have executed this Agreement on the day and year written below.

The District:

Northeast Texas Municipal Water District

By: [signature]

Name: Walt Sears, Jr.

Title: Executive Director and General Manager

Date: May 24, 2021

Luminant:

Luminant Generation Company LLC, a Texas limited liability company

By: [signature]

Name: Matt Goering

Title: SVP

Date: 6-7-21

Luminant Mining Company LLC, a Texas limited liability company

By: [signature]

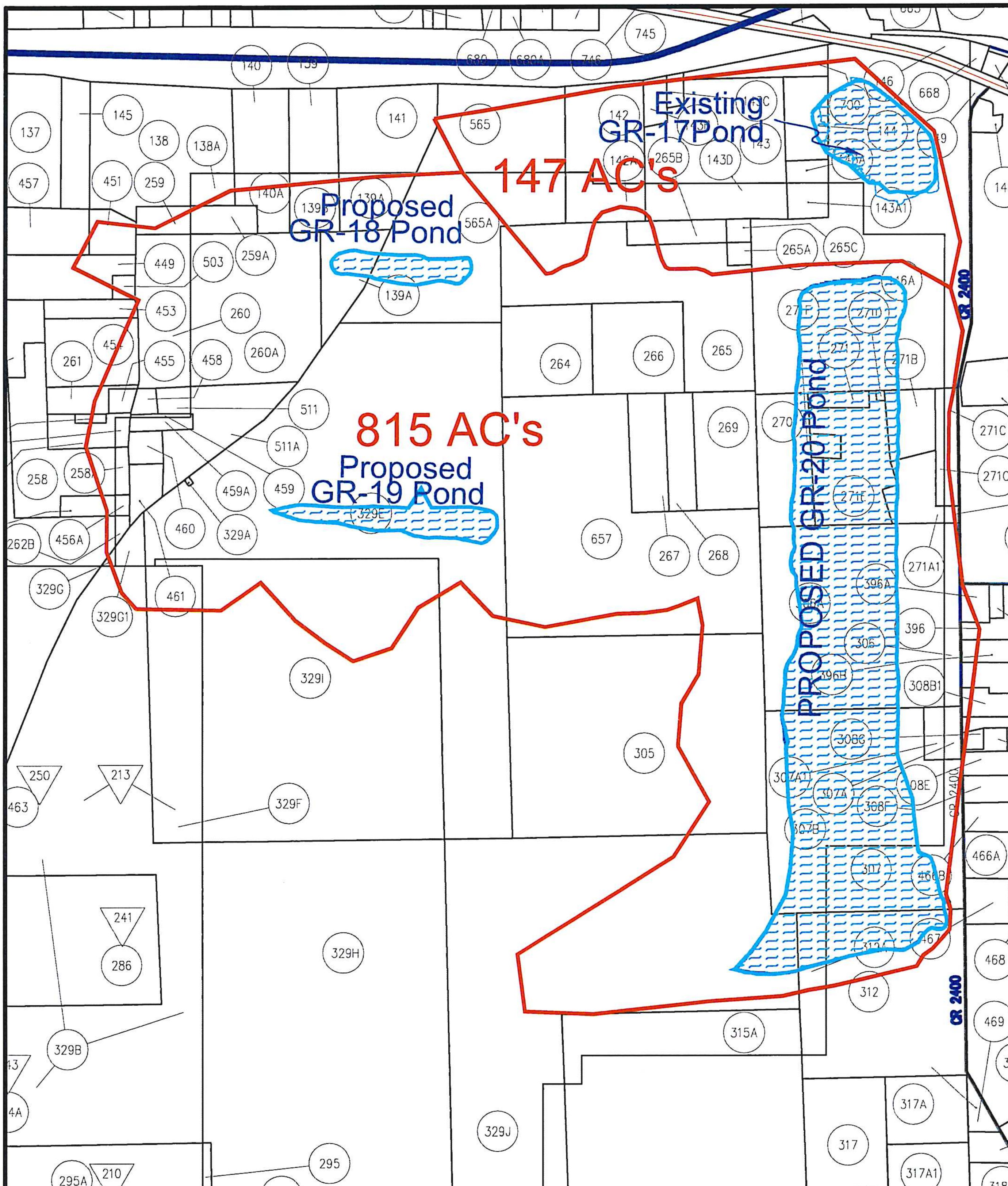
Name: Matt Goering

Title: SVP

Date: 6-7-21

EXHIBIT A

THE PROPERTY



NETMWD Exhibit A	DATE 10/05/2020	MO WS G Area
	DWG BY. cea	Asset Closure

Luminant ENERGY

N W E S

SCALE

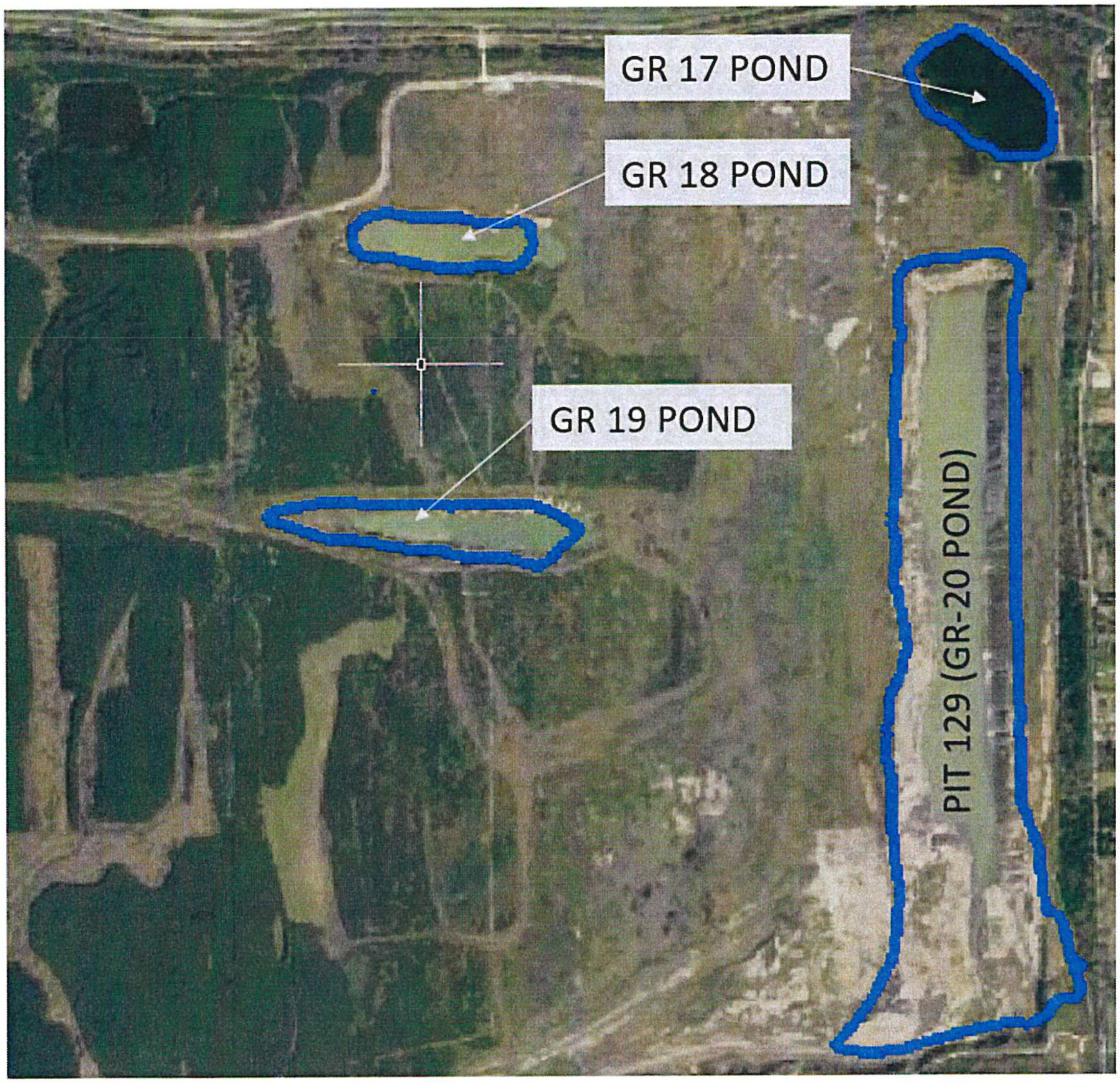
1,200 600 0 1,200 600

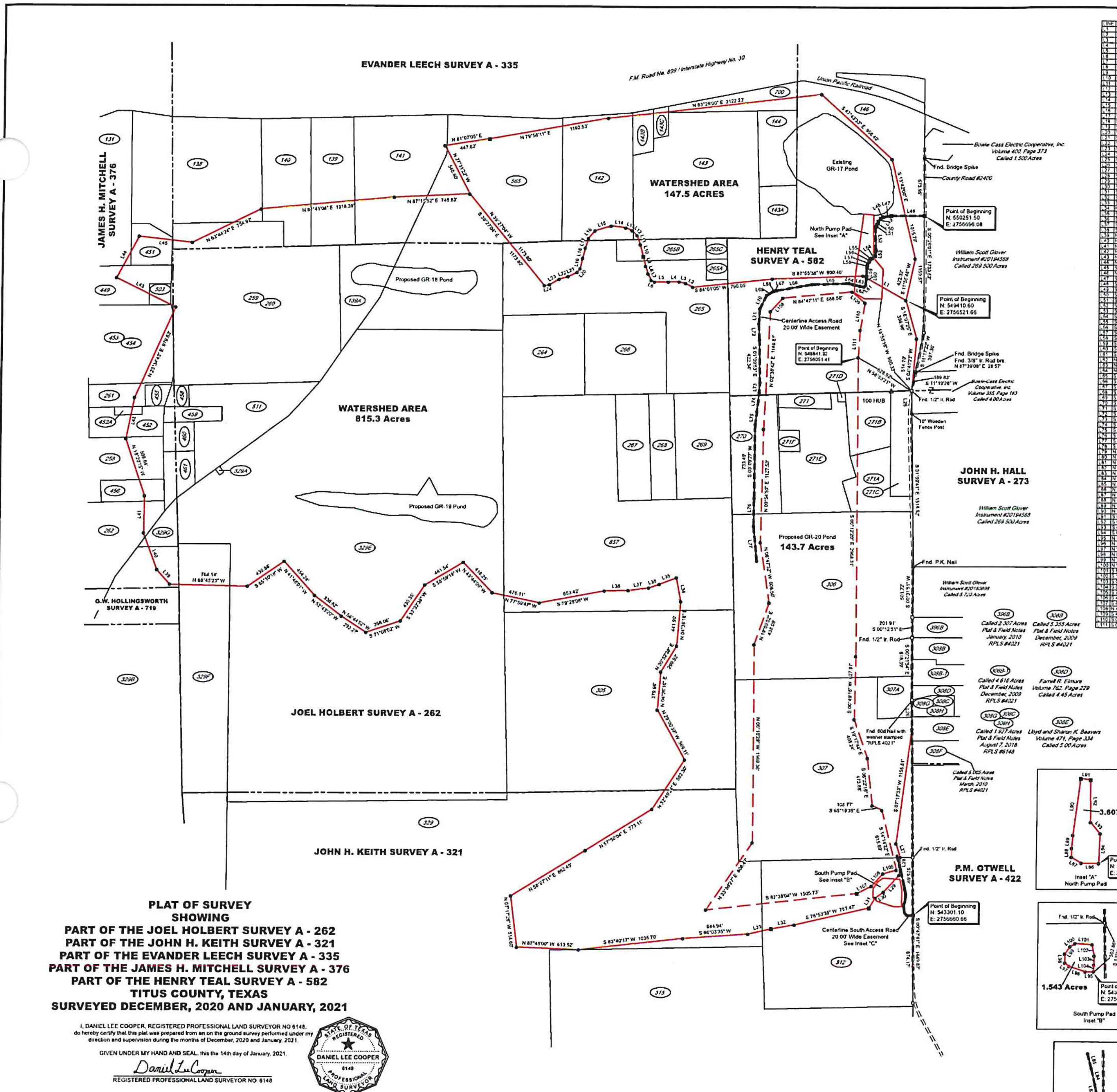
1" = 1,200'

EXHIBIT B

THE PONDS

G AREA Pit 129 POND NAMES AND LOCATIONS





LINE	BEARING	DISTANCE
L1	N 60°41'15" W	495.27'
L2	N 62°17'03" W	81.23'
L3	N 75°58'27" W	67.25'
L4	S 88°18'27" W	106.17'
L5	N 90°00'00" W	135.87'
L6	N 65°58'28" W	37.80'
L7	N 26°04'16" W	73.53'
L8	N 18°16'34" W	77.29'
L9	N 14°24'48" W	99.45'
L10	N 14°24'48" W	122.05'
L11	N 19°41'50" W	95.43'
L12	N 44°35'29" W	68.72'
L13	N 69°39'33" W	71.31'
L14	N 62°52'52" W	143.64'
L15	S 73°03'07" W	158.54'
L16	S 39°46'32" W	99.81'
L17	S 17°14'22" W	100.35'
L18	S 14°29'20" W	104.47'
L19	S 12°52'02" W	105.47'
L20	S 39°20'15" W	45.90'
L21	S 64°54'14" W	100.29'
L22	S 73°08'31" W	93.44'
L23	S 60°08'17" W	159.67'
L24	S 60°02'40" W	53.30'
L25	S 01°07'42" E	230.87'
L26	S 01°00'17" E	257.13'
L27	S 18°08'20" E	142.71'
L28	S 02°45'12" W	178.69'
L29	S 42°23'41" W	229.24'
L30	S 53°55'51" W	109.51'
L31	S 31°17'47" W	113.57'
L32	S 80°15'45" W	435.40'
L33	S 77°01'47" W	233.62'
L34	N 10°58'15" W	240.92'
L35	S 64°35'58" W	179.48'
L36	S 70°47'12" W	111.24'
L37	S 62°40'08" W	203.07'
L38	S 84°45'30" W	235.92'
L39	N 41°12'38" W	193.30'
L40	N 20°08'35" W	357.83'
L41	N 09°32'27" E	368.42'
L42	N 19°52'39" E	416.71'
L43	N 63°25'26" W	553.05'
L44	N 28°02'11" E	484.68'
L45	S 83°21'48" E	520.25'
L46	N 90°00'00" W	328.38'
L47	S 83°09'49" W	75.24'
L48	S 58°15'51" W	35.12'
L49	S 42°09'49" W	32.34'
L50	S 25°29'07" W	34.97'
L51	S 25°02'14" W	23.60'
L52	S 01°08'21" E	235.10'
L53	S 05°21'39" W	55.74'
L54	S 57°34'21" W	40.27'
L55	S 59°29'04" W	19.59'
L56	S 26°02'14" W	23.30'
L57	S 26°35'10" W	33.19'
L58	S 11°53'57" W	28.49'
L59	S 03°52'55" W	21.87'
L60	S 02°09'47" W	87.41'
L61	S 49°25'30" W	23.55'
L62	N 80°06'30" W	41.60'
L63	N 77°19'51" W	64.94'
L64	N 73°30'36" W	42.93'
L65	S 88°18'35" W	369.87'
L66	S 80°00'09" W	355.19'
L67	S 82°34'31" W	21.85'
L68	S 68°46'03" W	19.67'
L69	S 58°08'39" W	75.02'
L70	S 25°42'24" W	148.37'
L71	S 03°18'54" W	147.51'
L72	S 03°08'38" E	191.93'
L73	S 03°09'26" W	101.15'
L74	S 05°14'04" W	198.72'
L75	S 07°10'34" W	130.92'
L76	S 00°36'05" W	278.37'
L77	S 05°03'31" E	346.53'
L78	S 84°52'40" W	51.92'
L79	N 37°10'20" W	34.04'
L80	N 07°44'26" W	77.18'
L81	N 21°31'10" E	34.64'
L82	N 05°47'53" E	72.78'
L83	N 10°53'43" W	81.73'
L84	N 12°57'15" W	166.93'
L85	N 15°00'42" W	153.36'
L86	N 89°27'51" W	174.97'
L87	N 56°49'55" W	113.83'
L88	N 01°04'17" E	88.82'
L89	N 04°45'05" E	130.24'
L90	N 07°17'12" E	569.04'
L91	S 83°32'09" E	98.84'
L92	S 00°33'49" E	424.19'
L93	S 40°48'11" E	148.41'
L94	S 02°15'08" W	296.04'
L95	N 90°00'00" W	53.39'
L96	N 71°50'18" W	157.94'
L97	N 50°33'17" W	52.43'
L98	N 01°30'32" W	90.45'
L99	N 35°01'05" E	97.19'
L100	N 56°20'08" E	60.09'
L101	S 85°58'32" E	189.51'
L102	S 10°51'02" E	113.86'
L103	S 01°30'32" W	90.45'
L104	S 02°02'50" W	95.66'
L105	S 74°54'35" W	130.97'
L106	S 42°58'00" W	169.01'
L107	S 62°32'42" W	159.00'
L108	N 42°27'51" E	164.09'
L109	S 49°30'42" E	171.11'
L110	S 09°38'32" W	275.03'
L111	S 03°33'43" W	271.68'

PLAT OF SURVEY
SHOWING
PART OF THE JOEL HOLBERT SURVEY A - 262
PART OF THE JOHN H. KEITH SURVEY A - 321
PART OF THE EVANDER LEECH SURVEY A - 335
PART OF THE JAMES H. MITCHELL SURVEY A - 376
PART OF THE HENRY TEAL SURVEY A - 582
TITUS COUNTY, TEXAS
SURVEYED DECEMBER, 2020 AND JANUARY, 2021

I, DANIEL LEE COOPER, REGISTERED PROFESSIONAL LAND SURVEYOR NO 6148, do hereby certify that this plat was prepared from an on the ground survey performed under my direction and supervision during the months of December, 2020 and January, 2021.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper

REGISTERED PROFESSIONAL LAND SURVEYOR NO 6148

STATE OF TEXAS REGISTERED DANIEL LEE COOPER 6148 PROFESSIONAL LAND SURVEYOR

TRACT #	GRANTOR	GRANTEE	DATE	VOLUME	PAGE	ACREAGE	NOTES
131	G.B. Young ET AL	Texas Utilities Generating Company	10/23/79	429	308	34.86	Tract No. 2
138	G.B. Young ET AL	Texas Utilities Generating Company	10/23/79	429	308	88.23	Tract No. 3
139	R.W. Stidham ET UX Juanita	Texas Utilities Mining Company	1/12/87	508	871	12.642	
139A	R.W. Stidham ET UX Juanita	Texas Utilities Mining Company	1/12/87	508	871	8.794	
140	Harry B. Hutchins	Texas Utilities Mining Company	5/8/80	434	72	12.865	
141	Delma Gene France ET UX Callie Pauline France	Texas Utilities Mining Company	12/18/85	493	28	22.428	
142	Nickie Paul Smith ET UX Brenda	Texas Utilities Mining Company	12/9/91	687	301	19.954	
143	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	33.22	0.15 acres in county road
143A	Guaranty Bank	Texas Utilities Mining Company	5/15/89	558	82	6	
143B	Len F. Newman	Texas Utilities Mining Company	3/27/93	762	106	1.99	
143C	Donnie R. Newman ET UX Marzelle	Texas Utilities Mining Company	1/28/93	752	224	0.992	
144	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	8.58	0.35 acres in county road
146	George C. Walthall ET UX Pauline	Texas Utilities Mining Company	12/9/92	745	79	112.3	2.21 acres in county roads 0.25 acres in F.M. 899
258	Donald Rex Amerson ET UX Jerry	Texas Utilities Generating Company	8/1/79	427	695	17.9	
259 & 260	G.B. Young ET AL	Texas Utilities Generating Company	10/23/79	429	308	88.23	also in Field Notes dated 3/14/84 RPLS # 3889 called 56.95 acres
261	James L. Prewitt ET UX Deborah	Texas Utilities Generating Company	9/5/79	428	322	3	
262	Jesse F. Haley ET UX Dorothy	Texas Utilities Generating Company	6/15/82	454	323	223.79	
264	Loyd F. Phillips	Texas Utilities Mining Company	3/11/91	648	1	14.987	
265	Frances Montgomery Goates ET AL	Texas Utilities Mining Company	1/31/92	696	176	42.273	0.87 acres in county roads
265A	E. Maxine Wigginton	Texas Utilities Mining Company	1/31/92	696	173	0.99	0.13 acres in county road
265B	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	4.3	
265C	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	1.01	0.13 acres in county road
266	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	14.98	0.11 acres in county road
267	Baxter C. Moore ET UX Martha	Texas Utilities Mining Company	2/3/92	696	280	7.99	0.15 acres in county road
268	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	6	0.11 acres in county road
269	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	13.24	0.28 acres in county road
270	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	12.96	0.38 acres in county road
271	George M. Betts ET UX Quida	First Security Bank	5/12/98	1172	260A	1.79	0.41 acres in county road
271A	A.L. Starnes ET UX Ruth	Texas Utilities Mining Company	7/15/93	784	266	6.37	0.1 acre in county road
271B	Albert V. Freeman ET UX Patricia	Texas Utilities Mining Company	6/29/93	780	236	5.86	0.32 acres in county road
271C	Jerry Wayne Grissom ET UX Sandra	Texas Utilities Mining Company	7/28/93	786	305	5.08	0.7 acres in county road
271D	Virginia Boyd	Texas Utilities Mining Company	12/7/93	812	226	0.157	0.05 acres in county road
271E	Brian Betts ET UX Velda	BLC Corporation c/o TXU Mining Company	12/12/01	1372	168	15.73	0.09 acres in county road
271F	James L. Clayton ET UX Edna	BLC Corporation c/o TXU Mining Company	9/8/00	1275	258	1.01	also 0.12 acres for access easement
305	Hayward Rigano ET UX Jesilin	Texas Utilities Mining Company	9/14/92	732	79	92.89	
306	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	66.7	0.95 acres in county road
307	C.H. Meyer ET UX Carol	Texas Utilities Mining Company	6/30/89	575	144	69.2	
307A	Brian Betts ET UX Velda	BLC Corporation c/o Texas Utilities Mining Company	12/12/01	1372	168	3.27	0.21 acres in county road SW-35
312	Aline B. Arnold	Texas Utilities Mining Company	8/13/93	789	214	50.52	0.7 acres in county road SW-35
315	Ella Jacks ET AL	Texas Utilities Mining Company	4/27/90	606	307	102.53	0.13 acres in county road
329	Jno. B. Stephens Jr. ET UX Elizabeth	Texas Utilities Generating Company	6/23/80	435	214	998.684	Includes Tract 329 - 329B - 329E - 329G
329A	Tri-Water Supply Corporation	Texas Utilities Generating Company	9/19/83	467	751	0.057	
[illegible]B							Field Notes dated 11/5/93 RPLS #1756 called 159.15 acres
[illegible]							Field Notes dated 11/5/93 RPLS #1756 not completed used attached plat called 273.63 acres part of 998.684 acres Tract 329
[illegible]							Field Notes dated 11/5/93 RPLS #1756 called 27.17 acres
[illegible]G							Field Notes dated 11/5/93 RPLS #1756 called 2.28 acres
449	Edwin G. Sisk ET UX Bennie A.	Texas Utilities Generating Company	9/24/82	457	3	9.53	
451	Robert D. Caldwell ET UX Erma	Texas Utilities Generating Company	2/8/80	431	392	3.54	
452	Harvey G. Landrum ET UX Patricia	Texas Utilities Mining Company	4/2/85	484	275	4.588	
452A	Kip Franklin Davis ET UX Cynthia	Texas Utilities Mining Company	4/2/85	484	273	0.5	
453 & 454	O.M. Jackson ET UX Mildred	Texas Utilities Generating Company	8/25/82	456	155	14.94	
455	Aubrey William Lunsford ET UX Roberta	Texas Utilities Generating Company	3/20/80	433	38	1	also referenced in Field Notes dated 8/10/79 RPLS #1234 called 1.09 acres
456	Douglas Hutchings ET UX Jo	Texas Utilities Generating Company	9/15/80	437	455	3.06	
458	Monte A. Harkrider	Texas Utilities Mining Company	11/15/85	491	807	1	
459	Kenneth R. Gordon ET UX Janet	Texas Utilities Generating Company	2/6/79	429	528	1.96	
460	Michael D. Kellam ET UX Debra	Texas Utilities Generating Company	9/27/84	478	338	2.01	
461	Charles Edward Taylor	Texas Utilities Mining Company	7/30/86	501	810	3.1	also referenced in James E. Trammell ET UX Deborah To Texas Utilities Mining Company 7/23/96 Volume 501-Page 578 called 7 acres First Tract & 1.50 acres Second Tract also Field Notes dated 8/11/79 RPLS #1234 called 3.10 acres
503	Carla G. Lehman ET VIR Jimmy	Texas Utilities Generating Company	12/2/82	458	627	1	
511	Charles Dwight Matthews ET UX Sue	Texas Utilities Mining Company	11/15/85	491	803	14.61	
565	Barbara Beth Joyner	Texas Utilities Mining Company	6/15/92	718	161	60.03	1.8 acres in road
657	Hayward Rigano ET UX Jesilin	Texas Utilities Mining Company	9/14/92	732	82	84.34	0.37 acres in county road
700	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	5.03	0.12 acres in county road

NOTES

- Grid Coordinates and Bearings based on Texas State Plane Coordinate System, Texas North Central Zone 4202, NAD 27.
- Distances and acreage recited in surface. Combined Scale Factor = 0.9998552.
- This survey was prepared without the benefit of a Title Commitment.
- No attempt has been made to locate easements, utilities or improvements other than those shown hereon.
- Deed references shown hereon refer to the Deed, Land or Official Public Records of Titus County, Texas and may not reflect current ownership.
- Field Notes Prepared of Even Date.

LEGEND

- Set 1/2" Ir. Rod with cap stamped "LACY SURVEYING PROPERTY CORNER"
- Found Ir. Rod (size noted)
- Set P.K. Nail with washer stamped "RPLS 4021"
- Found P.K. Nail
- Found Right-of-Way Monument
- Point for corner
- Power Pole
- Wire Fence
- Pipe Fence
- Chain Link Fence
- Aerial Power Line
- Pipeline
- Electric Transmission Line
- Road
- Abstract Line

ADDRESS

JOB #: 2020215

CLIENT: Luminant

SCALE: 1" = 500.00'

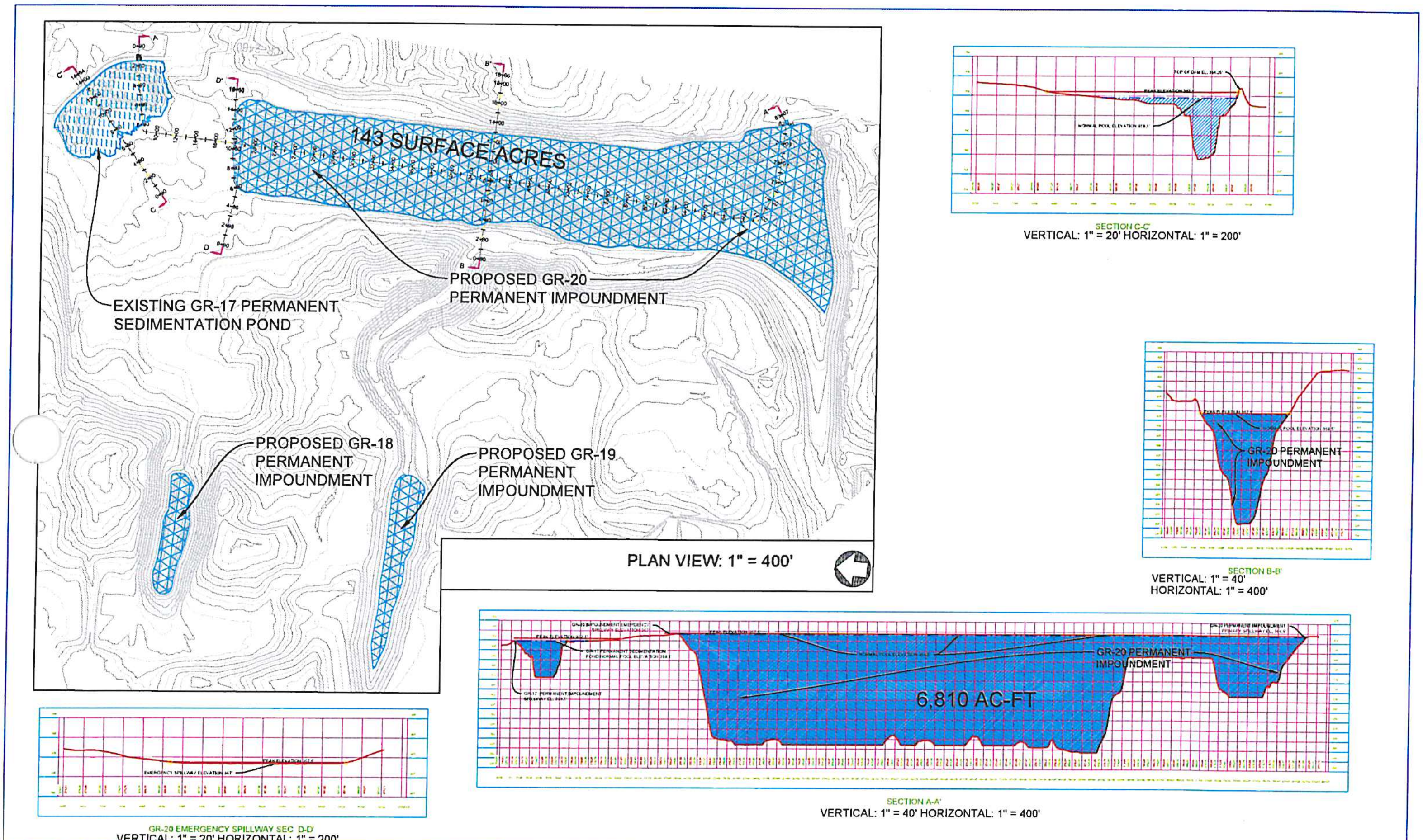
0 100 200 300 400 500 750 1000

LACY SURVEYING

P.O. BOX 738
ARP, TEXAS 75750
PHONE & FAX (903) 859 - 9942
LacySurveying.com
Texas Board of Professional Land Surveying Firm #100299.00

EXHIBIT C

G-129/POND GR-20 IMPOUNDMENT



No.	REVISION	BY	DATE
1	ADDED VOLUME IN AC-FT TO SECTION A-A'	CEA	01/08/2021
1	ADDED SURFACE AREA IN ACRES TO PLAN VIEW	CEA	01/08/2021

MONTICELLO - WINFIELD MINE

MT. PLEASANT, TEXAS

NETMWD EXHIBIT C

PLAN AND PROFILE MAP

LUMINANT MINING COMPANY LLC

DRAWN BY	APPROVAL	DATE	DWG NAME	SHT NO.
CEA	XXX	OCT. 2020	EXHIBIT C.DWG	1 OF 1

EXHIBIT D

EASEMENT AREA

Luminant ENERGY

SCALE

1,200 600 0 1,200 2,400

1" = 1,200

NETMWD Exhibit D			
Winfield South G Area			
DWG BY cea	Asset Closure	DATE	10/06/2020

EXHIBIT E

PUMPING FACILITIES

EXHIBIT E

Two Facility Pump Pads will be constructed at the northeast and southeast ends of the Proposed GR-20 Permanent Impoundment to locate pumping equipment for the controlled release of the contained water. The centroid location of the northeast Facility Pump Pad is approximately, N: 549,766, E: 2,756,140. The centroid location of the southeast Facility Pump Pad is approximately, N: 543,528, E: 2,756,415. Within each of the Facility Pump Pad areas shown in Exhibit D, a "Pump Pad" measuring approximately 40 Ft. X 40 Ft., will be constructed at a relatively flat sloping grade of 1.0% or less for proper drainage. The Pump Pad will be constructed with a 6-inch soil compacted subgrade and approximately 4 inches of crushed limestone surfacing.

LacySurveying.com
Phone (903) 859 – 9942
P.O. Box 736 · Arp, TX 75750
TBPLS Firm #100299-00

January 14, 2021
Field Notes for Luminant Mining Company LLC
1.543 Acres
South Pump Pad
John H. Keith Survey A-321
Titus County, Texas

GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the John H. Keith Survey A-321, Titus County, Texas and being a part of that that certain called 50.52 acre (Luminant Mining Tract #312) that is described in a deed dated August 13, 1993 from Aline B. Arnold to Texas Utilities Mining Company that is recorded in Volume 789, Page 214 of the Deed Records of Titus County, Texas and being more completely described as follows to wit;

METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner, which bears South 12 degrees 28 minutes and 23 seconds West, 502.86 feet, from a 1/2 inch iron rod found for corner at the Northeast corner of said 50.52 acres and in the centerline of County Road #2400 and said beginning iron rod has a Texas North Central Coordinate value of (N: 543,385.74) (E: 2,756,544.09);

Thence across said tract as follows;

North 90 degrees 00 minutes 00 seconds West, for a distance of 83.36 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 71 degrees 50 minutes 18 seconds West, for a distance of 167.94 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 50 degrees 33 minutes 17 seconds West, for a distance of 52.43 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 01 degrees 30 minutes 32 seconds West, for a distance of 90.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 35 degrees 01 minutes 05 seconds East, for a distance of 87.16 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

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North 56 degrees 20 minutes 08 seconds East, for a distance of 60.09 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 85 degrees 58 minutes 32 seconds East, for a distance of 169.51 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 10 degrees 51 minutes 02 seconds East, for a distance of 113.86 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 01 degrees 30 minutes 32 seconds West, for a distance of 90.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 02 degrees 02 minutes 50 seconds West, for a distance of 66.66 feet, to the place of beginning, and containing **1.543 acres.**

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS
REGISTERED
DANIEL LEE COOPER
6148
PROFESSIONAL
LAND SURVEYOR

LacySurveying.com
Phone (903) 859 - 9942
P.O. Box 736 · Arp, TX 75750
TBPLS Firm #100299-00

January 14, 2021
Field Notes for Luminant Mining Company LLC
3.607 Acres
North Pump Pad
Henry Teal Survey A-582
Titus County, Texas

GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the Henry Teal Survey A-582, Titus County, Texas and being a part of that certain called 112.3 acre (Luminant Mining Tract 146) that is described in a deed dated December 9, 1992 from George E. Walthall, et ux Pauline, to Texas Utilities Mining Company that is recorded in Volume 745, Page 79 of the Deed Records of Titus County, Texas and being more completely described as follows to wit;

METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner, which bears North 18 degrees 55 minutes and 16 seconds West, 960.33 feet, from a 1/2 inch iron rod found for corner at the Southeast corner of said 112.3 acres and in the centerline of County Road #2400 and said beginning iron rod has a Texas North Central Coordinate value of (N: 549,424.71) (E: 2,756,278.44);

Thence across said tract as follows;

North 89 degrees 27 minutes 51 seconds West, for a distance of 174.99 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 58 degrees 49 minutes 55 seconds West, for a distance of 113.83 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 01 degrees 04 minutes 17 seconds East, crossing a 20.00 feet wide easement surveyed this same date, for a distance of 88.69 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 04 degrees 46 minutes 05 seconds East, for a distance of 130.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

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North 07 degrees 17 minutes 12 seconds East, for a distance of 569.04 feet, to a point for corner in the edge of a pond;

South 83 degrees 32 minutes 09 seconds East, along the edge of said pond, for a distance of 98.84 feet, to a point for corner;

South 00 degrees 33 minutes 49 seconds East, crossing said easement, for a distance of 424.19 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 40 degrees 48 minutes 11 seconds East, for a distance of 148.41 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 02 degrees 15 minutes 08 seconds West, for a distance of 296.04 feet, to the place of beginning, and containing **3.607 acres.**

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020

GIVEN UNDER MY HAND AND SEAL, this the 14th day of December, 2021.

Daniel Lee Cooper

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS
REGISTERED
DANIEL LEE COOPER
6148
PROFESSIONAL
LAND SURVEYOR

EXHIBIT F

FORM OF EASEMENT

NOTICE OF CONFIDENTIALITY RIGHTS: If you are a natural person, you may remove or strike any or all of the following information from any instrument that transfers an interest in real property before it is filed for record in the public records: your Social Security number or your driver's license number.

EASEMENT AGREEMENT FOR ACCESS AND INUNDATION

Date:	____________
Grantor:	**Luminant Generation Company LLC and Luminant Mining Company LLC**
Grantor's Address:	6555 Sierra Drive Irving, Texas
Grantee:	**Northeast Texas Municipal Water District**
Grantee's Address:	4180 Highway 250 South Hughes Springs, Texas
Easement Property:	The real property located in Titus County, Texas, more fully described in the attached Exhibit A, and as depicted in the attached Exhibit B.
Easement Purposes:	1) For the inundation, overflow, flood and submersion of the land within the perimeters of Ponds GR-20 and GR-17, and of any land within the Easement Property used for the transportation of water between Ponds GR-20 and GR-17 or for the transportation of water from Ponds GR-20 or GR-17 to tributaries in the Big Cypress Creek Basin; and 2) For the use of any existing infrastructure associated with Ponds GR-20 and GR-17, including without limitation concrete spillways, to allow for the transportation of stored water in Ponds GR-20 and GR-17 into tributaries of the Big Cypress Creek Basin; and 3) For providing free and uninterrupted pedestrian and vehicular ingress to and egress from Ponds GR-20 and GR-17 from Interstate Highway 30, County Road 2400, and FM 899 for accessing and facilitating the transportation of stored water in Ponds GR-20 and GR-17 into tributaries of the Big Cypress Creek Basin and conducting water quality monitoring and testing, including roadway and parking area access; and

4) For placing, constructing, operating, repairing, maintaining, rebuilding, replacing, relocating, and removing utility lines, mains, cables, and systems for electric and any other utilities that may become reasonably necessary in the future for facilitating the transportation of stored water in Ponds GR-20 and GR-17 into tributaries of the Big Cypress Creek Basin.

Consideration: The sum of Ten Dollars ($10.00) and other good and valuable consideration, including the conveyance of other property, the receipt and sufficiency of which are acknowledged by Grantor.

Grant of Easement: Grantor, for the Consideration and subject to the Reservations from Conveyance and Exceptions to Warranty, grants, sells, and conveys to Grantee and Grantee's heirs, successors, and assigns an easement over, on, and across the Easement Property for the Easement Purposes, together with all related rights and appurtenances (collectively, "Easement"), to have and to hold the Easement to Grantee and Grantee's heirs, successors, and assigns forever. Grantor binds itself and its heirs, successors, and assigns to warrant and forever defend the title to the Easement in Grantee and Grantee's heirs, successors, and assigns against every person lawfully claiming or to claim the Easement or any part of it, except as to the Reservations from Conveyance and Exceptions to Warranty.

Terms and Conditions: The following terms and conditions apply to the Easement granted by this Easement Agreement for Access and Inundation ("Agreement"):

1. **Character of Easement.** The Easement is nonexclusive and irrevocable. The Easement is for the benefit of Grantee and Grantee's heirs, successors, and assigns.

2. **Duration of Easement.** The duration of this Easement is perpetual.

3. **Reservation of Rights.** Grantor reserves for itself and its heirs, successors, and assigns the right to continue to use and enjoy the surface of the Easement Property for all purposes that do not interfere with or interrupt the use or enjoyment of the Easement by Grantee for the Easement Purposes.

4. **Improvement and Maintenance of Easement Property.**

    a. **Improvements.** Improvements will be at the sole expense of the Grantee. Grantee has the right to construct, install, maintain, replace, and remove pumping facilities, water quality monitoring equipment, concrete spillways, discharge lines and power lines under or across any portion of the Easement Property to allow for the transportation of stored water in Ponds GR-20 and GR-17 into tributaries of the Big Cypress Creek Basin. All matters concerning the configuration, construction, installation, maintenance, replacement and removal of such improvements are at the sole discretion of the Grantee. Grantee also has the right to construct and maintain roadways and parking areas within the Easement Property, subject to Grantor's reasonable approval of the locations thereof, for access to Ponds GR-20 and GR-17.

b. **Maintenance.** Grantor shall maintain the Easement Property for the Easement Purposes. Grantee shall be responsible for all maintenance related to the pumping facilities, concrete spillways, power lines, roadways and parking areas installed by Grantee on the Easement Property.

5. **Notice.** Before accessing the Easement Property for the Easement Purpose of conducting water quality monitoring and testing of Ponds GR-20 and GR-17, Grantee will provide reasonable written notice to Grantor that such testing will occur.

6. **Indemnification**. GRANTEE HEREBY AGREES TO INDEMNIFY AND HOLD GRANTOR HARMLESS FROM AND AGAINST ANY THIRD-PARTY CLAIM OR LIABILITY OR LOSS FROM PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE OF THE EASEMENT BY GRANTEE, ITS SERVANTS, AGENTS OR INVITEES, AS WELL AS THE INSTALLATION, USE, MAINTENANCE, REPAIR OR REMOVAL OF THE FACILITIES DESCRIBED HEREIN BY GRANTEE, ITS SERVANTS, AGENTS OR INVITEES, EXCEPTING, HOWEVER, SUCH CLAIMS, LIABILITIES OR LOSSES TO THE EXTENT DUE TO OR CAUSED BY THE GRANTOR OR GRANTOR'S SERVANTS, AGENTS OR INVITEES.

7. **Equitable Rights of Enforcement.** This Agreement may be enforced by restraining orders and injunctions (temporary or permanent) prohibiting interference and commanding compliance with its terms. The act of obtaining an injunction or a restraining order will not be deemed to be an election of remedies or a waiver of any other rights available at law or in equity.

8. **Amendment.** This Agreement may be amended or terminated only by a written agreement.

9. **Binding Agreement.** This Agreement and all of its terms, provisions, and covenants will apply to, be binding on, and inure to the benefit of the parties and their respective heirs, executors, legal representatives, and assigns.

10. **Governing Law.** This Agreement will be governed by and interpreted under the laws of the State of Texas, regardless of any conflict-of-law rules. Venue is in the county in which the Easement Property is located.

11. **Counterparts.** This Agreement may be executed in two or more counterparts, each of which will be deemed an original and all of which together will constitute one agreement.

12. **Further Assurances.** Each signatory party agrees to execute and deliver any additional documents and instruments and to perform any additional acts as are reasonably necessary or appropriate to perform the terms, provisions, and conditions of this Agreement and all transactions contemplated by this Agreement.

13. **Severability; Construction.** If any provision in this Agreement is for any reason unenforceable, to the extent the unenforceability does not destroy the basis of the bargain among the parties, the unenforceability will not affect any other provision of this Agreement, and this Agreement will be construed as if the unenforceable provision had never been a part of it. Whenever context requires, the singular will include the plural and the neuter will include the masculine or feminine gender, and vice versa. Article and section headings in this Agreement are for reference only and are not intended to restrict or define the text of any section. This Agreement will not be construed more or less favorably between the parties by reason of authorship or origin of language.

EXECUTED as of __________________________, 20___.

GRANTOR:

____________________________________,
a(n)________________________________

By: ______________________________
Name: ______________________________
Title: ______________________________

GRANTEE:

____________________________________,
a(n)________________________________

By: ______________________________
Name: ______________________________
Title: ______________________________

STATE OF TEXAS §
§
COUNTY OF __________ §

This instrument was acknowledged before me on __________________________, 20___, by ____________________________________, as ____________________________________ of Luminant Generation Company LLC and Luminant Mining Company LLC. The acknowledging person personally appeared by:

___ physically appearing before me.

___ appearing by an interactive two-way audio and video communication that meets the requirement for online notarization under Texas Government Code chapter 406, subchapter C.

[Seal]

____
Notary Public, State of Texas

STATE OF TEXAS §
§
COUNTY OF __________ §

This instrument was acknowledged before me on __________________________, 20___, by ____________________, as Executive Director of Northeast Texas Municipal Water District. The acknowledging person personally appeared by:

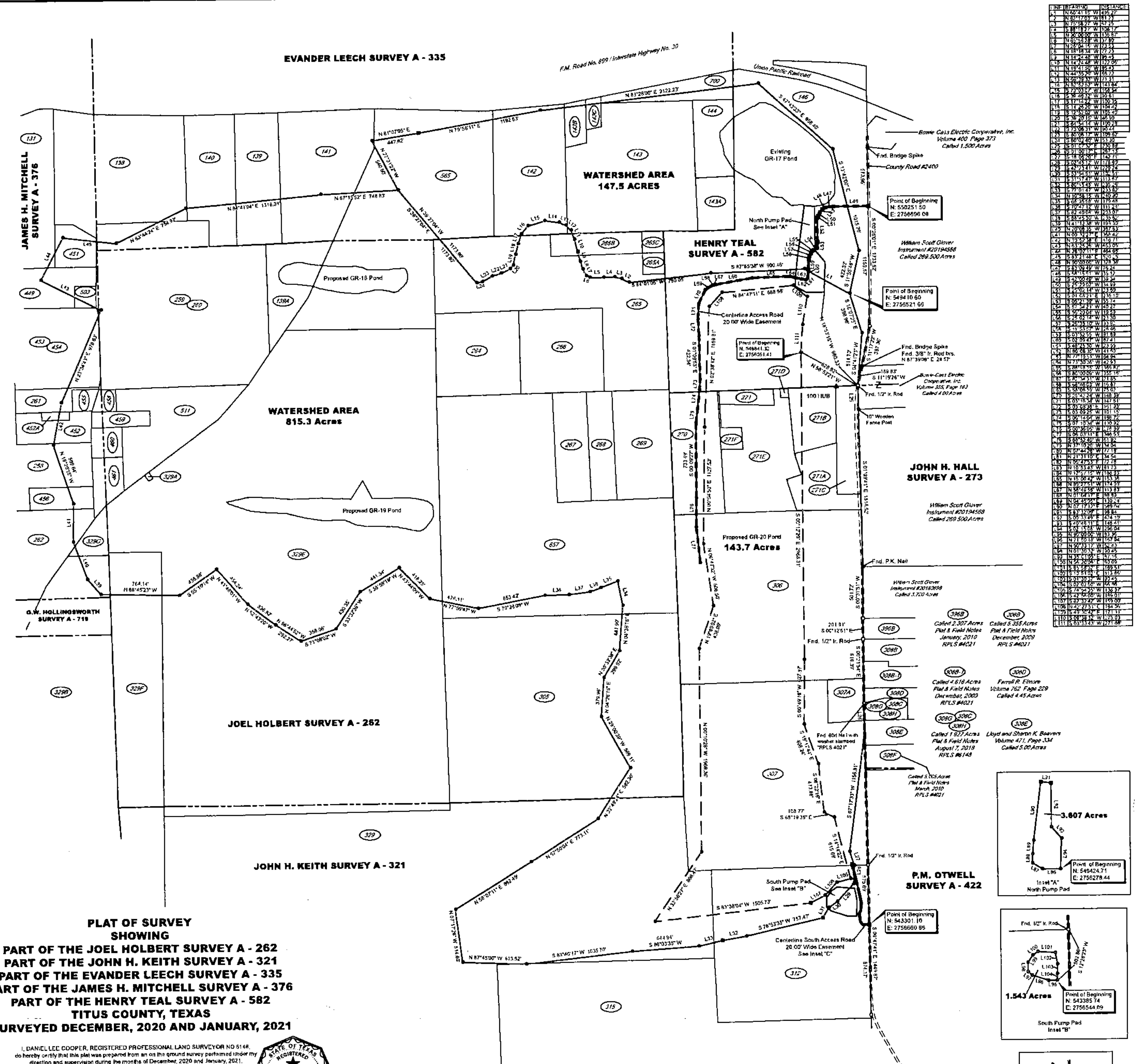
___ physically appearing before me.

___ appearing by an interactive two-way audio and video communication that meets the requirement for online notarization under Texas Government Code chapter 406, subchapter C.

[Seal]

____
Notary Public, State of Texas

Attach: Exhibit A (Legal Description of Easement Property)
Exhibit B (depiction of Easement Property and same as Exhibit D in the Development Agreement)



PLAT OF SURVEY
SHOWING
PART OF THE JOEL HOLBERT SURVEY A - 262
PART OF THE JOHN H. KEITH SURVEY A - 321
PART OF THE EVANDER LEECH SURVEY A - 335
PART OF THE JAMES H. MITCHELL SURVEY A - 376
PART OF THE HENRY TEAL SURVEY A - 582
TITUS COUNTY, TEXAS
SURVEYED DECEMBER, 2020 AND JANUARY, 2021

I, DANIEL LEE COOPER, REGISTERED PROFESSIONAL LAND SURVEYOR NO 6148, do hereby certify that this plat was prepared from an on the ground survey performed under my direction and supervision during the months of December, 2020 and January, 2021.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper

REGISTERED PROFESSIONAL LAND SURVEYOR NO. 6148

STATE OF TEXAS REGISTERED DANIEL LEE COOPER 6148 PROFESSIONAL LAND SURVEYOR

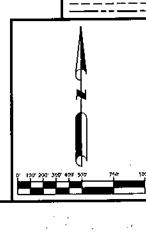
TRACT #	GRANTOR	GRANTEE	DATE	VOLUME	PAGE	ACREAGE	NOTES
131	G.B. Young ET AL	Texas Utilities Generating Company	10/23/79	429	308	34.86	Tract No. 2
138	G.B. Young ET AL	Texas Utilities Generating Company	10/23/79	429	308	88.23	Tract No. 3
139	R.W. Stidham ET UX Juanita	Texas Utilities Mining Company	1/12/87	508	871	12.642	
139A	R.W. Stidham ET UX Juanita	Texas Utilities Mining Company	1/12/87	508	871	8.794	
140	Harry B. Hutchins	Texas Utilities Generating Company	5/8/80	434	72	12.865	
141	Delma Gene France ET UX Callie Pauline France	Texas Utilities Mining Company	12/18/85	493	28	22.428	
142	Nickie Paul Smith ET UX Brenda	Texas Utilities Mining Company	12/9/91	687	301	18.954	
143	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	33.22	0.15 acres in county road
143A	Guaranty Bank	Texas Utilities Mining Company	5/15/89	558	82	6	
143B	Len F. Newman	Texas Utilities Mining Company	3/27/93	782	106	1.99	
143C	Donnie R. Newman ET UX Marzalie	Texas Utilities Mining Company	1/28/93	752	224	0.992	
144	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	8.58	0.35 acres in county road
146	George E. Walthall ET UX Pauline	Texas Utilities Mining Company	12/9/92	745	79	112.3	2.21 acres in county roads 0.25 acres in F.M. 899
258	Donald Rex Amerson ET UX Jerry	Texas Utilities Generating Company	9/1/79	427	695	17.8	
259 & 260	G.B. Young ET AL	Texas Utilities Generating Company	10/23/79	429	308	88.23	also in Field Notes dated 3/14/84 RPLS # 3889 called 56.95 acres
261	James L. Prewitt ET UX Deborah	Texas Utilities Generating Company	9/5/79	428	322	3	
262	Jesse F. Haley ET UX Dorothy	Texas Utilities Generating Company	6/15/82	454	323	223.79	
264	Loyd F. Phillips	Texas Utilities Mining Company	3/11/91	648	1	14.967	
265	Frances Montgomery Goates ET AL	Texas Utilities Mining Company	1/31/92	696	176	42.273	0.87 acres in county roads
265A	E. Maxine Wigginton	Texas Utilities Mining Company	1/31/92	696	173	0.99	0.13 acres in county road
265B	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	4.3	
265C	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	1.01	0.13 acres in county road
266	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	14.98	0.11 acres in county road
267	Baxter C. Moore ET UX Martha	Texas Utilities Mining Company	2/3/92	696	280	7.99	0.15 acres in county road
268	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	6	0.11 acres in county road
269	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	13.24	0.28 acres in county road
270	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	12.96	0.38 acres in county road
271	George M. Betts ET UX Quida	First Security Bank	5/12/98	1172	260A	1.79	0.41 acres in county road
271A	A.L. Starnes ET UX Ruth	Texas Utilities Mining Company	7/15/93	784	266	6.37	0.1 acre in county road
271B	Albert V. Freeman ET UX Patricia	Texas Utilities Mining Company	6/29/93	780	238	5.86	0.32 acres in county road
271C	Jerry Wayne Grissom ET UX Sandra	Texas Utilities Mining Company	7/28/93	786	305	5.08	0.7 acres in county road
271D	Virginia Boyd	Texas Utilities Mining Company	12/7/93	812	226	0.157	0.05 acres in county road
271E	Brian Betts ET UX Velda	BLC Corporation c/o TXU Mining Company	12/12/01	1372	168	15.73	0.09 acres in county road
271F	James L. Clayton ET UX Edna	BLC Corporation c/o TXU Mining Company	9/8/00	1275	258	1.01	also 0.12 acres for access easement
305	Hayward Rigano ET UX Jesilin	Texas Utilities Mining Company	9/14/92	732	79	92.89	
306	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	66.7	0.95 acres in county road
307	C.H. Mayer ET UX Carol	Texas Utilities Mining Company	8/30/89	575	144	69.2	
307A	Brian Betts ET UX Velda	BLC Corporation c/o TXU Mining Company	12/12/01	1372	186	3.27	0.21 acres in county road SW-35
312	Alma B. Arnold	Texas Utilities Mining Company	8/13/93	789	214	50.52	0.7 acres in county road SW-35
315	Ella Jacks ET AL	Texas Utilities Mining Company	4/27/90	606	307	102.53	
329	Jno. B. Stephens Jr. ET UX Elizabeth	Texas Utilities Generating Company	6/23/80	435	214	998.684	Includes Tract 329 - 329B - 329E - 329G
329A	Tri-Water Supply Corporation	Texas Utilities Generating Company	9/19/83	467	751	0.057	
329B							Field Notes dated 11/5/93 RPLS #1756 called 159.15 acres
329E							Field Notes dated 11/5/93 RPLS #1756 not completed used attached plat called 273.63 acres part of 998.684 acres Tract 329
329F							Field Notes dated 11/5/93 RPLS #1756 called 27.17 acres
329G							Field Notes dated 11/5/93 RPLS #1756 called 2.28 acres
449	Edwin G. Sisk ET UX Bennie A.	Texas Utilities Generating Company	9/24/82	457	3	9.63	
451	Robert D. Caldwell ET UX Erma	Texas Utilities Generating Company	2/8/80	431	392	3.54	
452	Harvey G. Landrum ET UX Patricia	Texas Utilities Mining Company	4/2/85	484	275	4.568	
452A	Kip Franklin Davis ET UX Cynthia	Texas Utilities Mining Company	4/2/85	484	273	0.5	
453 & 454	O.M. Jackson ET UX Mildred	Texas Utilities Generating Company	8/25/82	456	155	14.94	
455	Aubrey William Lunsford ET UX Roberta	Texas Utilities Generating Company	3/20/80	433	36	1	also referenced in Field Notes dated 8/10/79 RPLS #1234 called 1.09 acres
456	Douglas Hutchings ET UX Jo	Texas Utilities Generating Company	9/15/80	437	455	3.06	
458	Montie A. Harkinder	Texas Utilities Mining Company	11/15/85	491	807	1	
459	Kenneth R. Gordon ET UX Janal	Texas Utilities Generating Company	2/6/79	429	528	1.96	
460	Michael D. Kellem ET UX Debra	Texas Utilities Mining Company	9/27/84	478	338	2.01	
461	Charles Edward Taylor	Texas Utilities Mining Company	7/30/86	501	810	3.1	also referenced in James E Trammell ET UX Deborah To Texas Utilities Mining Company 7/23/96 Volume 501-Page 578 called 7 acres First Tract & 1.50 acres Second Tract also Field Notes dated 9/11/79 RPLS #1234 called 3.10 acres
503	Carla G. Lehman ET VIR Jimmy	Texas Utilities Generating Company	12/2/82	458	627	1	
511	Charles Dwight Matthews ET UX Sue	Texas Utilities Mining Company	11/15/85	481	803	14.61	
565	Barbara Beth Joyner	Texas Utilities Mining Company	8/15/92	718	161	60.03	1.8 acres in road
657	Hayward Rigano ET UX Jesilin	Texas Utilities Mining Company	9/14/92	732	82	84.34	0.37 acres in county road
700	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	5.03	0.13 acres in county road

NOTES

- Grid Coordinates and Bearings based on Texas State Plane Coordinate System, Texas North Central Zone 4202, NAD 27.
- Distances and acreage recited in surface. Combined Scale Factor = 0.9998552.
- This survey was prepared without the benefit of a Title Commitment.
- No attempt has been made to locate easements, utilities or improvements other than those shown hereon.
- Deed references shown hereon refer to the Deed, Land or Official Public Records of Titus County, Texas and may not reflect current ownership.
- Field Notes Prepared of Even Date.

LEGEND

- Set 1/2" Ir. Rod with cap stamped "LACY SURVEYING PROPERTY CORNER"
- Found Ir. Rod (size noted)
- Set P.K. Nail with washer stamped "RPLS 4021"
- Found P.K. Nail
- Found Right-of-Way Monument
- Point for corner
- Power Pole
- Wire Fence
- Pipe Fence
- Chain Link Fence
- Aerial Power Line
- Pipeline
- Electric Transmission Line
- Road
- Abstract Line



ADDRESS

JOB # : 2020215

CLIENT : Luminant

SCALE: 1" = 500.00'

LACY SURVEYING
P.O. BOX 736
ARP, TEXAS 75750
PHONE & FAX (903) 859 - 9942
LacySurveying.com
Texas Board of Professional Land Surveying Firm #100299 00

LacySurveying.com
Phone (903) 859 - 9942
P.O. Box 736 · Arp, TX 75750
TBPLS Firm #100299-00

January 14, 2021
Field Notes for Luminant Mining Company LLC
1.543 Acres
South Pump Pad
John H. Keith Survey A-321
Titus County, Texas

GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the John H. Keith Survey A-321, Titus County, Texas and being a part of that that certain called 50.52 acre (Luminant Mining Tract #312) that is described in a deed dated August 13, 1993 from Aline B. Arnold to Texas Utilities Mining Company that is recorded in Volume 789, Page 214 of the Deed Records of Titus County, Texas and being more completely described as follows to wit;

METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner, which bears South 12 degrees 28 minutes and 23 seconds West, 502.86 feet, from a 1/2 inch iron rod found for corner at the Northeast corner of said 50.52 acres and in the centerline of County Road #2400 and said beginning iron rod has a Texas North Central Coordinate value of (N: 543,385.74) (E: 2,756,544.09);

Thence across said tract as follows;

North 90 degrees 00 minutes 00 seconds West, for a distance of 83.36 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 71 degrees 50 minutes 18 seconds West, for a distance of 167.94 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 50 degrees 33 minutes 17 seconds West, for a distance of 52.43 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 01 degrees 30 minutes 32 seconds West, for a distance of 90.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 35 degrees 01 minutes 05 seconds East, for a distance of 87.16 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

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North 56 degrees 20 minutes 08 seconds East, for a distance of 60.09 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 85 degrees 58 minutes 32 seconds East, for a distance of 169.51 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 10 degrees 51 minutes 02 seconds East, for a distance of 113.86 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 01 degrees 30 minutes 32 seconds West, for a distance of 90.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 02 degrees 02 minutes 50 seconds West, for a distance of 66.66 feet, to the place of beginning, and containing **1.543 acres.**

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS
REGISTERED
DANIEL LEE COOPER
6148
PROFESSIONAL LAND SURVEYOR

LacySurveying.com
Phone (903) 859 - 9942
P.O. Box 736 · Arp, TX 75750
TBPLS Firm #100299-00

January 14, 2021
Field Notes for Luminant Mining Company LLC
3.607 Acres
North Pump Pad
Henry Teal Survey A-582
Titus County, Texas

GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the Henry Teal Survey A-582, Titus County, Texas and being a part of that certain called 112.3 acre (Luminant Mining Tract 146) that is described in a deed dated December 9, 1992 from George E. Walthall, et ux Pauline, to Texas Utilities Mining Company that is recorded in Volume 745, Page 79 of the Deed Records of Titus County, Texas and being more completely described as follows to wit;

METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner, which bears North 18 degrees 55 minutes and 16 seconds West, 960.33 feet, from a 1/2 inch iron rod found for corner at the Southeast corner of said 112.3 acres and in the centerline of County Road #2400 and said beginning iron rod has a Texas North Central Coordinate value of (N: 549,424.71) (E: 2,756,278.44);

Thence across said tract as follows;

North 89 degrees 27 minutes 51 seconds West, for a distance of 174.99 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 58 degrees 49 minutes 55 seconds West, for a distance of 113.83 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 01 degrees 04 minutes 17 seconds East, crossing a 20.00 feet wide easement surveyed this same date, for a distance of 88.69 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 04 degrees 46 minutes 05 seconds East, for a distance of 130.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

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North 07 degrees 17 minutes 12 seconds East, for a distance of 569.04 feet, to a point for corner in the edge of a pond;

South 83 degrees 32 minutes 09 seconds East, along the edge of said pond, for a distance of 98.84 feet, to a point for corner;

South 00 degrees 33 minutes 49 seconds East, crossing said easement, for a distance of 424.19 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 40 degrees 48 minutes 11 seconds East, for a distance of 148.41 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 02 degrees 15 minutes 08 seconds West, for a distance of 296.04 feet, to the place of beginning, and containing **3.607 acres.**

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020

GIVEN UNDER MY HAND AND SEAL, this the 14th day of December, 2021.

Daniel Lee Cooper

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS
REGISTERED
DANIEL LEE COOPER
6148
PROFESSIONAL
LAND SURVEYOR

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P.O. Box 736 · Arp, TX 75750
TBPLS Firm #100299-00

January 14, 2021
Field Notes for Luminant Mining Company LLC
147.5 Acres
Watershed Area
Joel Holbert Survey A-262
Evander Leech Survey A-335
Henry Teal Survey A-582
Titus County, Texas

GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the Joel Holbert Survey A-262, a part of the Evander Leech Survey A-335 and a part of the Henry Teal Survey A-582, Titus County, Texas and also being all or a part of the following tracts of land;

- Luminant Mining Tract #141 – Delma Gene France, et ux Callie Pauline France, to Texas Utilities Mining Company, December 18, 1985, Volume 493, Page 28, called 22.428 acres;
- Luminant Mining Tract #142 – Nickie Paul Smith, et ux Brenda, to Texas Utilities Mining Company, December 9, 1991, Volume 687, Page 301, called 19.954 acres;
- Luminant Mining Tract #143 – Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 33.22 acres;
- Luminant Mining Tract #143A – Guaranty Bank to Texas Utilities Mining Company, May 15, 1989, Volume 558, Page 82, called 6 acres;
- Luminant Mining Tract #143B – Len F. Newman to Texas Utilities Mining Company, March 27, 1993, Volume 762, Page 106, called 1.99 acres;
- Luminant Mining Tract #143C – Donnie R. Newman, et ux Marzelle, to Texas Utilities Mining Company, January 28, 1993, Volume 752, Page 224, called 0.992 acres;
- Luminant Mining Tract #144 – Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 6.58 acres;
- Luminant Mining Tract #146 – George E. Walthall, et ux Pauline, to Texas Utilities Mining Company, December 9, 1992, Volume 745, Page 79, called 112.3 acres;

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- Luminant Mining Tract #265 – Frances Montgomery Goates, et al, to Texas Utilities Mining Company, January 31, 1992, Volume 696, Page 176, called 42.273 acres;
- Luminant Mining Tract #265A – E. Maxine Wigginton to Texas Utilities Mining Company, January 31, 1992, Volume 696, Page 173, called 0.99 acres;
- Luminant Mining Tract #265B, 265C – James D. Maxton, et ux Fleda, to Texas Utilities Mining Company, May 12, 1994, Volume 840, Page 241, called 4.3 acres (Tract 265B) called 1.01 acres (Tract 265C);
- Luminant Mining Tract #565 – Barbara Beth Joyner to Texas Utilities Mining Company, June 15, 1992, Volume 718, Page 161, called 60.03 acres;
- Luminant Mining Tract #700 – Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 5.03 acres and being more completely described as follows to wit;

METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped “LACY SURVEYINIG PROPERTY CORNER” (LSPC) set for corner, which bears North 04 degrees 41 minutes and 23 seconds East, 514.70 feet and North 16 degrees 07 minutes and 25 seconds West, 396.96 feet, from a 1/2 inch iron rod found for corner at the Southeast corner of the above mentioned 112.3 acre Luminant Mining Tract #146 and in the centerline of County Road #2400 and said point of beginning has a Texas North Central Coordinate value of (N: 549,410.60) (E: 2,756,521.66);

Thence across said tracts and along the Easterly North boundary line of a 815.3 acre tract surveyed this same date as follows;

North 60 degrees 41 minutes 15 seconds West, for a distance of 495.27 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 87 degrees 55 minutes 38 seconds West, for a distance of 900.46 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 84 degrees 01 minutes 05 seconds West, for a distance of 790.05 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

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North 62 degrees 17 minutes 03 seconds West, for a distance of 81.23 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 75 degrees 58 minutes 27 seconds West, for a distance of 67.25 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 88 degrees 18 minutes 27 seconds West, for a distance of 106.17 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 90 degrees 00 minutes 00 seconds West, for a distance of 135.87 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 65 degrees 56 minutes 28 seconds West, for a distance of 37.80 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 26 degrees 04 minutes 16 seconds West, for a distance of 73.53 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 18 degrees 16 minutes 34 seconds West, for a distance of 77.29 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 14 degrees 24 minutes 48 seconds West, for a distance of 98.45 feet, to a point for corner;

North 14 degrees 24 minutes 48 seconds West, for a distance of 122.06 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 19 degrees 41 minutes 50 seconds West, for a distance of 95.43 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 44 degrees 35 minutes 29 seconds West, for a distance of 68.72 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 66 degrees 39 minutes 33 seconds West, for a distance of 71.31 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 82 degrees 52 minutes 52 seconds West, for a distance of 143.64 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 73 degrees 03 minutes 07 seconds West, for a distance of 168.54 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 39 degrees 46 minutes 32 seconds West, for a distance of 99.81 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 17 degrees 14 minutes 22 seconds West, for a distance of 100.35 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 14 degrees 26 minutes 20 seconds West, for a distance of 104.42 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 12 degrees 52 minutes 02 seconds West, for a distance of 105.40 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 39 degrees 20 minutes 15 seconds West, for a distance of 46.90 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 64 degrees 54 minutes 14 seconds West, for a distance of 100.28 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 73 degrees 08 minutes 31 seconds West, for a distance of 90.44 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 60 degrees 08 minutes 17 seconds West, for a distance of 109.62 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 80 degrees 02 minutes 40 seconds West, for a distance of 53.30 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and North 39 degrees 27 minutes 04 seconds West, for a distance of 1173.80 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner at a Northeast corner of said 815.3 acres;

Thence continuing across said tracts as follows;

North 27 degrees 31 minutes 22 seconds West, for a distance of 540.60 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

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North 81 degrees 07 minutes 05 seconds East, for a distance of 447.62 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 79 degrees 56 minutes 11 seconds East, for a distance of 1192.53 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 83 degrees 26 minutes 00 seconds East, for a distance of 2122.23 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 47 degrees 43 minutes 33 seconds East, for a distance of 956.40 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 13 degrees 42 minutes 00 seconds East, for a distance of 1015.70 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 11 degrees 55 minutes 48 seconds West, for a distance of 422.32 feet, to the place of beginning, and containing **147.5 acres.**

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS
REGISTERED
DANIEL LEE COOPER
6148
PROFESSIONAL LAND SURVEYOR

LacySurveying.com
Phone (903) 859 - 9942
P.O. Box 736 · Arp, TX 75750
TBPLS Firm #100299-00

January 14, 2021
Field Notes for Luminant Mining Company LLC
815.3 Acres
Watershed Area
John Holbert Survey A-262
John H. Keith Survey A-321
Evander Leech Survey A-335
James H. Mitchell Survey A-376
Henry Teal Survey A-582
Titus County, Texas

GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the John Holbert Survey A-262, a part of the John H. Keith Survey A-321, a part of the Evander Leech Survey A-335, a part of the James H. Mitchell Survey A-376 and a part of the Henry Teal Survey A-582, Titus County, Texas and also being all or a part of the following tracts of land;

- Luminant Mining Tract #131 – G.B. Young, et al, to Texas Utilities Generating Company, October 23, 1979, Volume 429, Page 308, called 34.86 acres, Tract No. 2;
- Luminant Mining Tract #138 – G.B. Young, et al, to Texas Utilities Generating Company, October 23, 1979, Volume 429, Page 308, called 88.23 acres, Tract No. 3;
- Luminant Mining Tract #139 & 139A – R.W. Stidham, et ux Juanita, to Texas Utilities Mining Company, January 12, 1987, Volume 508, Page 871, called 12.642 acres (Tract 139) called 8.794 acres (Tract 139A);
- Luminant Mining Tract #140 – Harry B. Hutchins to Texas Utilities Generating Company, May 8, 1980, Volume 434, Page 72, called 12.865 acres;
- Luminant Mining Tract #141 – Delma Gene France, et ux Callie Pauline France, to Texas Utilities Mining Company, December 18, 1985, Volume 493, Page 28, called 22.428 acres;
- Luminant Mining Tract #142 – Nickie Paul Smith, et ux Brenda, to Texas Utilities Mining Company, December 9, 1991, Volume 687, Page 301, called 19.954 acres;

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- Luminant Mining Tract 143 – Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 33.22 acres;
- Luminant Mining Tract #146 – George E. Walthall, et ux Pauline, to Texas Utilities Mining Company, December 9, 1992, Volume 745, Page 79, called 112.3 acres;
- Luminant Mining Tract #258 – Donald Rex Amerson, et ux Jerry, to Texas Utilities Generating Company, August 1, 1979, Volume 427, Page 695, called 17.9 acres:
- Luminant Mining Tract #259 & 260 – G.B. Young, et al, to Texas Utilities Generating Company, October 23, 1979, Volume 429, Page 308, called 88.23 acres, further described as 56.95 acres (Field Notes dated March 14, 1984, R.P.L.S. #3889;
- Luminant Mining Tract #261 – James L. Prewitt, et ux Deborah, to Texas Utilities Generating Company, September 5, 1979, Volume 428, Page 322, called 3 acres;
- Luminant Mining Tract #262 – Jesse F. Haley, et ux Dorothy, to Texas Utilities Generating Company, June 15, 1982, Volume 454, Page 323, called 223.79 acres;
- Luminant Mining Tract 264 – Loyd F. Phillips to Texas Utilities Mining Company, March 11, 1991, Volume 648, Page 1, called 14.987 acres;
- Luminant Mining Tract #265 – Frances Montgomery Goates, et al, to Texas Utilities Mining Company, January 31, 1992, Volume 696, Page 176, called 42.273 acres;
- Luminant Mining Tract #265B – James D. Maxton, et ux Fieda, to Texas Utilities Mining Company, May 12, 1994, Volume 840, Page 241, called 4.3 acres;
- Luminant Mining Tract #266 – James D. Maxton, et ux Fleda, to Texas Utilities Mining Company, May 12, 1994, Volume 840, Page 241, called 14.98 acres;
- Luminant Mining Tract #267 – Baxter C. Moore, et ux Martha, to Texas Utilities Mining Company, February 3, 1992, Volume 696, Page 280, called 7.99 acres;
- Luminant Ming Tract #268 – Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 6 acres;

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- Luminant Mining Tract #269 – Daisy Harris Dobbs, et vir, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 13.24 acres;
- Luminant Mining Tract #270 – Daisy Harris Dobbs, et vir, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 12.96 acres;
- Luminant Mining Tract #271 – George M. Betts, et ux Quida, to First Security Bank, May 12, 1998, Volume 1172, Page 260A, called 1.79 acres;
- Luminant Mining Tract #271A – A.L. Starnes, et ux Ruth, to Texas Utilities Mining Company, July 15, 1993, Volume 784, Page 266, called 6.37 acres;
- Luminant Mining Tract #271B – Albert V. Freeman, et ux Patricia, to Texas Utilities Mining Company, June 29, 1993, Volume 780, Page 238, called 5.86 acres;
- Luminant Mining Tract #271C – Jerry Wayne Grissom, et ux Sandra, to Texas Utilities Mining Company, July 28, 1993, Volume 786, Page 305, called 5.08 acres;
- Luminant Mining Tract #271D – Virginia Boyd to Texas Utilities Mining Company, December 7, 1993, Volume 812, Page 226, called 0.157 acres;
- Luminant Mining Tract #271E – Brian Betts, et ux Velda, to BLC Corporation c/o TXU Mining Company, December 12, 2001, Volume 1372, Page 168, called 15.73 acres;
- Luminant Mining Tract #271F – James L. Clayton, et ux Edna, to BLC Corporation c/o TXU Mining Company, September 8, 2000, Volume 1275, Page 258, called 1.01 acres;
- Luminant Mining Tract #305 – Hayward Rigano, et ux Jesilin, to Texas Utilities Mining Company, September 14, 1992, Volume 732, Page 79, called 92.89 acres;
- Luminant Mining Tract #306 – Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 66.7 acres;
- Luminant Mining Tract #307 – C.H. Meyer, et ux Carol, to Texas Utilities Mining Company, August 30, 1989, Volume 575, Page 144, called 69.2 acres;
- Luminant Mining Tract #307A – Brian Betts, et ux Velda, to BLC Corporation c/o TXU Mining Company, December 12, 2001, Volume 1372, Page 168, called 3.27 acres;

- Luminant Mining Tract #312 – Aline B. Arnold to Texas Utilities Mining Company, August 13, 1993, Volume 789, Page 214, called 50.52 acres;

- Luminant Mining Tract #315 – Ella Jacks, et al, to Texas Utilities Mining Company, April 27, 1990, Volume 606, Page 307, called 102.53 acres;

- Luminant Mining Tract #329 – Jno. B. Stephens, Jr., et ux Elizabeth, to Texas Utilities Generating Company, June 23, 1980, Volume 435, Page 214, called 998.684 acres (includes tracts 329B, 329E, 329F & 329 G);

- Luminant Mining Tract #329A – Tri-Water Supply Corporation to Texas Utilities Generating Company, September 19, 1983, Volume 467, Page 751, called 0.057 acres;

- Luminant Mining Tract #449 – Edwin G. Sisk, et ux Bennie A., to Texas Utilities Generating Company, September 24, 1982, Volume 457, Page 3, called 9.53 acres;

- Luminant Mining Tract #451 – Robert D. Caldwell, et ux Erma, to Texas Utilities Generating Company, February 8, 1980, Volume 431, Page 392, called 3.64 acres;

- Luminant Mining Tract #452 – Harvey G. Landrum, et ux Patricia, to Texas Utilities Mining Company, April 2, 1985, Volume 484, Page 275, called 4.588 acres;

- Luminant Mining Tract #452A – Kip Franklin Davis, et ux Cynthia, to Texas Utilities Mining Company, April 2, 1985, Volume 484, Page 273, called 0.5 acres;

- Luminant Mining Tract #453 & 454 – O.M. Jackson, et ux Mildred, to Texas Utilities Generating Company, August 25, 1982, Volume 456, Page 155, called 14.94 acres;

- Luminant Mining Tract #455 – Aubrey William Lunsford, et ux Roberta, to Texas Utilities Generating Company, March 20, 1980, Volume 433, Page 36, called 1 acre;

- Luminant Mining Tract #456 – Douglas Hutchings, et ux Jo, to Texas Utilities Generating Company, September 15, 1980, Volume 437, Page 455, called 3.06 acres;

- Luminant Mining Tract #458 – Montie A. Harkrider to Texas Utilities Mining Company, November 15, 1985, Volume 491, Page 807, called 1 acre;

- Luminant Mining Tract #459 – Kenneth R. Gordon, et ux Janet, to Texas Utilities Generating Company, February 6, 1979, Volume 429, Page 528, called 1.96 acres;
- Luminant Mining Tract #460 – Michael D. Kellam, et ux Debra, to Texas Utilities Mining Company, September 27, 1984, Volume 478, Page 338, called 2.01 acres;
- Luminant Mining Tract #461 – Charles Edward Taylor to Texas Utilities Mining Company, July 30, 1986, Volume 501, Page 810, called 3.1 acres;
- Luminant Mining Tract #503 – Carla G. Lehman, et vir Jimmy, to Texas Utilities Generating Company, December 2, 1982, Volume 458, Page 627, called 1 acre;
- Luminant Mining Tract #511 – Charles Dwight Matthews, et ux Sue, to Texas Utilities Mining Company, November 15, 1985, Volume 491, Page 803, called 14.61 acres;
- Luminant Mining Tract #565 – Barbara Beth Joyner to Texas Utilities Mining Company, June 15, 1992, Volume 718, Page 161, Called 60.03 acres;
- Luminant Mining Tract #657 – Hayward Rigano, et ux Jesilin, to Texas Utilities Mining Company, September 14, 1992, Volume 732, Page 82, called 84.34 acres;
- Luminant Mining Tract #700 – Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 5.03 acres;

METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner at the Southeast corner of a 147.5 acre tract surveyed this same date, which has a Texas North Central Coordinate value of (N: 549,410.60) (E: 2,756,521.66);

Thence South 16 degrees 07 minutes 25 seconds East, across the above mentioned 112.3 acre (Tract 146) for a distance of 396.96 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

Thence South 04 degrees 41 minutes 23 seconds West, for a distance of 514.70 feet, to a 1/2 inch iron rod found for corner at the Southeast corner of said 112.3 acres, at the Northeast corner of the above mentioned 5.08 acre (Tract 271C) in the West boundary line of the Bowie-Cass Electric

Cooperative, Inc., called 4.00 acre tract (Volume 385, Page 183) and being in the centerline of County Road #2400;

Thence South 01 degrees 07 minutes 32 seconds East, along the East boundary line of said 5.08 acres and along said West boundary line, for a distance of 230.89 feet, to a 10 inch wooden fence corner post found for corner at the Southwest corner of said 4.00 acres, at a Northwest coroner of the William Scott Glover called 269.500 acre tract (Instrument #20194568) and being in the East right-of-way (R.O.W.) line of said County Road;

Thence South 01 degrees 09 minutes 41 seconds East, continuing along said East boundary line, the East boundary line of the above mentioned 6.37 acre (Tract 271A) the East boundary line of the above mentioned 66.7 acre (Tract 306) along the Southerly West boundary line of said 269.500 acres and along said road, for a distance of 1518.52 feet, to a P.K. nail found for corner at the Southwest corner of said 269.500 acres and at the Northwest corner of the William Scott Glover called 5.720 acre tract (Instrument #20180898 and being in the pavement of said County Road;

Thence South 00 degrees 31 minutes 51 seconds West, continuing along the East boundary line of said 66.7 acres and along the West boundary line of said 5.720 acres, for a distance of 501.72 feet, to a 1/2 inch iron rod found for corner at the Southwest corner of said 5.720 acres, at the Northwest corner of a 2.307 acre tract (Plat and Field Notes dated January, 2010, R.P.L.S. #4021) and being in the centerline of said County Road;

Thence South 00 degrees 12 minutes 51 seconds East, continuing along said East boundary line and along the West boundary line of said 2.307 acres and along said centerline, for a distance of 201.91 feet, to a 1/2 inch iron rod found for corner at the Southwest corner of said 2.307 acres and at the Northwest corner of a called 5.355 acre tract (Plat and Field Notes dated December, 2009, R.P.L.S. #4021);

Thence South 00 degrees 21 minutes 54 seconds East, continuing along said East boundary line, the East boundary line of the above mentioned 3.27 acre (Tract 307A) and along said centerline, for a distance of 618.39 feet, to a 60d nail with a Washer stamped "RPLS 4021" found for corner at the Southwest corner of the Farrell R. Elmore called 4.45 acre tract (Volume 762, Page 229) and at the Northwest corner of a 1.927 acre tract (Plat and Field Notes dated August 7, 2018, R.P.L.S. #6148);

Thence South 01 degrees 00 minutes 17 seconds East, continuing along said East boundary line, along the East boundary line of the above mentioned 69.2 acre (Tract 307) and along said centerline, for a distance of 287.13 feet, to a P.K. Nail with a washer stamped "RPLS 4021" set for corner;

Thence across the above mentioned tracts as follows;

South 07 degrees 17 minutes 33 seconds West, for a distance of 1156.81 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 18 degrees 06 minutes 20 seconds East, for a distance of 142.71 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 02 degrees 45 minutes 12 seconds West, for a distance of 178.60 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 42 degrees 23 minutes 41 seconds West, for a distance of 229.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 53 degrees 54 minutes 51 seconds West, for a distance of 102.51 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 31 degrees 17 minutes 47 seconds West, for a distance of 113.57 feet, to a point for corner;

South 76 degrees 53 minutes 35 seconds West, for a distance of 757.47 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 80 degrees 15 minutes 45 seconds West, for a distance of 235.26 feet, to a point for corner;

South 77 degrees 01 minutes 47 seconds West, for a distance of 233.62 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 86 degrees 03 minutes 35 seconds West, for a distance of 644.94 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 83 degrees 40 minutes 17 seconds West, for a distance of 1035.70 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 87 degrees 45 minutes 00 seconds West, for a distance of 613.52 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

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North 07 degrees 17 minutes 26 seconds West, for a distance of 514.60 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 58 degrees 07 minutes 11 seconds East, for a distance of 862.49 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 57 degrees 50 minutes 04 seconds East, for a distance of 773.11 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 32 degrees 49 minutes 24 seconds East, for a distance of 582.30 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 29 degrees 00 minutes 39 seconds West, for a distance of 569.11 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 04 degrees 26 minutes 16 seconds East, for a distance of 379.96 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 30 degrees 52 minutes 38 seconds East, for a distance of 299.92 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 04 degrees 36 minutes 18 seconds East, for a distance of 441.90 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 10 degrees 58 minutes 15 seconds West, for a distance of 240.90 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 68 degrees 35 minutes 58 seconds West, for a distance of 179.48 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 70 degrees 47 minutes 12 seconds West, for a distance of 111.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 82 degrees 40 minutes 08 seconds West, for a distance of 203.07 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 88 degrees 45 minutes 30 seconds West, for a distance of 235.82 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 79 degrees 28 minutes 08 seconds West, for a distance of 653.42 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 77 degrees 59 minutes 47 seconds West, for a distance of 476.11 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 43 degrees 44 minutes 09 seconds West, for a distance of 418.25 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 58 degrees 59 minutes 19 seconds West, for a distance of 441.54 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 33 degrees 32 minutes 36 seconds West, for a distance of 430.35 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 71 degrees 08 minutes 02 seconds West, for a distance of 358.06 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 56 degrees 44 minutes 52 seconds West, for a distance of 292.27 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 52 degrees 43 minutes 20 seconds West, for a distance of 336.82 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 41 degrees 46 minutes 01 seconds West, for a distance of 454.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 55 degrees 10 minutes 18 seconds West, for a distance of 436.88 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 88 degrees 45 minutes 23 seconds West, for a distance of 764.14 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 41 degrees 12 minutes 38 seconds West, for a distance of 193.30 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 20 degrees 08 minutes 35 seconds West, for a distance of 387.83 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 00 degrees 32 minutes 27 seconds East, for a distance of 368.42 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 18 degrees 20 minutes 15 seconds West, for a distance of 599.64 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 10 degrees 52 minutes 38 seconds East, for a distance of 416.71 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 23 degrees 34 minutes 43 seconds East, for a distance of 979.63 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 63 degrees 25 minutes 26 seconds West, for a distance of 653.05 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 28 degrees 02 minutes 11 seconds East, for a distance of 464.68 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 83 degrees 21 minutes 48 seconds East, for a distance of 520.25 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 63 degrees 44 minutes 24 seconds East, for a distance of 754.92 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 84 degrees 41 minutes 04 seconds East, for a distance of 1318.39 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and North 87 degrees 15 minutes 52 seconds East, for a distance of 746.83 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner in the Northerly Northwest boundary line of said 147.5 acres;

Thence continuing across said tracts and along the Northwest and South boundary lines of said 147.5 acres as follows;

South 39 degrees 27 minutes 04 seconds East, for a distance of 1173.80 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 80 degrees 02 minutes 40 seconds East, for a distance of 53.30 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 60 degrees 08 minutes 17 seconds East, for a distance of 109.62 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 73 degrees 08 minutes 31 seconds East, for a distance of 90.44 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 64 degrees 54 minutes 14 seconds East, for a distance of 100.28 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 39 degrees 20 minutes 15 seconds East, for a distance of 46.90 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 12 degrees 52 minutes 02 seconds East, for a distance of 105.40 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 14 degrees 26 minutes 20 seconds East, for a distance of 104.42 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 17 degrees 14 minutes 22 seconds East, for a distance of 100.35 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 39 degrees 46 minutes 32 seconds East, for a distance of 99.81 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 73 degrees 03 minutes 07 seconds East, for a distance of 168.54 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 82 degrees 52 minutes 52 seconds East, for a distance of 143.64 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 66 degrees 39 minutes 33 seconds East, for a distance of 71.31 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 44 degrees 35 minutes 29 seconds East, for a distance of 68.72 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 19 degrees 41 minutes 50 seconds East, for a distance of 95.43 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 14 degrees 24 minutes 48 seconds East, for a distance of 122.06 feet, to a point for corner;

South 14 degrees 24 minutes and 48 seconds East, for a distance of 98.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 18 degrees 16 minutes 34 seconds East, for a distance of 77.29 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 26 degrees 04 minutes 16 seconds East, for a distance of 73.53 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 65 degrees 56 minutes 28 seconds East, for a distance of 37.80 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 90 degrees 00 minutes 00 seconds East, for a distance of 135.87 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 88 degrees 18 minutes 27 seconds East, for a distance of 106.17 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 75 degrees 58 minutes 27 seconds East, for a distance of 67.25 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 62 degrees 17 minutes 03 seconds East, for a distance of 81.23 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 84 degrees 01 minutes 05 seconds East, for a distance of 790.05 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 87 degrees 55 minutes 38 seconds East, for a distance of 900.46 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 60 degrees 41 minutes 15 seconds East, for a distance of 495.27 feet, to the place of beginning, and containing **815.3 acres.**

Plat prepared of even date.

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Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS REGISTERED DANIEL LEE COOPER 6148 PROFESSIONAL LAND SURVEYOR

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TBPLS Firm #100299-00

January 14, 2021
Field Notes for Luminant Mining Company LLC
Access Easement
20.00 Feet in Width
John H. Keith Survey A-321
Henry Teal Survey A-582
Titus County, Texas

GENERAL DESCRIPTION

Being an easement 20.00 feet in width, 10.00 feet each side of the following described line, located in the John H. Keith Survey A-321 and in the Henry Teal Survey A-582, Titus County, Texas, upon over and across those certain tracts of land listed below and being more completely described as follows to wit;

- Luminant Mining Tract #146 – George E. Walthall, et ux Pauline, to Texas Utilities Mining Company, December 9, 1992, Volume 745, Page 79, Called 112.3 acres;
- Luminant Mining Tract #270 – Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 12.96 acres;
- Luminant Mining Tract #306 – Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 66.7 acres;

CENTERLINE DESCRIPTION

Beginning at a point for corner in the East boundary line of the above mentioned 112.3 acre (Tract 146) in the West boundary line of the William Scott Glover called 269.500 acre tract (Instrument #20194568) and in County Road #2400, which bears South 00 degrees 26 minutes and 01 seconds East, a distance of 573.95 feet, from a bridge spike found for corner in the East boundary line of said 112.3 acres, at a Northwest corner of said 269.500 acres and at the Southwest corner of the Bowie-Cass Electric Cooperative, Inc. called 1.500 acre tract (Volume 400, Page 373) and said point also bears North 00 degrees 26 minutes and 01 seconds West, a distance of 1159.57 feet, from a 1/2 inch iron rod found for corner at an angle corner in the East line of said 12.96 acres, and said beginning point has a Texas North Central Coordinate value of (N:550,251.50) (E: 2,756,696.08);

Thence across said tracts as follows;

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North 90 degrees 00 minutes 00 seconds West, for a distance of 328.36 feet, to a point at an angle point;

South 83 degrees 09 minutes 49 seconds West, for a distance of 76.24 feet, to a point at an angle point;

South 58 degrees 15 minutes 51 seconds West, for a distance of 35.12 feet, to a point at an angle point;

South 42 degrees 00 minutes 49 seconds West, for a distance of 39.34 feet, to a point at an angle point;

South 25 degrees 29 minutes 02 seconds West, for a distance of 34.99 feet, to a point at an angle point;

South 25 degrees 02 minutes 14 seconds West, for a distance of 23.60 feet, to a point at an angle point;

South 01 degrees 08 minutes 21 seconds East, for a distance of 235.10 feet, to a point at an angle point;

South 05 degrees 21 minutes 39 seconds West, for a distance of 55.74 feet, to a point at an angle point;

South 57 degrees 34 minutes 21 seconds West, for a distance of 40.27 feet, to a point at an angle point;

South 56 degrees 20 minutes 04 seconds West, for a distance of 19.59 feet, to a point at an angle point;

South 25 degrees 02 minutes 14 seconds West, for a distance of 23.30 feet, to a point at an angle point;

South 26 degrees 35 minutes 10 seconds West, for a distance of 33.92 feet, to a point at an angle point;

South 11 degrees 53 minutes 57 seconds West, for a distance of 28.46 feet, to a point at an angle point;

South 03 degrees 52 minutes 55 seconds West, for a distance of 91.89 feet, to a point at an angle point;

South 02 degrees 09 minutes 47 seconds West, for a distance of 87.41 feet, to a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set at an angle point;

South 49 degrees 25 minutes 30 seconds West, for a distance of 23.55 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 80 degrees 08 minutes 35 seconds West, for a distance of 41.60 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 77 degrees 19 minutes 51 seconds West, for a distance of 64.94 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 73 degrees 30 minutes 36 seconds West, for a distance of 42.93 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 88 degrees 18 minutes 35 seconds West, for a distance of 369.87 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 80 degrees 00 minutes 09 seconds West, for a distance of 355.16 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 82 degrees 34 minutes 31 seconds West, for a distance of 21.85 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 68 degrees 46 minutes 03 seconds West, for a distance of 16.87 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 58 degrees 08 minutes 39 seconds West, for a distance of 75.02 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 25 degrees 42 minutes 24 seconds West, for a distance of 148.39 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 03 degrees 18 minutes 34 seconds West, for a distance of 147.51 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

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South 03 degrees 08 minutes 38 seconds East, for a distance of 161.93 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 01 degrees 09 minutes 53 seconds East, for a distance of 422.34 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 03 degrees 09 minutes 25 seconds West, for a distance of 101.15 feet, to a 1/2 inch iron rod with a c ap stamped (LSPC) set at an angle point;

South 06 degrees 14 minutes 04 seconds West, for a distance of 188.72 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 07 degrees 10 minutes 34 seconds West, for a distance of 130.92 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 00 degrees 09 minutes 27 seconds West, for a distance of 733.49 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 00 degrees 36 minutes 06 seconds West, for a distance of 278.99 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

and South 06 degrees 03 minutes 31 seconds East, for a distance of 346.53 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at the end of said easement.

Plat Prepared of Even Date.

Grid coordinates and bearings based on Texas State Plane Coordinates, North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS
REGISTERED
DANIEL LEE COOPER
6148
PROFESSIONAL
LAND SURVEYOR

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January 14, 2021
Field Notes for Luminant Mining Company LLC
South Access Road Easement
20.00 Feet in Width
John H. Keith Survey A-321
Titus County, Texas

GENERAL DESCRIPTION

Being an easement 20.00 feet in width, 10.00 feet each side of the following described line, located in the John H. Keith Survey A-321, Titus County, Texas, upon over and across those certain tracts of land listed below and being more completely described as follows to wit;

- Luminant Mining Tract #307 – C.H. Meyer, et ux Carol, to Texas Utilities Mining Company, August 30, 1989, Volume 575, Page 144, called 69.2 acres;

- Luminant Mining Tract #312 – Aline B. Arnold to Texas Utilities Mining Company, August 13, 1993. Volume 789, Page 214, called 50.52 acres;

CENTERLINE DESCRIPTION

Beginning at a point in the East boundary line of the above mentioned 50.52 acre (Tract 312) and in the centerline of County Road #2400, which bears South 00 degrees 47 minutes and 41 seconds East, a distance of 575.69 feet, from a 1/2 inch iron rod found for corner at the Northeast corner of said 50.52 acres and at the Southeast corner of said 69.2 acres and said beginning point has a Texas North Central Coordinate value of (N: 543,301.10) (E: 2,756,660.66);

Thence across said 50.52 acres as follows;

South 88 degrees 52 minutes 40 seconds West, for a distance of 61.92 feet, to a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set at an angle point;

North 37 degrees 10 minutes 20 seconds West, for a distance of 34.04 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 07 degrees 44 minutes 26 seconds West, for a distance of 77.18 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 21 degrees 31 minutes 10 seconds East, for a distance of 34.54 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 05 degrees 47 minutes 53 seconds East, for a distance of 72.78 feet, to a 1/2 inch iron rod with a cap stamped 9LSPC) set at an angle point;

North 10 degrees 53 minutes 43 seconds West, for a distance of 81.73 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 12 degrees 57 minutes 15 seconds West, for a distance of 166.93 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

and North 15 degrees 00 minutes 42 seconds West, continuing across said 50.52 acres and across said 69.2 acres, for a distance of 153.36 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at the end of said easement.

Plat Prepared of Even Date.

Grid coordinates and bearings based on Texas State Plane Coordinates, North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS
REGISTERED
DANIEL LEE COOPER
6148
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January 14, 2021
Field Notes for Luminant Mining Company LLC
143.7 Acres
GR-20 Pond
John H. Keith Survey A-321
Henry Teal Survey A-582
Titus County, Texas

GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the John H. Keith Survey A-321 and a part of the Henry Teal Survey A-582, Titus County, Texas and also being all or a part of the following tracts of land;

- Luminant Mining Tract #146 – George E. Walthall, et ux Pauline, to Texas Utilities Mining Company, December 9, 1992, Volume 745, Page 79, called 112.3 acres;

- Luminant Mining Tract #270 – Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 12.96 acres;

- Luminant Mining Tract #271 – George M. Betts, et ux Quida, to First Security Bank, May 12, 1998, Volume 1172, Page 260A, called 1.779 acres;

- Luminant Mining Tract #271A – A.L. Starnes, et ux Ruth, to Texas Utilities Mining Company, July 15, 1993, Volume 784, Page 266, called 6.37 acres;

- Luminant Mining Tract #271B – Albert V. Freeman, et ux Patricia, to Texas Utilities Mining Company, June 29, 1993, Volume 780, Page 238, called 5.86 acres;

- Luminant Mining Tract #271C – Jerry Wayne Grissom, et ux Sandra, to Texas Utilities Mining Company, July 28, 1993, Volume 786, Page 305, called 5.08 acres;

- Luminant Mining Tract #271D – Virginia Boyd to Texas Utilities Mining Company, December 7, 1993, Volume 812, Page 226, called 0.157 acres;

- Luminant Mining Tract #271E – Brian Betts, et ux Velda, to BLC Corporation c/o TXU Mining Company, December 12, 2001, Volume 1372, Page 168, called 15.73 acres;

- Luminant Mining Tract # 271F – James L. Clayton, et ux Edna, to BLC Corporation c/o TXU Mining Company, September 8, 2000, Volume 1275, Page 258, called 1.01 acres;

- Luminant Mining Tract #306 – Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 66.7 acres;

- Luminant Mining Tract #307 – C.H. Meyer, et ux Carol, to Texas Utilities Mining Company, August 30, 1989, Volume 575, Page 144, called 69.2 acres;

- Luminant Mining Tract #307A – Brian Betts, et ux Velda, to BLC Corporation c/o TXU Mining Company, December 12, 2001, Volume 1372, Page 168, called 3.27 acres;

- Luminant Mining Tract #312 – Aline B. Arnold to Texas Utilities Mining Company, August 13, 1993, Volume 789, Page 214, called 50.52 acres;

- Luminant Mining Tract #329 – Jno. B. Stephens, Jr., et ux Elizabeth, to Texas Utilities Generating Company, June 23, 1980, Volume 435, Page 214, called 998.684 acres and being more completely described as follows to wit;

METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "Lacy Surveying Property Corner" set for corner, which bears North 58 degrees 53 minutes and 21 seconds West, a distance of 628.92 feet, from a 1/2 inch iron rod found for corner at the Southeast corner of the above mentioned 112.3 acres Luminant Mining Tract #146, at the Northeast corner of the above mentioned 5.08 acres Luminant Mining Tract #271C and being in the centerline of County Road #2400, and said beginning iron rod has a Texas North Central Coordinate value of (N: 548,841.32) (E: 2756051.41);

Thence across the above mentioned tracts as follows;

South 00 degrees 12 minutes 20 seconds East, for a distance of 2968.31 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 00 degrees 49 minutes 16 seconds West, for a distance of 627.97 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 19 degrees 17 minutes 44 seconds East, for a distance of 408.24 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

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South 06 degrees 22 minutes 16 seconds East, for a distance of 473.86 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 65 degrees 19 minutes 35 seconds East, for a distance of 108.77 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 14 degrees 14 minutes 22 seconds East, for a distance of 615.69 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 74 degrees 54 minutes 35 seconds West, for a distance of 136.97 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 42 degrees 58 minutes 00 seconds West, for a distance of 169.01 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 62 degrees 32 minutes 42 seconds West, for a distance of 159.00 feet, to a point for corner;

South 83 degrees 38 minutes 04 seconds West, for a distance of 1505.73 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 33 degrees 56 minutes 27 seconds East, for a distance of 808.47 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 00 degrees 10 minutes 28 seconds West, for a distance of 1969.36 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 19 degrees 09 minutes 02 seconds East, for a distance of 438.09 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 08 degrees 47 minutes 32 seconds West, for a distance of 606.50 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 00 degrees 54 minutes 50 seconds East, for a distance of 1127.53 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 02 degrees 38 minutes 42 seconds East, for a distance of 1169.81 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 42 degrees 27 minutes 51 seconds East, for a distance of 184.06 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 84 degrees 47 minutes 11 seconds East, for a distance of 688.56 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 49 degrees 30 minutes 42 seconds East, for a distance of 171.11 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 09 degrees 38 minutes 32 seconds West, for a distance of 275.03 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

and South 03 degrees 33 minutes 43 seconds West, for a distance of 271.68 feet, to the place of beginning, and containing **143.7 acres.**

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27. Distances and acreage recited in surface. Scale factor = 0.9998552.

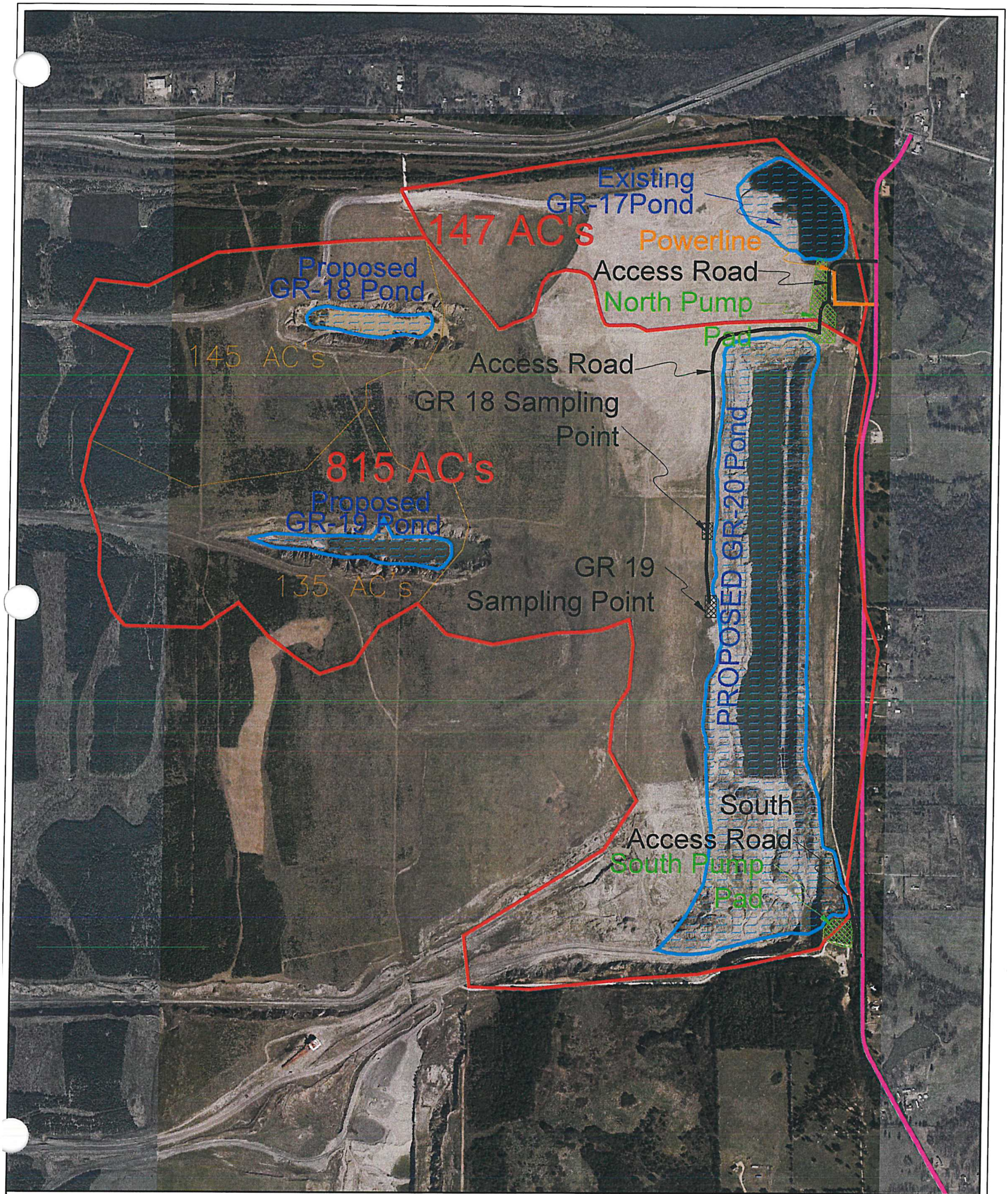
I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020 and January, 2021.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper

Daniel Lee Cooper R.P.L.S. No. 6148

STATE OF TEXAS
REGISTERED
DANIEL LEE COOPER
6148
PROFESSIONAL
LAND SURVEYOR



Luminant ENERGY

SCALE

1,200 600 0 1,200 2,400

1" = 1,200

NETMWD Exhibit D

Winfield South G Area

Asset Closure

DWG BY cea

DATE 10/06/2020

EXHIBIT G

Environmental Permits

1. Railroad Commission of Texas, Permit No. 34 F. Last renewed March 25, 2014. Expiration only on closure of bond and permit.
2. Railroad Commission of Texas, Coal Exploration Permit No. 140. Last renewed May 26, 2020.
3. Texas Commission on Environmental Quality, Texas Pollutants Discharge Elimination System, Industrial Wastewater Permit No. WQ0002697000. Issued May 13, 2019. Expires May 13, 2024. Renew DATE December 1, 2023.
4. Texas Commission on Environmental Quality, Ash Disposal Area, Non-Hazardous Landfill Solid Waste Registration No. 30081. Original 1991. Expansion 1996 and 2008.
5. US Army Corps of Engineers, Nationwide 49 SWF-201700452. Issued April 24, 2018. Valid until March 18, 2022.
6. US Army Corps of Engineers, Nationwide 21 SWF-200600563. Issued March 31, 2009. Reauthorized April 29, 2011, Reauthorized February 20,2013 Valid till March 18, 2017. Open until mitigation complete.
7. US Army Corps of Engineers, Nationwide 21 SWF-200000432. Issued March 23, 2001. Valid until March 31, 2009. Open until mitigation complete.
8. US Army Corps of Engineers, Nationwide 21 SWF-199700336. Issued July 1, 1997. Valid until March 23, 2001. Open until mitigation complete.
9. US Army Corps of Engineers, Nationwide 21 SWF-199200184. Issued April 9, 1992. Valid until July 1, 1997. Open until mitigation complete.

EXHIBIT H

NETMWD BOARD AUTHORIZATION TO EXECUTE

RESOLUTION NO. 2021-02

THE STATE OF TEXAS §
§
NORTHEAST TEXAS §
MUNICIPAL WATER DISTRICT §

A RESOLUTION AUTHORIZING THE EXECUTION OF A DEVELOPMENT AGREEMENT AND RELATED DOCUMENTS WITH LUMINANT GENERATION COMPANY, LLC AND LUMINANT MINING COMPANY, LLC. AND TO FILE APPLICATIONS WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RELATED TO THE AGREEMENT

WHEREAS, the Northeast Texas Municipal Water District (the "District") is a conservation and reclamation district created in 1953 under Article XVI, Section 59 of the Texas Constitution; and

WHEREAS, the District was created by the Texas Legislature to, among other things, serve the water needs of its member cities and to manage the Big Cypress Creek Basin (the "Basin") and associated reservoirs, including Lake O' the Pines; and

WHEREAS, the District seeks additional water supply in the upper end of the Basin for beneficial downstream uses during critical low-flow and drought conditions within the Basin; and

WHEREAS, Luminant Generation Company LLC, a Texas limited liability company and Luminant Mining Company LLC, a Texas limited liability company (together "Luminant") own property known as the Monticello Winfield South Mine, located in or near Winfield, Texas, in the Tankersley Creek region of the Basin (the "Property"); and

WHEREAS, the Property having been permitted for mining operations is no longer operated as a mine and is going through reclamation pursuant to the Railroad Commission of Texas requirements ("Reclamation"); and

WHEREAS, the Property contains certain final mining pits that upon completion of Reclamation will have the capacity to impound and store water which can then be pumped into tributaries of the Basin (the "Mining Pits"); and

WHEREAS, there has been increasing state legislative interest in the feasibility and desirability of converting quarries and surface mine pits for the use as water storage reservoirs to enhance the state's available water supply; and

WHEREAS, the District, under the direction of the Board of Directors, has been in negotiations with Luminant about the use of its Mining Pits for water supply purposes; and

WHEREAS, the District has found that the water from the Mining Pits, if made available to the Basin, will be put to a beneficial use, serve a public purpose, be in the best interest and welfare of the public and provide long-term benefit to the environmental condition of the Basin, including improved water quality, seasonal flows and the reintroduction, together with U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department, of the American paddlefish (Polyodon spathula) to the Basin; and

WHEREAS, the District and Luminant have negotiated a Development Agreement under which the District will acquire the right to store water in and release water from the Mining Pits to tributaries of the Basin for the furtherance of the above purposes (the "Development Agreement"); and

WHEREAS, the District now desires to execute the Development Agreement and to authorize its Executive Director, on behalf of the District, to prepare and execute such Development Agreement and all associated documents.

NOW, THEREFORE, THE BOARD OF DIRECTORS IN ITS REGULAR MEETING RESOLVES THAT:

1. The above recitals are true and correct.

2. The Board of Directors of the District hereby direct the Executive Director to prepare and execute the Development Agreement with Luminant.

3. The Executive Director of the District is further authorized to take any and all action necessary to implement this Development Agreement, including but not limited to the execution of all other documents associated with or necessary to implement the terms of the Development Agreement and the filing of any water rights or other applications with the Texas Commission on Environmental Quality for the necessary authorizations to implement the terms of the Development Agreement.

4. The Executive Director of the District is further authorized to take any and all action necessary to coordinate with Luminant as may be required in order to implement the terms of the Development Agreement.

THIS RESOLUTION ADOPTED BY THE DISTRICT BOARD OF DIRECTORS IN A REGULAR MEETING ON MAY 24, 2021.

By: ______________________
President

____
Secretary

EXHIBIT I

FORM OF WATER STORAGE AGREEMENT

Water Storage Agreement
for the Luminant Monticello Winfield South Mine

WHEREAS, this Water Storage Agreement (the "Agreement") is entered into between the Northeast Texas Municipal Water District (the "District") and Luminant Generation Company LLC and Luminant Mining Company LLC (together, "Luminant"); and

WHEREAS, the District is a conservation and reclamation district created in 1953 under Article XVI, Section 59 of the Texas Constitution; and

WHEREAS, the District was created by the Texas Legislature to, among other things, serve the water needs of its member cities and to manage the Big Cypress Creek Basin (the "Basin") and associated reservoirs, including Lake O' the Pines; and

WHEREAS, the District seeks additional water supply in the upper end of the Basin for beneficial downstream uses during critical low-flow and drought conditions within the Basin; and

WHEREAS, Luminant owns property known as the Monticello Winfield South Mine, located in or near Winfield, Texas, in the Tankersley Creek region of the Basin (the "Property"); and

WHEREAS, the Property was once permitted for mining operations by the Railroad Commission of Texas ("RRC") but ceased such operations on January 15, 2015 and is now subject to the reclamation requirements of the RRC; and

WHEREAS, the Property contains the final mining pit Pond GR-20 that is interconnected by hydrology and/or pumping operations with Ponds GR-17, GR-18 and GR-19, as shown on Exhibit A (collectively, the "Ponds"); and

WHEREAS, Pond GR-20 has the capacity to impound and store approximately 6,810 acre-feet of water on approximately 143 surface acres of land with a total watershed of approximately 815 acres, and such water can be discharged into tributaries of the Basin or into Pond GR-17 for storage before being discharged into tributaries of the Basin; and

WHEREAS, on _________, the District and Luminant entered into a Development Agreement whereby Luminant agreed to grant the District access to and use of Pond GR-20 and GR-17 for water storage, management, and release into tributaries of the Basin if the District obtained the necessary water rights for such use and Pond GR-20 and the Ponds were declared permanent for purposes of reclamation by the RRC (the "Development Agreement"); and

WHEREAS, on ____________ the District secured from the Texas Commission on Environmental ("TCEQ") Water Use Permit No. ______________ for the storage of 6,810 acre-feet of water in Pond GR-20 and an annual release of not less than 500 acre-feet of water into tributaries of the Basin; and

WHEREAS, Luminant will secure from the RRC full approval for the reclamation, permanent status of the Ponds and timely release of the Property from reclamation obligations by the RRC during the course of this Agreement; and

WHEREAS, the District desires to store water in Pond GR-20 and release water from the Ponds pursuant to the terms outlined in the Development Agreement between the District and Luminant.

NOW, THEREFORE, the parties agree as follows:

1. Water Storage Space. The District shall have the right to utilize the water storage space of Pond GR-20, as shown on Exhibit A, to impound and store at least 6,810 acre-feet of water (the "Water Storage Space") and subsequently discharge at least 500 acre-feet of such water annually into tributaries of the Basin from the north, east, or south sides of the perimeter of Pond GR-20 and the adjacent property lines of the Property on each of those sides of such perimeter, or into Pond GR-17 for storage before subsequently discharging such water from Pond GR-17 into tributaries of the Basin, as authorized by TCEQ Water Use Permit No. ________ and contemplated in the Development Agreement between the District and Luminant. The discharge of water from Pond GR-20 or Pond GR-17 by the District will be made at any time so long as the water is available, the water meets applicable TCEQ water quality standards, and the District is in compliance with TCEQ Water Use Permit No. ____________.

2. State Law. The District shall utilize the Water Storage Space in a manner consistent with the laws of the State of Texas and TCEQ Water Use Permit No. __________. This Agreement is subject to all conditions, provisions, and limitations included in TCEQ Water Use Permit No. _____. Further, this Agreement is subject to all applicable Federal, State and local laws, and any applicable ordinances, rules, orders and regulations of any local, State or Federal governmental authority having jurisdiction. However, nothing contained in this Agreement shall be construed as a waiver of any right to question or contest any law, ordinance, order, rule, or regulation of any governmental authority.

3. Consideration. In consideration of Luminant's provision to the District of the rights to the Water Storage Space as outlined in Section 1 and of the rights for the District to access and use the Water Storage Space as set forth herein and in the Development Agreement, it is agreed that the District shall make an annual payment to Luminant of $100,000 for such right.

4. Date of Payments. In accordance with the provision of Section 3, the District shall pay to Luminant the first annual payment of $100,000 no later than ______________. Beginning in year ____, each subsequent annual payment will be due by _________________ of each year.

5. Term. This Agreement shall become effective on the date this Agreement is fully executed by both the District and Luminant ("Effective Date") and continue for fifty (50) years

("Term"). Prior to the termination of the Term and by mutual agreement, the District and Luminant may extend this Agreement for additional periods of five (5) years each.

6. Remedies for Nonpayment or Default.
   a. In the event sufficient water is not available to allow for the storage of approximately 6,810 acre-feet of water or water reaching Ponds GR-20 or GR-17 is not of a quality that can be released into the Basin for a beneficial use or is not of a quality that is in accordance with the applicable TCEQ water quality standards for discharge into the Basin, the District may, in addition to and without impairing any other remedy available to it, unilaterally terminate its obligation under this Agreement by providing 30 days written notice of such termination delivered to Luminant and providing Luminant with a reasonable opportunity to cure the default (such reasonable time determined based on the nature of the alleged failure, but in no event less than thirty (30) days after written notice of the alleged failure has been given).
   b. In the event the District fails to make any payment to Luminant when due under this Agreement or otherwise be in default under this Agreement, Luminant at its sole option and in addition to and without impairing any other remedy available to it on account of the default, may elect to either (i) temporarily suspend its duty to make Water Storage Space available to the District under this Agreement, or (ii) unilaterally terminate this Agreement by providing 30 days written notice of such termination delivered to the District and providing the District with a reasonable opportunity to cure the default (such reasonable time determined based on the nature of the alleged failure, but in no event less than thirty (30) days after written notice of the alleged failure has been given). Nothing in this Agreement shall be construed in any manner so as to abridge, limit, or deprive either party of any means which it would otherwise have or enforcing any right or remedy either in law or in equity for breach of any of the provisions contained in this Agreement.

7. Operation and Maintenance. Luminant shall, at Luminant's sole cost and expense, maintain Pond GR-20 and the Ponds in compliance with all applicable laws for the purposes expressed herein; provided, however that the District shall be responsible, at the District's sole cost and expense, for all maintenance related to the intake, release and/or use of the water contained in Pond GR-20 and all repairs resulting from the District's negligence in operation of Pond GR-20. Luminant shall not alter the Ponds or Pond GR-20 in any manner that would prevent either 1) water being stored in and flowing from ponds GR-18 and GR-19 into Pond GR-20, or 2) water from Pond GR-20 being transferred to, stored in, and released from Pond GR-17 into the Basin. Luminant shall not divert water from the Ponds or the watersheds serving the Ponds for any purpose. This obligation shall run with the land and shall be binding upon Luminant's successors and/or assigns in title. The District shall have a right to make releases of water into tributaries of the Basin in accordance with the terms of this Agreement.

8. Preserving the Watersheds. Luminant shall have an ongoing obligation to help preserve the 815-acre watershed that serves Pond GR-20 and the 147-acre watershed that serves pit GR-17. Luminant shall not take any action to alter the contributing 815-acre watershed of

Pond GR-20 or the contributing 147-acre watershed of Pond GR-17 so as to prevent water within these watersheds from reaching Pond GR-20 and Pond GR-17, respectively. Luminant shall not take any action that would cause water quality contamination of the contributing 815-acre watershed of Pond GR-20 or the contributing 147-acre watershed of Pond GR-17. This obligation shall run with the land and shall be binding upon Luminant's successors and/or assigns in title.

9. Access and Inundation Easement. Pursuant to the terms outlined in the Development Agreement, Luminant will grant to the District by separate instrument an access and inundation easement to facilitate the use of Pond GR-20 and Pond GR-17 for the storage of water and for the construction, operation and maintenance of the facilities necessary for the discharge of water from the Ponds into tributaries of the Basin.

10. Release of Claims. The District shall hold and save Luminant, including its officers, agents, and employees, harmless from liability of any nature or kind for or on account of any claim for damages which may be filed or asserted as a result of releases of water from the Ponds by the District, or as a result of the construction, operation, or maintenance of the features or appurtenances owned and operated by the District.

11. Assignment. Any assignment of the District's rights and obligations hereunder will not be effective unless first agreed to in writing by Luminant, whose consent and agreement shall not be unreasonably withheld. This restriction shall not be construed to apply to any water which may be obtained from the Water Storage Space by the District and furnished to any third party or parties. Any assignment of Luminant's rights and obligations hereunder to a person or entity that is not affiliated with or otherwise legally related to Luminant will not be effective unless first agreed to in writing by the District, whose consent and agreement shall not be unreasonably withheld.

12. No Obligation. This Agreement does not create an obligation by the District to store or release water from Pond GR-20 or to maintain existing pumping structures (specifically excluding any facilities added by the District) associated with the storage of water in and release of water from Pond GR-20 or Pond GR-17.

13. Notices. Any notice or payment made under this Agreement shall be deemed received on the actual receipt by mail, Federal Express or other delivery service, fax, email or hand delivery, addressed to Luminant or the District, as the case may be, at the addresses provided below:

The District:
P.O. Box 955
Hughes Springs, Texas 75656
Attn: Executive Director
Email: [redacted]

Luminant:
6555 Sierra Drive
Irving, Texas 75039
Attn: General Counsel (Real Estate)
Email: [redacted]

14. Severability. The provisions of this Agreement are severable, and if for any reason any one or more of the provisions contained in this Agreement shall be held to be invalid, illegal, or unenforceable in any respect, the invalidity, illegality, or unenforceability shall not affect any other provisions of this Agreement and this Agreement shall remain in effect and be construed as if the invalid, illegal, or unenforceable provision had never been contained in the Agreement.

15. Force Majeure. Notwithstanding anything herein to the contrary, neither party shall be under any liability or be deemed in default with respect to its obligations under this Agreement for any failure to perform or for delay in performing such party's obligations (except for the obligation to pay money) where such failure or delay is due to force majeure, while and to the extent that such performance is prevented by such cause. The term force majeure means acts of God, fire, storm, flood, war, riots, sabotage, drought, lack of availability of water due to sedimentation, low inflows of water, strikes or other differences with labor (whether or not within the power of the parties to settle same), decrees or orders of the courts or other governmental authority, or other similar or dissimilar causes not within the reasonable control of such party and not due to negligence of such party. Each party shall use due diligence to resume performance of any obligation suspended by force majeure at the earliest practicable time.

[Remainder of the page intentionally left blank.]

The parties have executed this Agreement on the day and year written below.

The District:

Northeast Texas Municipal Water District

By: ________________________________

Name:________________________________

Title:________________________________

Date:________________________________

Luminant:

Luminant Generation Company LLC, a Texas limited liability company

By: ________________________________

Name:________________________________

Title:________________________________

Date:________________________________

Luminant Mining Company LLC, a Texas limited liability company

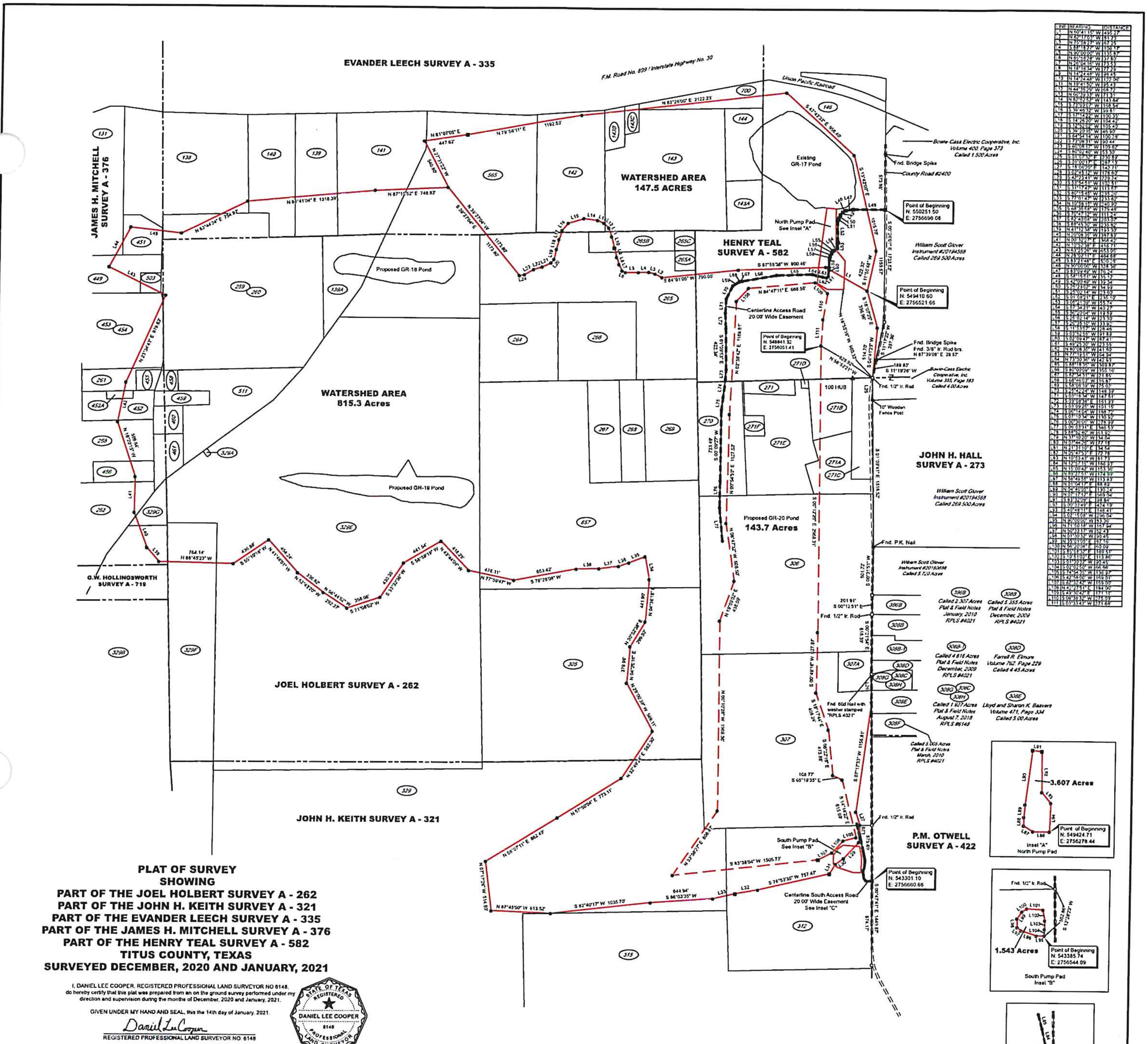
By: ________________________________

Name:________________________________

Title:________________________________

Date:________________________________

Exhibit A – The Ponds



PLAT OF SURVEY
SHOWING
PART OF THE JOEL HOLBERT SURVEY A - 262
PART OF THE JOHN H. KEITH SURVEY A - 321
PART OF THE EVANDER LEECH SURVEY A - 335
PART OF THE JAMES H. MITCHELL SURVEY A - 376
PART OF THE HENRY TEAL SURVEY A - 582
TITUS COUNTY, TEXAS
SURVEYED DECEMBER, 2020 AND JANUARY, 2021

I, DANIEL LEE COOPER, REGISTERED PROFESSIONAL LAND SURVEYOR NO 6148, do hereby certify that this plat was prepared from an on the ground survey performed under my direction and supervision during the months of December, 2020 and January, 2021.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper

REGISTERED PROFESSIONAL LAND SURVEYOR NO. 6148

STATE OF TEXAS REGISTERED DANIEL LEE COOPER 6148 PROFESSIONAL LAND SURVEYOR

TRACT #	GRANTOR	GRANTEE	DATE	VOLUME	PAGE	ACREAGE	NOTES
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139A	R.W. Stidham ET UX Juanita	Texas Utilities Mining Company	1/12/87	508	871	8 794	
140	Harry B. Hutchins	Texas Utilities Generating Company	5/8/80	434	72	12 865	
141	Delma Gene France ET UX Callie Pauline France	Texas Utilities Mining Company	12/18/85	493	28	22 428	
142	Nickie Paul Smith ET UX Brenda	Texas Utilities Mining Company	12/9/91	687	301	19 954	
143	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	33 22	0.15 acres in county road
143A	Guaranty Bank	Texas Utilities Mining Company	5/15/89	558	82	6	
143B	Len F. Newman	Texas Utilities Mining Company	3/27/93	762	106	1 99	
143C	Donnie R. Newman ET UX Marzelle	Texas Utilities Mining Company	1/28/93	752	224	0 992	
144	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	6 58	0.35 acres in county road
146	George E. Walthall ET UX Pauline	Texas Utilities Mining Company	12/9/92	745	79	112 3	2.21 acres in county roads 0.25 acres in F.M. 899
258	Donald Rex Amerson ET UX Jerry	Texas Utilities Generating Company	6/1/79	427	695	17 9	
259 & 260	G.B. Young ET AL	Texas Utilities Generating Company	10/23/79	429	308	88 23	also in Field Notes dated 3/14/84 RPLS # 3889 called 56 95 acres
261	James L. Prewitt ET UX Deborah	Texas Utilities Generating Company	9/5/79	428	322	3	
262	Jesse F. Haley ET UX Dorothy	Texas Utilities Generating Company	6/15/82	454	323	223.79	
264	Loyd F. Phillips	Texas Utilities Mining Company	3/11/91	648	1	14 987	
265	Frances Montgomery Goates ET AL	Texas Utilities Mining Company	1/31/92	696	176	42 273	0.87 acres in county roads
265A	E. Maxine Wigginton	Texas Utilities Mining Company	1/31/92	696	173	0 99	0.13 acres in county road
265B	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	4 3	
265C	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	1 01	0.13 acres in county road
266	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	14 98	0.11 acres in county road
267	Baxter C. Moore ET UX Martha	Texas Utilities Mining Company	2/3/92	696	280	7.99	0.15 acres in county road
268	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	6	0.11 acres in county road
269	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	13 24	0.28 acres in county road
270	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	12 96	0.38 acres in county road
271	George M. Betts ET UX Quida	First Security Bank	5/12/98	1172	260A	1.79	0.41 acres in county road
271A	A.L. Stames ET UX Ruth	Texas Utilities Mining Company	7/15/93	784	266	6 37	0.1 acre in county road
271B	Albert V. Freeman ET UX Patricia	Texas Utilities Mining Company	6/29/93	780	238	5 86	0.32 acres in county road
271C	Jerry Wayne Grissom ET UX Sandra	Texas Utilities Mining Company	7/28/93	786	305	5 08	0.7 acres in county road
271D	Virginia Boyd	Texas Utilities Mining Company	12/7/93	812	226	0.157	0.05 acres in county road
271E	Brian Betts ET UX Velda	BLC Corporation c/o TXU Mining Company	12/12/01	1372	168	15.73	0.09 acres in county road
271F	James L. Clayton ET UX Edna	BLC Corporation c/o TXU Mining Company	9/8/00	1275	258	1 01	also 0.12 acres for access easement
305	Hayward Rigano ET UX Jesilin	Texas Utilities Mining Company	9/14/92	732	79	92 89	
306	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	66 7	0.95 acres in county road
307	C.H. Meyer ET UX Carol	Texas Utilities Mining Company	8/30/89	575	144	69 2	
307A	Brian Betts ET UX Velda	BLC Corporation c/o TXU Mining Company	12/12/01	1372	168	3 27	0.21 acres in county road SW-35
312	Aline B. Arnold	Texas Utilities Mining Company	8/13/93	789	214	50 52	0.7 acres in county road SW-35
315	Ella Jacks ET AL	Texas Utilities Mining Company	4/27/90	606	307	102 53	
329	Jno. B. Stephens Jr. ET UX Elizabeth	Texas Utilities Generating Company	6/23/80	435	214	998 684	Includes Tract 329 - 329B - 329E - 329G
329A	Tri-Water Supply Corporation	Texas Utilities Generating Company	9/19/83	467	751	0 057	
9B							Field Notes dated 11/5/93 RPLS #1756 called 159.15 acres
E							Field Notes dated 11/5/93 RPLS #1756 not completed used attached plat called 273.63 acres part of 998.684 acres Tract 329
F							Field Notes dated 11/5/93 RPLS #1756 called 27.17 acres
9G							Field Notes dated 11/5/93 RPLS #1756 called 2.28 acres
449	Edwin G. Sisk ET UX Bennie A.	Texas Utilities Generating Company	9/24/82	457	3	8 53	
451	Robert D. Caldwell ET UX Erma	Texas Utilities Generating Company	2/8/80	431	392	3 64	
452	Harvey G. Landrum ET UX Patricia	Texas Utilities Mining Company	4/2/85	484	275	4.588	
452A	Kip Franklin Davis ET UX Cynthia	Texas Utilities Mining Company	4/2/85	484	273	0.5	
453 & 454	O.M. Jackson ET UX Mildred	Texas Utilities Generating Company	8/25/82	456	155	14.94	
455	Aubrey William Lunsford ET UX Roberta	Texas Utilities Generating Company	3/20/80	433	36	1	also referenced in Field Notes dated 8/10/79 RPLS #1234 called 1.09 acres
456	Douglas Hutchings ET UX Jo	Texas Utilities Generating Company	9/15/80	437	455	3 06	
458	Montie A. Harkrider	Texas Utilities Mining Company	11/15/85	491	807	1	
459	Kenneth R. Gordon ET UX Janet	Texas Utilities Generating Company	2/6/79	429	528	1 96	
460	Michael D. Kellam ET UX Debra	Texas Utilities Mining Company	9/27/84	478	338	2 01	
461	Charles Edward Taylor	Texas Utilities Mining Company	7/30/86	501	810	3.1	also referenced in James E Trammell ET UX Deborah To Texas Utilities Mining Company 7/23/96 Volume 501-Page 578 called 7 acres First Tract & 1.50 acres Second Tract also Field Notes dated 8/11/79 RPLS #1234 called 3.10 acres
503	Carla G. Lehman ET VIR Jimmy	Texas Utilities Generating Company	12/2/82	458	627	1	
511	Charles Dwight Matthews ET UX Sue	Texas Utilities Mining Company	11/15/85	491	803	14 61	
565	Barbara Beth Joyner	Texas Utilities Mining Company	6/15/92	718	161	60 03	1.8 acres in road
657	Hayward Rigano ET UX Jesilin	Texas Utilities Mining Company	9/14/92	732	82	84.34	0.37 acres in county road
700	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	5 03	0.13 acres in county road

NOTES

- Grid Coordinates and Bearings based on Texas State Plane Coordinate System, Texas North Central Zone 4202, NAD 27.
- Distances and acreage recited in surface. Combined Scale Factor = 0.9998552.
- This survey was prepared without the benefit of a Title Commitment.
- No attempt has been made to locate easements, utilities or improvements other than those shown hereon.
- Deed references shown hereon refer to the Deed, Land or Official Public Records of Titus County, Texas and may not reflect current ownership.
- Field Notes Prepared of Even Date.

LEGEND

- Set 1/2" Ir. Rod with cap stamped "LACY SURVEYING PROPERTY CORNER"
- Found Ir. Rod (size noted)
- Set P.K. Nail with washer stamped "RPLS 4021"
- Found P.K. Nail
- Found Right-of-Way Monument
- Point for corner
- Power Pole
- Wire Fence
- Pipe Fence
- Chain Link Fence
- Aerial Power Line
- Pipeline
- Electric Transmission Line
- Road
- Abstract Line

0 100' 200' 300' 400' 500' 750' 1000'

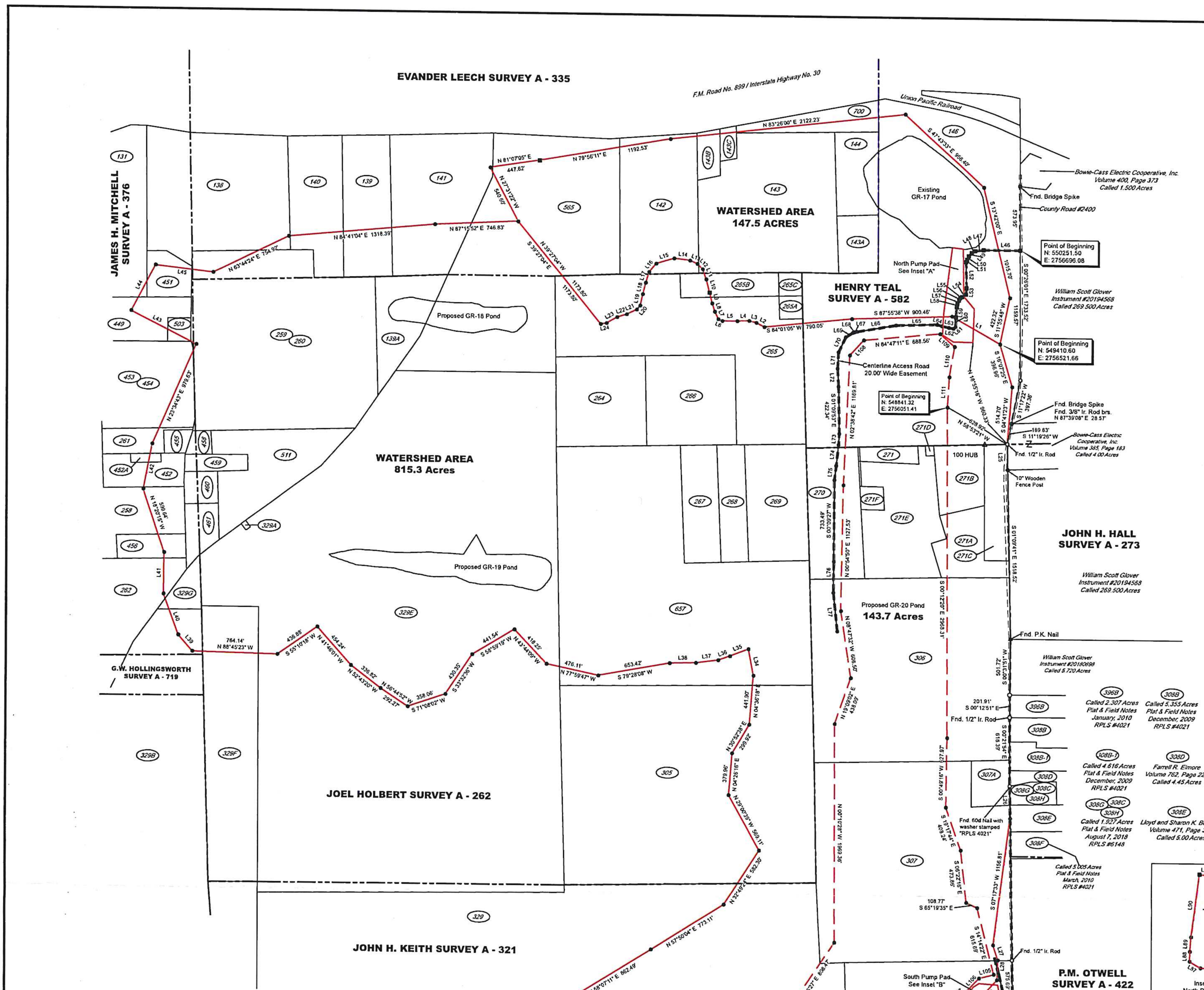
ADDRESS:

JOB # : 2020215

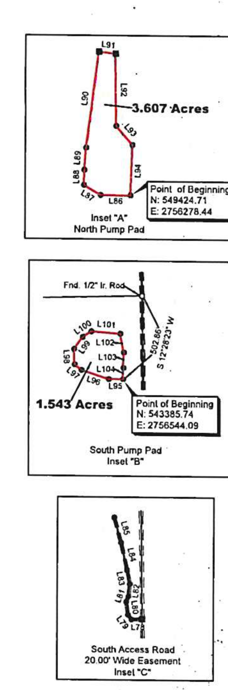
CLIENT : Luminant

SCALE: 1" = 500.00'

LACY SURVEYING
P.O. BOX 736
ARP, TEXAS 75750
PHONE & FAX (903) 859 - 9942
LacySurveying.com
Texas Board of Professional Land Surveying Firm #100299 00



LINE	BEARING	DISTANCE
L1	N 60°41'15" W	495.27'
L2	N 62°17'03" W	81.23'
L3	N 75°58'27" W	67.25'
L4	S 88°18'27" W	106.17'
L5	N 90°00'00" W	135.87'
L6	N 65°56'28" W	37.80'
L7	N 26°04'16" W	73.53'
L8	N 18°16'34" W	77.29'
L9	N 14°24'48" W	98.45'
L10	N 14°24'48" W	122.06'
L11	N 19°41'50" W	95.43'
L12	N 44°35'29" W	68.72'
L13	N 66°39'33" W	71.31'
L14	N 82°52'52" W	143.64'
L15	S 73°03'07" W	168.54'
L16	S 39°46'32" W	99.81'
L17	S 17°14'22" W	100.35'
L18	S 14°26'20" W	104.42'
L19	S 12°52'02" W	105.40'
L20	S 39°20'15" W	46.90'
L21	S 64°54'14" W	100.28'
L22	S 73°08'31" W	90.44'
L23	S 60°08'17" W	109.62'
L24	S 80°02'40" W	53.30'
L25	S 01°07'32" E	230.89'
L26	S 01°00'17" E	287.13'
L27	S 18°06'20" E	142.71'
L28	S 02°45'12" W	178.60'
L29	S 42°23'41" W	229.24'
L30	S 53°54'51" W	102.51'
L31	S 31°17'47" W	113.57'
L32	S 80°15'45" W	235.26'
L33	S 77°01'47" W	233.62'
L34	N 10°58'15" W	240.90'
L35	S 68°35'58" W	179.48'
L36	S 70°47'12" W	111.24'
L37	S 82°40'08" W	203.07'
L38	S 88°45'30" W	235.82'
L39	N 41°12'38" W	193.30'
L40	N 20°08'35" W	387.83'
L41	N 00°32'27" E	368.42'
L42	N 10°52'38" E	416.71'
L43	N 63°25'26" W	653.05'
L44	N 28°02'11" E	464.68'
L45	S 83°21'48" E	520.25'
L46	N 90°00'00" W	328.36'
L47	S 83°09'49" W	76.24'
L48	S 58°15'51" W	35.12'
L49	S 42°00'49" W	39.34'
L50	S 25°29'02" W	34.99'
L51	S 25°02'14" W	23.60'
L52	S 01°08'21" E	235.10'
L53	S 05°21'39" W	55.74'
L54	S 57°34'21" W	40.27'
L55	S 56°20'04" W	19.59'
L56	S 25°02'14" W	23.30'
L57	S 26°35'10" W	33.92'
L58	S 11°53'57" W	28.46'
L59	S 03°52'55" W	91.89'
L60	S 02°09'47" W	87.41'
L61	S 49°25'30" W	23.55'
L62	N 80°08'35" W	41.60'
L63	N 77°19'51" W	64.94'
L64	N 73°30'36" W	42.93'
L65	S 88°18'35" W	369.87'
L66	S 80°00'09" W	355.16'
L67	S 82°34'31" W	21.85'
L68	S 68°46'03" W	16.87'
L69	S 58°08'39" W	75.02'
L70	S 25°42'24" W	148.39'
L71	S 03°18'34" W	147.51'
L72	S 03°08'38" E	161.93'
L73	S 03°09'25" W	101.19'
L74	S 06°14'04" W	188.72'
L75	S 07°10'34" W	130.92'
L76	S 00°36'06" W	278.99'
L77	S 06°03'31" E	346.53'
L78	S 88°52'40" W	61.92'
L79	N 37°10'20" W	34.04'
L80	N 07°44'26" W	77.18'
L81	N 21°31'10" E	34.54'
L82	N 05°47'53" E	72.78'
L83	N 10°53'43" W	81.73'
L84	N 12°57'15" W	166.93'
L85	N 15°00'42" W	153.36'
L86	N 89°27'51" W	174.99'
L87	N 58°49'55" W	113.83'
L88	N 01°04'17" E	88.69'
L89	N 04°46'05" E	130.24'
L90	N 07°17'12" E	569.04'
L91	S 83°32'09" E	98.84'
L92	S 00°33'49" E	424.19'
L93	S 40°48'11" E	148.41'
L94	S 02°15'08" W	296.04'
L95	N 90°00'00" W	83.36'
L96	N 71°50'18" W	167.94'
L97	N 50°33'17" W	52.43'
L98	N 01°30'32" W	90.45'
L99	N 35°01'05" E	87.16'
L100	N 56°20'08" E	60.09'
L101	S 85°58'32" E	169.51'
L102	S 10°51'02" E	113.86'
L103	S 01°30'32" W	90.45'
L104	S 02°02'50" W	66.66'
L105	S 74°54'35" W	136.97'
L106	S 42°58'00" W	169.01'
L107	S 62°32'42" W	159.00'
L108	N 42°27'51" E	184.05'
L109	S 49°30'42" E	171.11'
L110	S 09°38'32" W	275.03'
L111	S 03°33'43" W	271.68'



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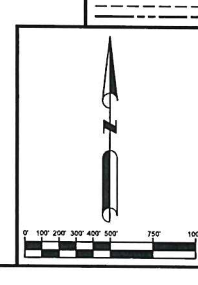
264	Loyd F. Phillips	Texas Utilities Mining Company	3/11/91	648	1	14.987	
265	Frances Montgomery Goates ET AL	Texas Utilities Mining Company	1/31/92	696	176	42.273	0.87 acres in county roads
265A	E. Maxine Wigginton	Texas Utilities Mining Company	1/31/92	696	173	0.99	0.13 acres in county road
265B	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	4.3	
265C	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	1.01	0.13 acres in county road
266	James D. Maxton ET UX Fleda	Texas Utilities Mining Company	5/12/94	840	241	14.98	0.11 acres in county road
267	Baxter C. Moore ET UX Martha	Texas Utilities Mining Company	2/3/92	696	280	7.99	0.15 acres in county road
268	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	6	0.11 acres in county road
269	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	13.24	0.28 acres in county road
270	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	12.96	0.38 acres in county road
271	George M. Betts ET UX Quida	First Security Bank	5/12/98	1172	260A	1.79	0.41 acres in county road
271A	A.L. Starnes ET UX Ruth	Texas Utilities Mining Company	7/15/93	784	266	6.37	0.1 acre in county road
271B	Albert V. Freeman ET UX Patricia	Texas Utilities Mining Company	6/29/93	780	238	5.86	0.32 acres in county road
271C	Jerry Wayne Grissom ET UX Sandra	Texas Utilities Mining Company	7/28/93	786	305	5.08	0.7 acres in county road
271D	Virginia Boyd	Texas Utilities Mining Company	12/7/93	812	226	0.157	0.05 acres in county road
271E	Brian Betts ET UX Velda	BLC Corporation c/o TXU Mining Company	12/12/01	1372	168	15.73	0.09 acres in county road
271F	James L. Clayton ET UX Edna	BLC Corporation c/o TXU Mining Company	9/8/00	1275	258	1.01	also 0.12 acres for access easement
305	Hayward Rigano ET UX Jesilin	Texas Utilities Mining Company	9/14/92	732	79	92.89	
306	Daisy Harris Dobbs ET VIR Bill	Texas Utilities Mining Company	12/10/93	812	287	66.7	0.95 acres in county road
307	C.H. Meyer ET UX Carol	Texas Utilities Mining Company	8/30/89	575	144	69.2	
307A	Brian Betts ET UX Velda	BLC Corporation c/o TXU Mining Company	12/12/01	1372	168	3.27	0.21 acres in county road SW-35
312	Aline B. Arnold	Texas Utilities Mining Company	8/13/93	789	214	50.52	0.7 acres in county road SW-35
315	Ella Jacks ET AL	Texas Utilities Mining Company	4/27/90	606	307	102.53	
329	Jno. B. Stephens Jr. ET UX Elizabeth	Texas Utilities Generating Company	6/23/80	435	214	998.684	Includes Tract 329 - 329B - 329E - 329G
329A	Tri-Water Supply Corporation	Texas Utilities Generating Company	9/19/83	467	751	0.057	
329B							Field Notes dated 11/5/93 RPLS #1756 called 159.15 acres
329E							Field Notes dated 11/5/93 RPLS #1756 not completed used attached plat called 273.63 acres part of 998.684 acres Tract 329
329F							Field Notes dated 11/5/93 RPLS #1756 called 27.17 acres
329G							Field Notes dated 11/5/93 RPLS #1756 called 2.28 acres
449	Edwin G. Sisk ET UX Bennie A.	Texas Utilities Generating Company	9/24/82	457	3	9.53	
451	Robert D. Caldwell ET UX Erma	Texas Utilities Generating Company	2/8/80	431	392	3.64	
452	Harvey G. Landrum ET UX Patricia	Texas Utilities Mining Company	4/2/85	484	275	4.588	
452A	Kip Franklin Davis ET UX Cynthia	Texas Utilities Mining Company	4/2/85	484	273	0.5	
453 & 454	O.M. Jackson ET UX Mildred	Texas Utilities Generating Company	6/25/82	456	155	14.94	
455	Aubrey William Lunsford ET UX Roberta	Texas Utilities Generating Company	3/20/80	433	36	1	also referenced in Field Notes dated 8/10/79 RPLS #1234 called 1.09 acres
456	Douglas Hutchings ET UX Jo	Texas Utilities Generating Company	9/15/80	437	455	3.06	
458	Montie A. Harkrider	Texas Utilities Mining Company	11/15/85	491	807	1	
459	Kenneth R. Gordon ET UX Janet	Texas Utilities Generating Company	2/6/79	429	528	1.96	
460	Michael D. Kellam ET UX Debra	Texas Utilities Mining Company	9/27/84	478	338	2.01	
461	Charles Edward Taylor	Texas Utilities Mining Company	7/30/86	501	810	3.1	also referenced in James E Trammell ET UX Deborah To Texas Utilities Mining Company 7/23/96 Volume 501-Page 578 called 7 acres First Tract & 1.50 acres Second Tract also Field Notes dated 9/11/79 RPLS #1234 called 3.10 acres
503	Carla G. Lehman ET VIR Jimmy	Texas Utilities Generating Company	12/2/82	458	627	1	
511	Charles Dwight Matthews ET UX Sue	Texas Utilities Mining Company	11/15/85	491	803	14.61	
565	Barbara Beth Joyner	Texas Utilities Mining Company	6/15/92	718	161	60.03	1.8 acres in road
657	Hayward Rigano ET UX Jesilin	Texas Utilities Mining Company	9/14/92	732	82	84.34	0.37 acres in county road
700	Jeanette Newman	Texas Utilities Mining Company	11/13/92	742	28	5.03	0.13 acres in county road

NOTES

- Grid Coordinates and Bearings based on Texas State Plane Coordinate System, Texas North Central Zone 4202, NAD 27.
- Distances and acreage recited in surface. Combined Scale Factor = 0.9998552
- This survey was prepared without the benefit of a Title Commitment.
- No attempt has been made to locate easements, utilities or improvements other than those shown hereon.
- Deed references shown hereon refer to the Deed, Land or Official Public Records of Titus County, Texas and may not reflect current ownership.
- Field Notes Prepared of Even Date.

LEGEND

- Set 1/2" Ir. Rod with cap stamped "LACY SURVEYING PROPERTY CORNER"
- Found Ir. Rod (size noted)
- Set P.K. Nail with washer stamped "RPLS 4021"
- Found P.K. Nail
- Found Right-of-Way Monument
- Point for corner
- Power Pole
- Wire Fence
- Pipe Fence
- Chain Link Fence
- Aerial Power Line
- Pipeline
- Electric Transmission Line
- Road
- Abstract Line



ADDRESS:

JOB # : 2020215

CLIENT : Luminant

SCALE: 1" = 500.00'

LACY SURVEYING

P.O. BOX 736
ARP, TEXAS 75750
PHONE & FAX (903) 659 - 9942
LacySurveying.com
Texas Board of Professional Land Surveying Firm #100299-00

7.a. Water Quality Sampling Summary

In 2018, Randy Rushin with Water Monitoring Solutions Conducted water quality sampling of the Proposed GR-20 Pond on two dates. The information gathered during those sampling sessions is summarized in the charts below. Please note that samples were not analyzed for TDS (this is not part of the routine TCEQ SWQM/CRP monitoring in the Cypress Creek Basin). Thus, TDS was calculated by multiplying conductivity by 0.65.

8/7/2018	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate (mg/L)	64.6	67.0	4	Routine grab	8/7/18 08:30 - 09:15
Chloride (mg/L)	5.36	5.62	4		
TDS (mg/L) *	181	187	33		
pH, standard units	8.06	8.45	33		
Temperature, degrees Celsius	24.90	29.92	33		

10/30/2018	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate (mg/L)	62.88	63.0	4	Routine grab	10/30/18 08:55 - 09:30
Chloride (mg/L)	5.45	5.51	4		
TDS (mg/L) *	180	207	29		
pH, standard units	7.61	7.78	29		
Temperature, degrees Celsius	19.27	20.57	29		

ALL DATA	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate (mg/L)	63.74	67.0	8	Routine grab	8/7 and 10/30/18 08:30 - 09:30
Chloride (mg/L)	5.41	5.62	8		
TDS (mg/L) *	181	207	62		
pH, standard units	7.84	8.45	62		
Temperature, degrees Celsius	22.09	29.92	62		

Additionally, please note that the results of the special studies in the Tankersley Creek watershed can be found on the NETMWD site. Please see the 2021 Cypress Creek Basin Highlights Report: https://netmwd.com/documents/1216/2021_Cypress_Creek_Basin_Highlights_Report__Approved.pdf. The genesis of these studies is discussed in the findings reported in the 2019 Basin Summary Report at: https://netmwd.com/documents/1216/FY_2019_Cypress_Basin_Summary_Report.pdf. These studies are referenced here to provide context regarding the water quality in Big Cypress Creek and are not associated with this pending water rights application.

Attached as 7.b. is a copy of the current TPDES Permit No. WQ0002697000 for Luminant Mining Company LLC's Monticello Lignite Mining Area. The discharge point from the GR-17 pond into Dragoo Creek (named G-13 in the TPDES permit) is associated with outfall 005 in the TPDES permit. As provided in Other Requirement 3.d., discharges from this outfall will be monitored until reclamation of the disturbed soils has been completed and the Phase Two performance bond is released by the Texas Railroad Commission.

REC'D MAY 22 2019

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 16, 2019

Mr. Justin Ewing, Sr. Environmental Specialist
Luminant Mining Company LLC
Environmental Services
6555 Sierra Drive
Irving, Texas 75039

Re: Luminant Mining Company LLC
TPDES Permit No. WQ0002697000, (CN603263773; RN102805900)

Dear Mr. Ewing:

Enclosed is a copy of the above referenced water quality permit issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

Self-reporting or Discharge Monitoring Forms and instructions will be forwarded to you from the Water Quality Management Information Systems Team so that you may comply with monitoring requirements. For existing facilities, revised forms will be forwarded if monitoring requirements have changed.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form (if needed) when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit, as applicable.

Should you have any questions, please contact Ms. Melinda Luxemburg, P.E. of the Texas Commission on Environmental Quality's (TCEQ) Wastewater Permitting Section at (512) 239-4671 or if by correspondence, include MC 148 in the letterhead address below.

Sincerely,

David W. Galindo, Director
Water Quality Division

DWG/ML/kb

cc: Mr. Gary Spicer, Environmental Services Water Quality & Solid Waste Manager, Luminant Mining Company LLC, Environmental Services Mining, 6555 Sierra Drive, Irving, Texas 75039

Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Toby Baker, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 16, 2019

TO: Persons on the attached mailing list.

RE: Luminant Mining Company LLC
Permit No. WQ0002697000

This letter is your notice that the Texas Commission on Environmental Quality (TCEQ) executive director (ED) has acted on the above-named application. According to 30 Texas Administrative Code (TAC) Section 50.135 the ED's action became effective on May 13, 2019, the date the ED signed the permit or other action unless otherwise specified in the permit or other action.

For certain matters, a **motion to overturn**, which is a request that the commission review the ED's action on an application, may be filed with the chief clerk. Whether a motion to overturn is procedurally available for a specific matter is determined by Title 30 of the Texas Administrative Code Chapter 50. According to 30 TAC Section 50.139, an action by the ED is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

If a motion to overturn is filed, the motion must be received by the chief clerk within 23 days after the date of this letter. An original and 7 copies of a motion must be filed with the chief clerk in person, or by mail to the chief clerk's address on the attached mailing list. On the same day the motion is transmitted to the chief clerk, please provide copies to the applicant, the ED's attorney, and the Public Interest Counsel at the addresses listed on the attached mailing list. If a motion to overturn is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the ED's action. The procedure and timelines for seeking judicial review of a commission or ED order are governed by Texas Water Code Section 5.351.

Individual members of the public may seek further information by calling the Public Education Program, toll free, at 1-800-687-4040.

Sincerely,

Bridget C. Bohac

Bridget C. Bohac
Chief Clerk

BCB/dcp

Enclosure

MAILING LIST
for
Luminant Mining Company LLC
Permit No. WQ0002697000

FOR THE APPLICANT:

Justin Ewing
Sr. Environmental Specialist
Luminant Mining Company LLC
Environmental Services Mining
6555 Sierra Drive
Irving, Texas 75039

Gary Spicer
Environmental Services Water Quality & Solid Waste Manager
Luminant Mining Company LLC
Environmental Services Mining
6555 Sierra Drive
Irving, Texas 75039

PROTESTANTS/INTERESTED PERSONS:

Erin E. Fonken
Environmental Integrity Project
707 Rio Grande Street, Suite 200
Austin, Texas 78701

FOR THE EXECUTIVE DIRECTOR via electronic mail:

Ryan Vise, Director
Texas Commission on Environmental Quality
External Relations Division
Public Education Program MC 108
P.O. Box 13087
Austin, Texas 78711-3087

Todd Galiga, Senior Attorney
Texas Commission on Environmental Quality
Environmental Law Division MC 173
P.O. Box 13087
Austin, Texas 78711-3087

Melinda Luxemburg, P.E., Technical Staff
Texas Commission on Environmental Quality
Water Quality Division MC 148
P.O. Box 13087
Austin, Texas 78711-3087

FOR PUBLIC INTEREST COUNSEL via electronic mail:

Vic McWherter, Attorney
Texas Commission on Environmental Quality
Public Interest Counsel MC 103
P.O. Box 13087
Austin, Texas 78711-3087

FOR THE CHIEF CLERK via electronic mail:

Bridget C. Bohac, Chief Clerk
Texas Commission on Environmental Quality
Office of Chief Clerk MC 105
P.O. Box 13087
Austin, Texas 78711-3087

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

TPDES PERMIT NO. WQ0002697000
[For TCEQ office use only - EPA I.D. No. TX0068357]

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

This major amendment replaces TPDES Permit No. WQ0002697000, issued on February 16, 2011.

Luminant Mining Company LLC

whose mailing address is

Environmental Services - 6555 Sierra Drive, Irving, Texas 75039

is authorized to treat and discharge wastes from Monticello Lignite Mining Area (SIC 1221)

located north and south of Interstate Highway 30, between the City of Winfield and the City of Mount Pleasant, Titus and Franklin Counties, Texas 75456

via Outfalls 002M/R and 003M/R to unnamed tributaries, thence to Ripley Creek; via Outfalls 014M/R and 015M/R to unnamed tributaries, thence to Dorsey Creek, thence to Ripley Creek; via Outfall 001M/R to Dorsey Creek, thence to Ripley Creek; via Outfalls 017M/R and 018M/R to unnamed tributaries; thence to Piney Creek; via Outfalls 004M/R and 016M/R to Piney Creek; via Outfall 020M/R to East Piney Creek; thence all creeks to White Oak Creek; thence to Sulphur/South Sulphur River in Segment No. 0303 of the Sulphur River Basin; via Outfall 005M/R to an unnamed tributary, thence to Dragoo Creek, thence to Tankersley Creek (below Tankersley Lake); via Outfall 006M/R to a ditch, thence to a 22-acre pond, thence to Tankersley Creek (below Tankersley Lake); via Outfalls 019M/R and 021M/R to unnamed tributaries, thence to Hayes Creek (above New City Lake), thence to New City Lake, thence to Hayes Creek (below New City Lake), thence to Hart Creek; via Outfall 022M/R to an unnamed tributary, thence to Tankersley Creek (above Tankersley Lake), thence to Tankersley Lake, thence to Tankersley Creek (below Tankersley Lake); via Outfall 030M/R to Tankersley Creek (below Tankersley Lake); thence all creeks to Big Cypress Creek Below Lake Bob Sandlin in Segment No. 0404 of the Cypress Creek Basin; and via Outfalls 007M/R, 009M/R, 010M/R, and 024M/R to unnamed tributaries, thence to Smith Creek; via Outfalls 008M/R, 023M/R, and 026M/R to unnamed tributaries/ditches to Blundell Creek; via Outfall 029M/R to Blundell Creek; via Outfalls 012M/R and 025M/R to an unnamed tributary; via Outfalls 011M/R, 013M/R, 027M/R, and 028M/R and all creeks to Lake Bob Sandlin in Segment No. 0408 of the Cypress Creek Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, five years from the date of permitt issuance.

ISSUED DATE: May 13, 2019

For the Commission

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water) and stormwater from active mining areas (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week	Estimate
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Grab
Iron, Total (*2)	3.0	6.0	6.0	1/ Week (*4)	Grab
Selenium, Total (*2)	N/A	0.036	0.036	1/ 6 Months (*4)	Grab
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab

(*1) See Other Requirement Nos. 2 and 3.
(*2) See Other Requirement No. 4 for discharges due to precipitation events.
(*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).
(*4) When discharging. See Other Requirements No. 7.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*4), by grab sample (*2).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfalls 001M, 002M, 004M, 014M-018M, and 020M, where wastewater discharges from the active mining retention ponds associated with the applicable outfall (see Other Requirement No. 3), and prior to discharge to the Sulphur/South Sulphur watershed (Segment No. 0303).

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 003M

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water), previously monitored effluent (PME; treated domestic wastewater from Outfall 201), and stormwater from active mining areas (*1), subject to the following effluent limitations:

   Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Grab
Iron, Total (*2)	3.0	6.0	6.0	1/ Week (*4)	Grab
Selenium, Total (*2)	N/A	0.036	0.036	1/ 6 Months (*4)	Grab
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab

(*1) See Other Requirement Nos. 2 and 3.
(*2) See Other Requirement No. 4 for discharges due to precipitation events.
(*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).
(*4) When discharging. See Other Requirements No. 7.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*4), by grab sample (*2).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfalls 003M, where wastewater discharges from the active mining retention ponds associated with this outfall (see Other Requirement No. 3), and prior to discharge to the Sulphur/South Sulphur watershed (Segment No. 0303).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water) and stormwater from active mining areas (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Grab
Iron, Total (*2)	3.0	6.0	6.0	1/ Week (*4)	Grab
Selenium, Total (*2)	N/A	0.036	0.036	1/ 6 Months (*4)	Grab
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab

(*1) See Other Requirement Nos. 2 and 3.
(*2) See Other Requirement No. 4 for discharges due to precipitation events.
(*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).
(*4) When discharging. See Other Requirements No. 7.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*4), by grab sample (*2).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfalls 005M, 006M, 019M, 021M, 022M, and 030M, where wastewater discharges from the active mining retention ponds associated with the applicable outfall (see Other Requirement No. 3), and prior to discharge to Big Cypress Creek Below Lake Bob Sandlin watershed (Segment No. 0404).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water) and stormwater from active mining areas (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Grab
Iron, Total (*2)	3.5	7.0	7.0	1/ Week (*4)	Grab
Selenium, Total (*2)	N/A	Report	N/A	1/6 Months (*4)	Grab
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab

(*1) See Other Requirement Nos. 2 and 3.
(*2) See Other Requirement No. 4 for discharges due to precipitation events.
(*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).
(*4) When discharging. See Other Requirements No. 7.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*4), by grab sample (*2).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfalls 007M-009M, 013M, 023M-029M, where wastewater discharges from the active mining retention ponds associated with the applicable outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water) and stormwater from active mining areas (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*3)	Estimate
Total Suspended Solids (*2)	35	70	70	1/ Week (*3)	Grab
Iron, Total (*2)	3.5	7.0	7.0	1/ Week (*3)	Grab
Selenium, Total (*2)	N/A	Report	N/A	1/6 Months (*3)	Grab
Aluminum, Total (*2)	N/A	1.76	1.76	1/ Month (*3)	Grab

(*1) See Other Requirement Nos. 2 and 3.
(*2) See Other Requirement No. 4 for discharges due to precipitation events.
(*3) When discharging. See Other Requirements No. 7.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3), by grab sample (*2).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 010M, where wastewater discharges from the active mining retention ponds associated with this outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 011M

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water), previously monitored effluent (PME; treated domestic wastewater from Outfall 203), and stormwater from active mining areas (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Grab
Iron, Total (*2)	3.5	7.0	7.0	1/ Week (*4)	Grab
Selenium, Total (*2)	N/A	Report	N/A	1/6 Months (*4)	Grab
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab

(*1) See Other Requirement Nos. 2 and 3.
(*2) See Other Requirement No. 4 for discharges due to precipitation events.
(*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).
(*4) When discharging. See Other Requirements No. 7.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*4), by grab sample (*2).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 011M, where wastewater discharges from the active mining retention ponds associated with this outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 012M

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water), ash disposal area stormwater runoff, and stormwater from active mining areas (*1), subject to the following effluent limitations:

   Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate
Total Suspended Solids (*2)	30	70	70	1/ Week (*4)	Grab
Oil and Grease (*2)	15	20	20	1/ Week (*4)	Grab
Iron, Total (*2)	3.5	7.0	7.0	1/ Week (*4)	Grab
Selenium, Total (*2)	N/A	Report	N/A	1/6 Months (*4)	Grab
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab

(*1) See Other Requirement Nos. 2 and 3.
(*2) See Other Requirement No. 4 for discharges due to precipitation events.
(*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).
(*4) When discharging. See Other Requirements No. 7.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*4), by grab sample (*2).

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 012M, where wastewater discharges from the active mining retention ponds associated with this outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge stormwater from post-mining areas (*1), wastewater from retention ponds in post-mining areas (*1) and previously monitored effluents (PME; compliant active mining area effluent to the post-mining area retention ponds) (*2), subject to the following effluent limitations:

   Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
				Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate
Settleable Solids (milliliters/liter, ml/L)	N/A	0.5 (*3)	0.5 (*3)	1/ Week (*4)	Grab

(*1) See Other Requirement Nos. 2 and 3.
(*2) See Other Requirement No. 8.
(*3) See Other Requirement No. 4 for discharges due to precipitation events.
(*4) When discharging. See Other Requirements No. 7.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*4), by grab sample (*3).
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location(s):

   At Outfalls 001R-004R, 014R-018R, and 020R, where wastewater discharges from the post-mining retention ponds (See Other Requirement No. 3) and prior to discharge to the Sulphur/South Sulphur River watershed (Segment No. 0303).

   At Outfalls 005R, 006R, 019R, 021R, 022R, and 030R, where wastewater discharges from the post-mining retention ponds (See Other Requirement No. 3) and prior to discharge to Big Cypress Creek Below Lake Bob Sandlin watershed (Segment No. 0404).

   At Outfalls 007R-013R and 023R-029R, where wastewater discharges from the post-mining retention ponds (See Other Requirement No. 3) and prior to discharge to the Lake Bob Sandlin watershed (Segment No. 0408).

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 201

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated domestic wastewater, subject to the following effluent limitations:

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*1)	Estimate
Biochemical Oxygen Demand, 5-day (BOD_5)	20	45	45	1/ Week (*1)	Grab
Total Suspended Solids	20	45	45	1/ Week (*1)	Grab
E. Coli (*2)	N/A	Report (*3)	N/A	1/ Month (*1)	Grab
E. Coli (*2)	N/A	399 (*4)	399	1/ Month (*1)	Grab

(*1) When discharge occurs.
(*2) Most probable number or colony forming units per 100 ml (MPN or cfu/100 ml).
(*3) Beginning upon the date of permit issuance and lasting one year from the date of permit issuance.
(*4) Beginning one year from the date of permit issuance and lasting through the date of permit expiration.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*1), by grab sample.

3. The effluent shall contain a chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored 1/week (*1), by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location: At Outfall 201, at the outlet of the North Winfield sewage treatment plant and prior to mixing with any other waters discharged via Outfall 003M.

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated domestic wastewater, subject to the following effluent limitations:

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	1/ Week (*1)	Estimate
Biochemical Oxygen Demand, 5-day (BOD_5)	20	45	45	1/ Week (*1)	Grab
Total Suspended Solids	20	45	45	1/ Week (*1)	Grab
E. Coli (*2)	N/A	Report (*3)	N/A	1/ Month (*1)	Grab
E. Coli (*2)	N/A	399 (*4)	399	1/ Month (*1)	Grab

(*1) When discharge occurs.
(*2) Most probable number or colony forming units per 100 ml (MPN or cfu/100 ml).
(*3) Beginning upon the date of permit issuance and lasting one year from the date of permit issuance.
(*4) Beginning one year from the date of permit issuance and lasting through the date of permit expiration.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*1), by grab sample.

3. The effluent shall contain a chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored 1/week (*1), by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location: At Outfall 203, at the outlet of the South Winfield sewage treatment plant and prior to mixing with any other waters discharged via Outfall 011M.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

      ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

   b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

   c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

   d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (Fecal coliform, *E. coli*, or Enterococci) – the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD × Concentration, mg/L × 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(c).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TWC Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

   a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

   b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

   a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

   b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

   c. Records of monitoring activities shall include the following:

      i. date, time, and place of sample or measurement;
      ii. identity of individual who collected the sample or made the measurement;
      iii. date and time of analysis;
      iv. identity of the individual and laboratory who performed the analysis;
      v. the technique or method of analysis; and
      vi. the results of the analysis or measurement and quality assurance/quality control records.

   The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

   If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

   All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

   Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. unauthorized discharges as defined in Permit Condition 2(g).
      ii. any unanticipated bypass that exceeds any effluent limitation in the permit.
      iii. violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

   a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

      i. one hundred micrograms per liter (100 μg/L);
      ii. two hundred micrograms per liter (200 μg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      iii. five (5) times the maximum concentration value reported for that pollutant in the permit application; or
      iv. the level established by the TCEQ.

b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. five hundred micrograms per liter (500 μg/L);
   ii. one milligram per liter (1 mg/L) for antimony;
   iii. ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
   iv. the level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;

b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. for the purpose of this paragraph, adequate notice shall include information on:

   i. the quality and quantity of effluent introduced into the POTW; and
   ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

   i. violation of any terms or conditions of this permit;
   ii. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
   iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the

Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA §402, or any requirement imposed in a pretreatment program approved under the CWA §§402(a)(3) or 402(b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or

      ii. the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9; or

      iii. the alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

   The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

   a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

      i. the permittee;
      ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
      iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

   b. This notification must indicate:

      i. the name of the permittee;
      ii. the permit number(s);
      iii. the bankruptcy court in which the petition for bankruptcy was filed; and
      iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion or upgrading of the domestic wastewater treatment or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

i. volume of waste and date(s) generated from treatment process;
ii. volume of waste disposed of on-site or shipped off-site;
iii. date(s) of disposal;

iv. identity of hauler or transporter;
v. location of disposal site; and
vi. method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

TCEQ Revision 01/2016

OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 5 within 24 hours from the time the permittee becomes aware of the violation, followed by a written report within five working days to TCEQ Region 5 and the Enforcement Division (MC 224):

Pollutant	MAL (mg/L)
Aluminum (Total)	0.0025
Iron (Total)	0.007
Selenium (Total)	0.005
Settleable Solids	0.4 ml/L

Test methods used must be sensitive enough to demonstrate compliance with the permit effluent limitations. If an effluent limit for a pollutant is less than the minimum analytical level (MAL), then the test method for that pollutant must be sensitive enough to demonstrate compliance at the MAL. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit, with consideration given to the MAL for the pollutants specified above.

When an analysis of an effluent sample for a pollutant listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero (0) shall be used for that measurement when making calculations for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero (0) based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form:

> "The reported value(s) of zero (0) for ____[list pollutant(s)]____ on the self-reporting form for [monitoring period date range]____ is based on the following conditions: 1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and 2) the analytical results contained no detectable levels above the specified MAL."

When an analysis of an effluent sample for a pollutant indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that pollutant, the level of detection achieved shall be used for that measurement when making calculations for the self-reporting form. A zero (0) may not be used.

2. DEFINITIONS

   a. The term "active mining area" is defined as the area, on and beneath land, used or disturbed in activity related to the extraction, removal, or recovery of coal from its natural deposits. This term excludes coal preparation plants, coal preparation plant associated areas, and post-mining areas.

   b. The term "post-mining area" is defined as a reclamation area or the underground workings of an underground coal mine after the extraction, removal, or recovery of coal from its natural deposit has ceased and prior to bond release.

c. The term "reclamation area" is defined as the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced.

d. The term "bond release" is defined as the time at which the appropriate regulatory authority returns a reclamation or performance bond based upon its determination that reclamation work (including, in the case of an underground mine, mine sealing and abandonment procedures) has been satisfactorily completed in accordance with Phase II as defined by 16 Texas Administrative Code (TAC) §12.313(a)(2).

e. The term "10-year, 24-hour precipitation events" is defined as the maximum 24-hour precipitation event with a probable recurrence interval of once in ten years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed therefrom.

f. The term "settleable solids" is that matter measured by the volumetric method specified in 40 CFR §434.64 and as follows: Fill an Imhoff cone to the one-liter mark with a thoroughly mixed sample. Allow to settle undisturbed for 45 minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for 15 minutes longer. Record the volume of settled material in the cone as milliliters per liter. Where a separation of settleable and floating materials occurs, do not include the floating material in the reading. Notwithstanding any provision of 40 CFR Part 136, the method detection limit for measuring settleable solids under this part shall be 0.4 ml/L.

g. The term "mine drainage" means any drainage, and any water pumped or siphoned, from an active mining area or a post-mining area.

h. The term "alkaline mine drainage" means mine drainage which, before any treatment, has a pH equal to or greater than 6.0 and total iron concentration of less than 10 mg/L.

3. POND LOCATION INFORMATION

Latitude and longitude are established after construction. The permittee shall submit the updated latitude and longitude for each exact pond location to the TCEQ Industrial Permits Team (MC-148) and TCEQ Region 5 Office.

a. The permittee shall maintain a current map and supporting documentation, as necessary, at the site, which shows and lists all constructed ponds with the operational phase (active mining or post-mining), design dimensions, construction information, pond drainage area, pond location, discharge routes, sample locations, and outfall locations. The map shall be available to TCEQ personnel upon request.

b. In preparation of mining activities in a specific watershed area, the permittee shall construct the retention pond(s) necessary to retain water from the mining activity prior to disturbing the natural soils in the contributing watershed area.

c. The permittee may change the location of, and reconfigure ponds if necessary, to establish ponds in a series or to allow effluent to be commingled in a pipe or man-made conveyance as long as the final discharge point or outfall is authorized herein. No final outfalls other than those listed in the below Mining Pond Information table that are associated with the active mining areas and post-mining areas are authorized by this permit.

The following table shows the mine area, operational phase, related outfalls, receiving waters and tributaries:

Mining Pond Information

Outfall	Pond	Receiving Stream / Segment No.	Latitude	Longitude	Active (M)	Post (R)	Fu-ture
001	A-2	Dorsey Creek / 0303	33° 11' 25"	95° 04' 59"	✓		
002	A-3	Ripley Creek / 0303	33° 11' 03"	95° 05' 57"	✓		
003	A-15	Ripley Creek / 0303	33° 11' 11"	95° 05' 47"	✓		
004	J-2	Piney Creek / 0303	33° 13' 31"	95° 01' 08"	✓		
005	G-13	Dragoo Creek / 0404	33° 09' 20"	95° 01' 43"	✓		
006	GR-15	Dragoo Creek / 0404	33° 09' 24"	95° 03' 05"	✓		
007	AR-35	Smith Creek / 0408	33° 10' 17"	95° 05' 49"	✓		
008	F-2	Blundell Creek / 0408	33° 07' 51"	95° 05' 55"	✓		
009	F2R3	Smith Creek / 0408	33° 08' 30"	95° 04' 48"	✓		
010	F-10	Smith Creek / 0408	33° 07' 57"	95° 04' 44"	✓		
011	F-12	Blundell Creek / 0408	33° 07' 30"	95° 05' 19"	✓		
012	G-7	Trib. of Cypress Cr./0408	33° 06' 54"	95° 03' 08"	✓		
013	SSC-1	Smith Creek / 0408	33° 06' 31.4"	95° 04' 26.6"	✓		
014	A-19	Dorsey Creek / 0303	33° 11' 35"	95° 04' 44"		✓	
015	B-2	Dorsey Creek / 0303	33° 12' 03"	95° 04' 22"		✓	
016	L-1	Piney Creek / 0303	33° 14' 03"	95° 01' 04"		✓	
017	L-2	Piney Creek / 0303	33° 14' 20"	95° 00' 37"		✓	
018	L-4	Piney Creek / 0303	33° 14' 46"	95° 00' 10"		✓	
019	L-9	Trib. of Hayes Cr./0404	33° 13' 19"	95° 59' 29"		✓	
020	M-1	East Piney Creek / 0303	33° 14' 42"	95° 58' 02"		✓	
021	J-1	Hayes Creek /0404	33° 12' 24"	95° 00' 25"		✓	
022	J-10	Tankersley Creek / 0404	33° 12' 24"	95° 02' 34"		✓	
023	F-11	Blundell Creek / 0408	33° 08' 06"	95° 06' 20"		✓	
024	G-1	Smith Creek /0408	33° 08' 36"	95° 04' 49"		✓	
025	G-11	Trib. of Cypress Cr./0408	33° 06' 59"	95° 02' 24"		✓	
026	H-1	Blundell Creek / 0408	33° 08' 01"	95° 06' 39"			✓
027	H-3	Lake Monticello / 0408	33° 07' 06"	95° 05' 48"		✓	
028	H-4	Blundell Creek / 0408	33° 07' 50"	95° 06' 19"			✓
029	H-5	Blundell Creek / 0408	33° 08' 21"	95° 07' 18"			✓
030	G-14	Tankersley Creek / 0404	33° 08' 15"	95° 01' 43"			✓
201	WN Sanitary	Ripley Creek / 0303	33° 11' 19"	95° 05' 25"			
203	WS Sanitary	Blundell Creek / 0408	33° 07' 53"	95° 05' 34"			

d. Discharges from the above outfalls shall be monitored in accordance with permit requirements from the time the natural soils are disturbed due to mining activity until reclamation of the disturbed soils has been completed and the Phase Two performance bond issued by the appropriate authority has been released.

e. Written notification is required as follows:

   i. within 45 days of any revision of the pond map, including changing to, or from, the active mining or post-mining operational phase and to, or from, the active or inactive status (see subsection f. below);

   ii. upon initiation of any mining-related activity in the watershed of any pond; or

   iii. At least 10 days prior to closing a retention pond or discontinuing monitoring of discharges.

   All written notifications are required to be submitted to the TCEQ Industrial Permits Team (MC 148), TCEQ Enforcement Division (MC 224), and TCEQ Region 5 Office.

f. Reporting requirements pursuant to 30 TAC Sections 319.1-319.12 and any additional effluent reporting requirements contained in this permit (as designated in the "Future" column in the above Mining Pond Information table) are suspended from the effective date of the permit until mine operation startup or discharge from the facility described by this permit, whichever occurs first. The permittee shall provide written notice to the TCEQ Region 5 Office and the Applications Review and Processing Team (MC-148) of the Water Quality Division at least forty-five (45) days prior to mine (pond) operation startup (activation) or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007.

g. All outfalls that are discharging wastewaters from ponds in the active mining area will be followed by a letter M for mining phase. All outfalls that are discharging wastewaters from ponds in the post-mining areas will be followed by a letter R for reclamation phase.

4. Additional Monitoring and Reporting Requirements for Retention Ponds Regulated by 40 CFR Part 434.

   a. <u>Sampling Requirements</u>

   Analysis shall be conducted for effluent discharged from each retention pond constructed and operated under this permit, except for:

   i. effluent discharge from retention ponds in a series, which must be sampled at a point from the last pond in the series; and

   ii. effluent discharges from multiple retention ponds commingled in a pipe or a man-made conveyance structure before discharging into waters in the state, which must be sampled at a point prior to mixing with other waters.

   b. <u>Alternate effluent limitation for pH</u>: N/A

   c. <u>Effluent Limitations for Precipitation Events for Acid or Ferruginous Active Mining Areas</u>: N/A

   N/A

d. Effluent Limitations for Precipitation Events for Alkaline Active Mining Areas:

i. Effluent discharges from an active mining area caused by precipitation within any 24-hour period **less than or equal to the 10-year, 24-hour precipitation event**, must not exceed the following limitations:

Pollutant	Effluent Limitations
Settleable Solids	0.5 ml/L maximum not to be exceeded
pH, standard units (SU)	6.0 minimum - 9.0 maximum at all times

ii. Effluent discharges from an active mining area caused by precipitation within any 24-hour period **greater than the 10-year, 24-hour precipitation event**, must not exceed the following limitations:

Pollutant	Effluent Limitations
pH, standard units (SU)	6.0 minimum - 9.0 maximum at all times

e. Effluent Limitations for Precipitation Events for Post-Mining Areas:

i. Effluent discharges from Post-Mining Areas within any 24-hour period **greater than the 10-year, 24-hour precipitation event**, must not exceed the following limitations:

Pollutant	Effluent Limitations
pH, standard units (SU)	6.0 minimum - 9.0 maximum at all times

f. The permittee bears the burden of proof in establishing the volume of a precipitation event. On or before the end of January, April, July, and October; the permittee shall submit reports containing the information required for alternate effluent limits and precipitations events for the prior calendar quarter to the TCEQ Enforcement Division (MC-224) and the Region 5 Office.

5. This provision applies to the treatment and disposal of domestic wastewater at internal Outfalls 201 and 203.

On-site disposal of sewage sludge is not authorized. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335 of this title) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312 of this title. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335 of this title) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 335 of this title. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

a. volume (dry weight basis) of sludge disposed;

b. date of disposal;

c. identity and registration number of hauler;

d. location and registration or permit number of disposal site; and

e. method of final disposal.

The above records must be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

6. This provision supersedes and replaces (Provision 1) MONITORING AND REPORTING REQUIREMENTS, (Paragraph 1) 1. Self-Reporting, as defined on Page 4 of this permit.

   Monitoring results must be provided at intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 25th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10

7. Monitoring results must be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports must be submitted in September of each year. For pollutants which are monitored twice per year (i.e. 1/ 6 months), the six-month periods are defined as January through June and July through December. The first effluent report must be submitted the first July or January following issuance of the permit with subsequent reports every six months thereafter. For pollutants which are monitored four times per year, the first effluent report must be submitted three months after the date of permit issuance and subsequent reports every three months thereafter.

8. <u>PREVIOUSLY MONITORED EFFLUENTS</u>

   The permittee may discharge "active mining area" effluent to "post-mining area" retention ponds, provided that the discharge meets the following requirements:

   a. "active mining area" effluent must meet the limitations specified on Pages 2, 2a, 2b, 2c, 2d, 2e, and 2f of this permit prior to being discharge to the "post-mining area" retention ponds;

   b. dikes and berms must be in place to prevent storm water draining from the "active mining area" to the "post-mining area" retention ponds; and

   c. the drainage area of the post-mining retention pond must be a reclamation area as defined in 40 CFR Part 434 - Coal Mining Point Source Category.

9. All discharges from Outfalls 001M-030M and 001R-030R must comply with the limitations for hazardous metals as regulated under Title 30, Texas Administrative Code (TAC) Chapter 319, Subchapter B "Hazardous Metals."

10. The following mixing zone definition applies to Outfalls 001M-030M: There is no mixing zone established for discharges to an intermittent stream. Acute toxic criteria apply at the point of discharge.

11. Analytical testing to establish effluent quality required on subsequent permit application forms is not required for each outfall and associated pond identified in this permit. The permittee may submit analytical testing for a subset of outfalls and associated ponds based on its determination that discharges are substantially identical as provided by 40 CFR § 122.21(g)(7). If discharges through two or more outfalls are substantially identical, then sampling and monitoring may be conducted at a subset of outfalls, and the results may be reported as representative of the substantially identical outfalls in accordance with 40 CFR § 122.21(g)(7).

12. DUST SUPPRESSION

The permittee is authorized to utilize effluent from "active mining area" and "post-mining area" sedimentation ponds for dust suppression. With respect to utilization of effluent for dust suppression, the permittee shall comply with the following requirements.

a. Dust suppression practices must be designed and managed so as to prevent runoff, ponding of effluent, or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area.

b. Application of effluent for dust suppression must be accomplished only when the area specified is in use.

c. Dust suppression with effluent shall not occur during times when the ground has standing water, the ground is saturated.

d. Spray fixtures for the dust suppression systems must be of such design that they cannot be operated by unauthorized personnel.

13. The permittee shall submit, receive approval for, and proceed with a "Work Plan for an Evaluation of Aluminum in Stormwater Discharges." The purpose of this work plan is to outline an approach for collecting samples of stormwater alone to demonstrate that aluminum levels in stormwater are directly responsible for aluminum levels in discharges at the Monticello Lignite Mining Area.

The permittee shall submit, receive approval for, and proceed with a "Work Plan for an Aluminum Partitioning Study." The purpose of this work plan is to outline an approach for determining the site-specific ratio of dissolved aluminum to total aluminum for Outfalls 001M-010M and 011M-030M discharges. The permittee may use a representative Outfall for each segment. This study will also demonstrate that any proposed aluminum effluent limits will not cause "instream" effects in the receiving waters by determining the No Observed Effects Concentration (NOEC).

The results of the work plans must be submitted to the Water Quality Standards Team (MC-150) of the TCEQ Water Quality Division. Once the results of the work plans are completed by the permittee, a permitting action is required to evaluate the appropriateness of a site-specific partition coefficient for aluminum and any required effluent limitations or reporting requirements.

14. The permittee shall apply for and receive authorization to add additional outfalls and associated ponds which are not identified in this permit prior to their construction and use. The permittee may file an application for a permit renewal with changes to identify additional outfalls and associated ponds prior to the expiration of this permit if:

a. the approximate location of each outfall is delineated by latitude and longitude in the application for renewal with changes and public notice of the application by newspaper publication is provided in accordance with commission rules;

b. the permitted boundary is not expanded;

c. any adjacent property located within ½ mile of an additional outfall or associated pond, or downstream property located adjacent to the discharge route associated with an additional outfall and within one mile downstream of the outfall, is not newly adjacent or downstream solely because of the addition of an outfall or associated pond identified in the application for renewal with changes;

d. no new wastestream is added to the discharge; and,

e. no new receiving waters extend beyond the permitted boundary.

Each subsequent permit action to add additional outfalls and associated ponds which are not identified in this permit shall be treated as a renewal with changes and not an amendment if the permittee complies with the requirements in subsections a. through e. above.

15. Wastewater discharged via Outfalls 005M and 013M-030M must be sampled and analyzed as directed below for those parameters listed in Tables 1, 2, and 3 of Attachment A of this permit. Analytical testing for Outfalls 005M and 013M-030M must be completed within 60 days of initial discharge. Results of the analytical testing must be submitted within 90 days of completion of the four discharges for each outfall to the TCEQ Industrial Permits Team (MC-148). Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations, monitoring requirements, or both.

Table 1: Analysis is required for all pollutants in Table 1. Wastewater must be sampled and analyzed for those parameters listed in Table 1 for a minimum of one sampling event. Any additional sampling events must be at least one week apart.

Table 2: Analysis is required for those pollutants in Table 2 that are used at the facility that could in any way contribute to contamination in the discharges from 005M/R and 013M/R-030M/R. Sampling and analysis must be conducted for a minimum of one sampling event. Any additional sampling events must be at least one week apart.

Table 3: For all pollutants listed in Table 3, the permittee shall indicate whether each pollutant is believed to be present or absent in the discharge. Sampling and analysis must be conducted for each pollutant believed present for a minimum of one sampling event. Any additional sampling events must be at least one week apart.

The permittee shall report the flow at Outfalls 005M/R and 013M/R-030M/R in MGD in the attachment. The permittee shall indicate on each table whether the samples are composite (C) or grab (G) by checking the appropriate box.

16. The following Retest Table 1 must be completed for Outfalls 007M-012M with the applicable analytical results and sent to the TCEQ Wastewater Permitting Section (MC 148) no later than 60 days from receipt of all the analytical results for the applicable outfall from the laboratory. The following Retest Table 2 must be completed for Outfall 007M with the applicable analytical results and sent to the TCEQ Wastewater Permitting Section (MC 148) no later than 60 days from receipt of all the analytical results for the applicable outfall from the laboratory.

The required samples must be collected as soon as practical following permit issuance or discharge. Wastewater must be sampled and analyzed for those parameters listed in the below Retest Tables 1 and 2 for a minimum of four (4) separate sampling events which are a minimum of one (1) week apart.

Test methods utilized to determine compliance with the permit monitoring or reporting requirements and limitations must be according to EPA methodology and sensitive enough to detect the listed parameters at the minimum analytical level (MAL). Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations or monitoring requirements.

RETEST TABLE 1

(Outfalls 007M-012M)

Outfall No:	□C □G	Effluent Concentration (μg/L)					
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	MAL (μg/L)
Copper, total							2.0

RETEST TABLE 2

(Outfall 007M)

Outfall No:	□C □G	Effluent Concentration (μg/L)					
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	MAL (μg/L)
Chromium, Hexavalent							3.0

The permittee shall indicate on each table whether the samples are composite (C) or grab (G) by checking the appropriate box.

ATTACHMENT A

Table 1

Outfall No.:	☐C ☐G*	**Effluent Concentration (mg/L)**					
Pollutants		**Samp. 1**	**Samp. 2**	**Samp. 3**	**Samp. 4**	**Average**	
BOD (5-day)							
CBOD (5-day)							
Chemical Oxygen Demand							
Total Organic Carbon							
Dissolved Oxygen							
Ammonia Nitrogen							
Total Suspended Solids							
Nitrate Nitrogen							
Total Organic Nitrogen							
Total Phosphorus							
Oil and Grease							
Total Residual Chlorine							
Total Dissolved Solids							
Sulfate							
Chloride							
Fluoride							
Total Alkalinity (mg/L as $CaCO_3$)							
Temperature (°F)							
pH (Standard Units; min/max)							

Pollutants	**Effluent Concentration (μg/L)**					**MAL ** (μg/ L)**
Aluminum, total						2.5
Antimony, total						5
Arsenic, total						0.5
Barium, total						3
Beryllium, total						0.5
Cadmium, total						1
Chromium, total						3
Chromium, hexavalent						3
Chromium, trivalent						N/A
Copper, total						2
Cyanide, available						10
Lead, total						0.5
Mercury, total						0.005
Nickel, total						2
Selenium, total						5
Silver, total						0.5
Thallium, total						0.5
Zinc, total						5

* Composite (C) Grab (G)
** Minimum Analytical Level

Table 2

Outfall No.:	☐C ☐G*	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Pollutants					
Acrylonitrile					50
Anthracene					10
Benzene					10
Benzidine					50
Benzo(*a*)anthracene					5
Benzo(*a*)pyrene					5
Bis(2-chloroethyl)ether					10
Bis(2-ethylhexyl)phthalate					10
Bromodichloromethane [Dibromochloro-methane]					10
Bromoform					10
Carbon Tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane					10
Chloroform					10
Chrysene					5
m- Cresol [3-Methylphenol]					10
o- Cresol [2-Methylphenol]					10
p- Cresol [4-Methylphenol]					10
1,2-Dibromoethane					10
m-Dichlorobenzene [1,3-Dichlorobenzene]					10
o-Dichlorobenzene [1,2-Dichlorobenzene]					10
p-Dichlorobenzene [1,4-Dichlorobenzene]					10
3,3'-Dichlorobenzidine					5
1,2-Dichloroethane					10
1,1-Dichloroethene [1,1-Dichloroethylene]					10
Dichloromethane [Methylene chloride}					20
1,2-Dichloropropane					10
1,3-Dichloropropene [1,3-Dichloropropyl-ene]					10
2,4-Dimethylphenol					10
Di-*n*-Butyl Phthalate					10
Ethylbenzene					10
Fluoride					500
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Methyl Ethyl Ketone					50
Nitrobenzene					10
N-Nitrosodiethylamine					20
N-Nitroso-di-*n*-Butylamine					20
Nonylphenol					333
Pentachlorobenzene					20
Pentachlorophenol					5
Phenanthrene					10
Polychlorinated Biphenyls (PCBs) (**)					0.2
Pyridine					20
1,2,4,5-Tetrachlorobenzene					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethene [Tetrachloroethylene]					10
Toluene					10
1,1,1-Trichloroethane					10

1,1,2-Trichloroethane					10
Trichloroethene [Trichloroethylene]					10
2,4,5-Trichlorophenol					50
TTHM (Total Trihalomethanes)					10
Vinyl Chloride					10

Table 3

Outfall No.: ☐C ☐G* **Pollutants**	**Believed Present**	**Believed Absent**	**Average Concentration (mg/L)**	**Maximum Concentration (mg/L)**	**No. of Samples**	**MAL (µg/L)***
Bromide						400
Color (PCU)						—
Nitrate-Nitrite (as N)						—
Sulfide (as S)						—
Sulfite (as SO_3)						—
Surfactants						—
Boron, total						20
Cobalt, total						0.3
Iron, total						7
Magnesium, total						20
Manganese, total						0.5
Molybdenum, total						1
Tin, total						5
Titanium, total						30

* Indicate units if different from µg/L.

** Total PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016.

Water Conservation Plan

I. Introduction

A. Purpose

Regulations promulgated by the Texas Water Development Board (TWDB) require a water conservation plan (WCP) to be submitted when requesting financial assistance.

The objective of a WCP is to conserve water supplies and to reduce the quantity of water and wastewater that facilities must handle. This is accomplished by implementing permanent water use efficiency or reuse practices which are specified in the WCP.

B. Goals

The goal of this conservation plan is to achieve a reduction in the municipal per capita consumption of water. When water use is reduced, wastewater flows also experience a reduction. The goal of this conservation plan is to achieve a municipal per capita usage system-wide of 140 gallons per day or less or at least 10 percent reduction in municipal per capita usage from the preceding year if the goal of 140 gallons cannot be achieved.

The 5-year goal of this conservation plan is for the system wide average of all customers to be a municipal per capita usage of less than 140 gallons per day.

The 10-year goal of this conservation plan is for all the member cities to achieve a municipal per capita usage of less than 140 gallons per day.

The municipal per capita per day usage system-wide for the member cities, and other wholesale customers, for the most recent year that statistics are available is 138 gallons. Some communities supplied by Northeast Texas Municipal Water District (NETMWD) are already achieving a municipal per capita usage below 140 gallons per day and some communities are not. More than half of the member cities of NETMWD achieved a municipal per capita usage below 140 gallons per day in 2018. The combined municipal per capita usage for all member cities in NETMWD for 2018 is 155 gallons per day. None of the member cities had a reported usage above 175 gallons per capita in 2018.

The 5-year goals of the water loss programs related to this conservation plan are: to conduct annual water loss studies, and achieve a 15% or less unaccounted for water loss.

The 10-year goals of the water loss programs related to this conservation plan are: to conduct annual water loss studies, and achieve a 15% or less unaccounted for water loss.

The 2018 data shows an 3% unaccounted for water value, or approximately 37 million gallons.

C. Planning Area

NETMWD owns and operates a water treatment plant in Marion County, Texas, located near the intersection of Highway 155 and 729. This plant is referred to as the Tanner Plant. The Tanner Plant is presently designed for a capacity of 8.0 million gallons per day. NETMWD operates a water treatment plant in Camp County, Texas, near Pittsburg on the west side of Highway 1520. This plant is referred to as the Pittsburg Plant. The Pittsburg Plant is presently designed for a treatment capacity of 1.2 million gallons per day. Therefore, NETMWD presently has a total design capacity of 9.2 million gallons per day. NETMWD has contracts to serve potable water to the following cities: Jefferson, Avinger, Daingerfield, Lone Star, Hughes Springs, Ore City and Pittsburg. In addition to cities, NETMWD is willing to provide and does provide water on a wholesale basis to entities outside municipal limits. NETMWD is specifically authorized to acquire land and easements within the following counties: Marion, Cass, Morris, Harrison, Upshur, Camp, and Titus. NETMWD has seven member cities. Those cities are: Avinger, Daingerfield, Hughes Springs, Jefferson, Lone Star, Ore City, and Pittsburg.

NETMWD is a political subdivision of the State of Texas created as a conservation district under Article XVI, Section 59 of the Constitution pursuant to Senate Bill 130, 53rd Legislature of the State of Texas, Regular Session, 1953, as amended. NETMWD has specific authority to provide a source of water supply for cities and other users for municipal, domestic and industrial purposes.

The service area of NETMWD can be generally described as the area known as the Cypress Creek Basin. The total drainage area of the Cypress Creek Basin in Texas is 2,812 square miles. NETMWD is the largest wholesale provider of potable water in the Cypress Creek Basin. NETMWD is the largest water rights holder in the Cypress Creek Basin.

Through contractual agreements, NETMWD provides potable water to customers. These cities then provide the potable water on a retail basis to users of the water. Because of this contractual arrangement, NETMWD does not have a contractual relationship with the end-line users. Therefore, NETMWD does not have the usual effective ability to implement and enforce specific water conservation measures. Instead, NETMWD and its member cities are working closely to assure that elements of this plan are adopted, implemented, and enforced. The plans presented here are developed in their basic form and as an overall plan for NETMWD member cities and customers. In this way, TWDB minimum requirements are met. Some of the member cities already have conservation plans in place. For those that do not, this plan can establish minimum water conservation measures for them.

II. Water Conservation Plan

A. Introduction

There are multiple principal water conservation elements listed below to be considered in preparing a water conservation plan.

(1) Public Education and Information

(2) Conservation of oriented water rate structure

(3) Universal metering and meter repair

(4) Leak detection and repair programs

(5) Implementation and enforcement

(6) Periodic Review and Annual Reporting

(7) Contract Requirements for Successive Customer Conservation

(8) Pressure control in distribution system

(9) Recycling and reuse

(10) Reservoir Systems Operation Plans

(11) Additional Conservation Strategies

(12) Coordination with Regional Water Planning Groups

B. Goal

The goal of a water conservation plan is to reduce the per capita consumption of water. Many communities throughout the United States have used conservation measures to successfully deal with various water and wastewater problems. While some areas have achieved as much as 25 percent reductions, the normal range is from 5 to 15 percent. When water use is reduced, wastewater flows also experience a reduction.

C. Plan Elements

(1) Public Education and Information

NETMWD recognizes that water conservation significantly benefits individuals and communities in terms of long-term availability and costs. The most readily available and lowest cost method of promoting water conservation is to inform the retail water users about ways to save water in homes and businesses, in landscaping and lawn uses, and in recreational use. NETMWD will make available literature on conservation to the Customer cities. Customer cities will make available literature on conservation to their respective retail customers in the following manner:

1. Initial Year program
   (a) The public education program during the initial year shall include all the activities outlined in the Long-Term Program,

   (b) The Water Conservation Plan shall be distributed to all NETMWD customers upon adoption of the Plan,

   (c) Publication of information on provider's website.

2. Long-Term Program

   (a) Availability of educational materials from the Texas Commission on Environmental Quality, American Water Works Association, Texas Water Development Board, and others will be made available to any of our customers upon request. Water conservation information will be posted on provider's website.

3. Annual Educational Activity

   (a) NETMWD will sponsor an annual meeting with our wholesale customer's city councils and or board of directors to inform and update on our systems water loss efforts and effectiveness.

In addition to the above Educational and Information program to carried out by NETMWD and Customer cities, NETMWD and customer cities will be available to present water conservation programs to local schools, civic organizations, and other groups.

<u>(2) Water Conservation Rate Structure</u>

NETMWD sets a rate to member cities that does not promote excessive use of water. Each customer city sets its own water rates. Each customer city has either a uniform or a progressive water rate structure that does not encourage water waste or excessive use of water by retail customers.

(3) Universal Metering and Meter Repair

Each of NETMWD's customer cities manages and maintains its own water system metering. Nearly all water is metered. There are some unmetered water uses including: Fire Department testing of hydrants, main flushing, and contractor connections for construction. NETMWD may assist in properly estimating this usage. All water provided to customers of NETMWD by NETMWD is and will be provided through master meters. These meters will be regularly checked for accuracy. These meters will be used to assess the per capita consumption of each of the customers of NETMWD.

Each city should have as a minimum a water accounting program that is implemented by staff observance of meter readings and billings. Comparisons are made and if water consumption, or monthly billing, changes dramatically, the meter becomes suspect and is tested and repaired or replaced as necessary.

(4) Leak Detection and Repair Program

Master metering of the wholesale customers as well as metering all retail users can provide an accurate accounting of water uses. Metering and meter repair and replacement, coupled with an annual water audit, may be used in conjunction with other programs such as leak detection and repair to save significant quantities of water. The Customer cities should meter all retail water uses and will be encouraged to provide a master meter as well as metering of all utility, city and other public facilities.

The Customer cities will continue their ongoing leak detection, location and repair programs. Waterline leaks are detected by utility personnel while reading meters, maintaining their water and wastewater systems, and while performing other routine surveillance programs. Additionally, water audits may be utilized to determine if leaks exist which have gone undetected.

When a source of unaccounted-for water loss is located, corrective repairs or other actions are taken. NETMWD may provide assistance to the member cities in leak detection and control of unaccounted for water.

(5) Implementation and Enforcement

NETMWD does not have ordinance powers or jurisdiction for enforcement within the service areas of the Customer cities. As a regional entity, NETMWD's role can include the administration and promotion of the Plan, public education and information, and annual reporting.

The Customer cities agree to develop city programs consistent with goals and objectives of this plan. The Customer cities shall be responsible for the implementation and enforcement of specific water conserving activities contained within this plan for their respective jurisdictions.

The Customer cities will be responsible for reporting such activities to NETMWD along with an evaluation of the effectiveness of the program.

NETMWD appoints its Operations Manager as Administrator of this Water Conservation Plan and each Customer city will also designate a representative to work with the NETMWD's designated administrator. In the absence of the Operations Manager, the General Manager will act as Administrator of this Water Conservation Plan. The successor to fill any vacancy for Administrator of this Water Conservation Plan for NETMWD shall be determined by the Board of Directors of NETMWD. The successor to fill any vacancy for Administrator of this Water Conservation Plan for each Customer city shall be determined by the appropriate governing body of that customer.

The Administrator will oversee the execution and implementation of all elements of the plan. City representatives will oversee the implementation in their respective city.

Customer cities and NETMWD will execute any inter-local agreement necessary for providing that each city will implement and enforce the minimum water conservation plans required by law and contained within this document.

The cities may also adopt appropriate resolutions and ordinances adopting these Water Conservation Plans.

(6) Periodic Review and Annual Reporting

In addition to an annual review of the water conservation program, NETMWD will be alert to the extent of its legal authority throughout the year to any changes in the water supply and distribution system; or to the population served, which could affect the goals and objectives of the program. Periodic reviews will be made to determine if changes might require an amendment or major change in the plan.

(7) Contract Requirements for Successive Customer Conservation

The Northeast Texas Municipal Water District will include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of Chapter 288, of the Texas Administrative Code, Title 30, Part 1.

(8) Pressure Control in Distribution System

Each Customer city is responsible for its respective water distribution water system.

The long-range goal of each city is to provide its service area and citizens with adequate water pressure. In conjunction with this objective, and in an effort to promote water conservation, an additional goal may be to incorporate pressure-reducing valves in the system wherever possible to limit the maximum high-water pressure.

(9) Recycling and Reuse

Presently, there are no reasonable areas where water could be effectively reused. NETMWD will monitor for this possibility as conditions may change.

(10) Reservoir Systems Operations Plan

The reservoir which the NETMWD uses for the majority of its water supply is operated by the U S Army Corps of Engineers. They maintain Lake O' the Pines and its reservoir systems operations plan. The other reservoir is Lake Bob Sandlin and is operated and maintained by Titus County Fresh Water Supply District #1.

(11) Additional Conservation Strategies

The NETMWD offers a Fire Hydrant reimbursement program each year to its member cities. It allows member cities to replace or add fire hydrants and/or isolation valves to assist in reducing water loss.

(12) Coordination with the Regional Water Planning Groups

The service area of the NETMWD is located with the Region D and NETMWD will provide a copy of this revised water conservation plan to Region D.

III. Emergency Water Demand Management Plan

The NETMWD has adopted a Drought Contingency Plan. This Plan describes the Emergency Water Demand Management Plan for NETMWD. The Plan is attached to this Plan as Attachment A and incorporated here by reference for all purposes.

RESOLUTION 2019 – 03

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE NORTHEAST TEXAS MUNICIPAL WATER DISTRICT ADOPTING AN UPDATED WATER CONSERVATION PLAN

WHEREAS, the Board of Directors recognizes that the amount of water available to the Northeast Texas Municipal Water District and its water utility customers is limited and subject to depletion during periods of extended drought;

WHEREAS, the Board of Directors recognizes that natural limitations due to drought conditions and other acts of God cannot guarantee an uninterrupted water supply for all purposes;

WHEREAS, Section 11.1271 of the Texas Water Code and applicable rules of the Texas Commission on Environmental Quality require all public water supply systems in Texas to prepare a water conservation plan; and

WHEREAS, as authorized under law, and in the best interests of the customers of the Northeast Texas Municipal Water District, the Board of Directors deems it expedient and necessary to establish certain rules and policies for the orderly and efficient management of limited water supplies during drought and other water supply emergencies;

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE NORTHEAST TEXAS MUNICIPAL WATER DISTRICT:

SECTION 1. That the Water Conservation Plan attached hereto as Exhibit "A" and made part hereof for all purposes be, and the same is hereby, adopted as the official policy of the Northeast Texas Municipal Water District.

SECTION 2. That the Operations Manager is hereby directed to administer the Water Conservation Plan.

SECTION 3. That this resolution shall take effect immediately upon its passage.

DULY PASSED AND APPROVED BY THE NORTHEAST TEXAS MUNICIPAL WATER DISTRICT ON THE 26th day of August, 2019.

APPROVED:

Saundra L. Wexler
President

ATTEST:

W. J. Salmon, Jr
Secretary

DROUGHT CONTINGENCY PLAN FOR THE NORTHEAST TEXAS MUNICIPAL WATER DISTRICT
Effective July 22, 2019

Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water emergency conditions, the Northeast Texas Municipal Water District adopts the following Drought Contingency Plan (the Plan).

Section II: Public Involvement

Opportunity for the public and wholesale water customer to provide input into the preparation of the Plan was provided by they Northeast Texas Municipal Water District by means of holding a public meeting to accept input on the Plan and by direct communication with members of the public and customers.

Section III: Wholesale Water Customer Education

The Northeast Texas Municipal Water District will periodically provide wholesale water customers with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of providing each customer with a copy of the Plan and by direct communication.

Section IV: Coordination with Regional Water Planning Groups

The Northeast Texas Municipal Water District will periodically provide wholesale water customers with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of providing each customer with a copy of the Plan and by direct communication.

Section V: Authorization

The General Manager or his designee is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The General Manager, or his designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

Section VI: Application

The provisions of this Plan shall apply to all customers utilizing water provided by the Northeast Texas Municipal Water District. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

Section VII: Triggering Criteria for Initiation and Termination of Drought Response Stages

The General Manager, or his designee, shall monitor water supply and/or demand conditions on a weekly basis and shall determine when conditions warrant initiation or termination of each stage of the Plan. Customer notification of the initiation or termination of drought response stages will be made by mail, telephone, or in person. The news media will also be informed.

The triggering criteria described below are based on pumping capacities and volume of surface supply.

(a) Stage 1 – Mild Water Shortage Conditions

Requirements for initiation – The Northeast Texas Municipal Water District will recognize that a mild water shortage condition exists when for a period of 48 consecutive hours 85% of pumping capacity is utilized or when the volume of surface supply is less than 50% of capacity.

Requirements for termination – Stage 1 of the Plan may be rescinded when all the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. The Northeast Texas Municipal Water District will notify its wholesale customers and the media of the termination of Stage 1 in the same manner as the notification of initiation of Stage 1 of the Plan.

(b) Stage 2 – Moderate Water Shortage Conditions

Requirements for initiation – The Northeast Texas Municipal Water District will recognize that a moderate water shortage condition exists when for a period of 48 consecutive hours 90% of pumping capacity is utilized or when the volume of surface supply is less than 40% of capacity.

Requirements for termination – Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. Upon termination of Stage 2, Stage 1 becomes operative. The Northeast Texas Municipal Water District will notify its wholesale customers and the media of the termination of Stage 2 in the same manner as the notification of initiation of Stage 1 of the Plan.

(c) Stage 3 – Severe Water Shortage Conditions

Requirements for initiation – The Northeast Texas Municipal Water District will recognize that a severe water shortage condition exists when for a period of 48 consecutive hours 95% of pumping capacity is utilized or when the volume of surface supply is less than 25% of capacity.

Requirements for termination – Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. Upon termination of Stage 3, Stage 2 becomes operative. The Northeast Texas Municipal Water District will notify its wholesale customers and the media of the termination of Stage 3 in the same manner as the notification of initiation of Stage 2 of the Plan.

(d) Stage 4 – Emergency Water Shortage Conditions

Requirements for initiation – The Northeast Texas Municipal Water District will recognize that a emergency water shortage condition exists when major water line breaks, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; or when there is natural or man-made contamination of the water supply sources(s).

Requirements for termination – Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. The Northeast Texas Municipal Water District will notify its wholesale customers and the media of the termination of Stage 3 in the same manner as the notification of initiation of Stage 4 of the Plan.

Section VIII: Drought Response Stages

The General Manager, or his designee, shall monitor water supply and/or demand conditions and, in accordance with the triggering criteria set forth in Section VII, shall determine that mild, moderate, or severe shortage conditions exist or that an emergency condition exists and shall implement the following actions.

Stage 1 – Mild Water Shortage Conditions

1. Goal: achieve a voluntary 10 percent reduction in daily demand.
2. Supply Management Measures: Communication with customers to reduce daily demand.
3. Demand Management Measures:
    a. The General Manager, or his designee(s) will contact the wholesale water customers to discuss water supply and/or demand conditions and

will request that wholesale water customers initiate voluntary measures to reduce water usage (e.g., implement Stage 1 of the customer's drought contingency plan).

b. The General Manage, or his designee(s), will provide a weekly report to the news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

Stage 2 – Moderate Water Shortage Conditions

1. Goal: achieve a 15 percent reduction in daily water demand.
2. Supply Management Measures: Communicate with customers to reduce daily demand. Utilize news media to inform and persuade public to reduce demand.
3. Demand Management Measures:
    a. The General Manager, or his designee(s), will initiate weekly contact with wholesale water customers to discuss water supply and/or demand conditions and the possibility of pro rata curtailment of water diversions and/or deliveries.
    b. The General Manager, or his designee(s), will request wholesale water customers to initiate mandatory measures to reduce non-essential water use (e.g., implement Stage 2 of the customer's drought contingency plan).
    c. The General Manager, or his designee(s), will initiate preparations for the implementation of pro rata curtailment of water diversions and/or deliveries by preparing a monthly water usage allocation baseline for each wholesale customer according to the procedures specified in Section IX of the plan.
    d. The General Manager, or his designee(s), will provide a weekly report to news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information of water conservation measures and practices.

Stage 3 – Severe Water Shortage Conditions

1. Goal: achieve a 20 percent reduction in daily water demand.
2. Supply Management Measures: Communicate with customers to reduce daily demand. Utilize news media to inform and persuade public to reduce demand. Pro-rata curtailment will be utilized.
3. Demand Management Measures:
    a. The General Manager, or his designee(s), will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate additional mandatory measures to reduce non-essential water use (e.g., implement Stage 2 of the customer's drought contingency plan.)

b. The General Manager, or his designee(s), will initiate pro-rate curtailment of water diversions and/or deliveries for each wholesale customer according to the procedures specified in Section VI of the Plan.
c. The General Manager, or his designee(s), will provide a weekly report to the news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

Stage 4 – Emergency Water Shortage Conditions

Whenever emergency water shortage conditions exist as defined in Section VII of the Plan, the General Manager shall:

1. Assess the severity of the problem and identify the actions needed and time required to solve the problem.
2. Inform the utility director or other responsible official of each wholesale water customer by telephone or in person and suggest actions, as appropriate, to alleviate problems (e.g., notification of the public to reduce water use until service is restored).
3. If appropriate, notify city, county, and/or state emergency response officials for assistance.
4. Undertake necessary actions, including repairs and/or clean up as needed.
5. Prepare a post-event assessment report on the incident and critique of emergency response procedures and actions.

Section IX: Pro Rata Water Allocation

In the event that the triggering criteria specified in Section VII of the Plan for Stage 3 – Severe Water Shortage conditions have been met, the General Manager is hereby authorized to initiate allocation of water supplies on a pro-rata basis in accordance with the Texas Water Code Section 11.039 and according to the following water allocation policies and procedures:

1. A wholesale customer's monthly allocation shall be a percentage of the customer's water usage baseline. The percentage will be set by resolution of the Northeast Texas Municipal Water District Board of Directors based on the General Manager's assessment of the severity of the water shortage condition and the need to curtail water diversions and/or deliveries and may be adjusted periodically by resolution of the Northeast Texas Municipal Water District Board of Directors as conditions warrant. Once pro-rata allocation is in effect, water diversions by or deliveries to each wholesale customer shall be limited to the allocation established for each month.
2. The General Manager, or his designee, for each wholesale customer, shall establish a monthly water usage allocation. The wholesale customer's water usage baseline will be computed on the average water usage by month for the

last 5-year period as shown on the example given below. If the wholesale customer's billing history is less than 5 years, the monthly average for the period for which no billing history exists.

Example Calculation of Monthly Allocation for Hypothetical Wholesale Water Customer:

	1994	1995	1996	1997	1998	SUM	AVE	Allocation Percentage	Monthly Allocation
Jan	133	137	146	148	156	720	144	75%	108
Feb	115	122	133	133	147	650	130	75%	98
Mar	130	150	146	149	159	734	147	75%	110
April	130	167	168	157	187	809	162	75%	122
May	160	152	179	183	171	845	169	75%	127
June	226	184	172	205	249	1036	207	75%	155
July	235	274	232	314	246	1301	260	75%	195
August	222	203	206	337	309	1277	255	75%	191
Sept	199	160	196	229	198	982	196	75%	147
Oct	165	172	197	165	185	884	177	75%	133
Nov	139	142	149	153	162	745	149	75%	112
Dec	142	143	150	156	165	756	151	75%	113
Total	1996	2006	2074	2329	2334		2147		

3. The General Manager shall provide notice, by certified, to each wholesale customer informing them of their monthly water usage allocations and shall notify the news media and the executive director of the Texas Natural Resource Conservation Commission upon initiation of pro-rata water allocation.

4. Upon request of the customer or at the initiative of the General Manager, the allocation may be reduced or increased if, (1) the designated period does not accurately reflect the wholesale customer's normal water usage; (2) the customer agrees to transfer part of its allocation to another wholesale customer: or (3) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the Northeast Texas Municipal Water District Board of Directors of the Northeast Texas Municipal Water District.

Section X: Enforcement

During any period when pro-rata allocation of available water supplies is in effect, wholesale customers shall pay the following surcharges on excess water diversions and/or deliveries:

1. 1.1 times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation up through 5 percent above the monthly allocation, to the extent legally permitted.
2. 1.2 times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation from 5 percent through 10 percent above the monthly allocation, to the extent legally permitted.
3. 1.5 times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation from 10 percent through 15 percent above the monthly allocation, to the extent legally permitted.
4. 2.0 times the normal water charge per acre-foot for water diversions and/or deliveries more than 15 percent above the monthly allocation, to the extent legally permitted.
5. The above surcharges shall be cumulative.

Section XI: Variances

The General Manager, or his designee, may, in writing, grant a temporary variance to the pro-rata water allocation policies provided by this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the public health, welfare, or safety and if one or more of the following conditions are met:

1. Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other conditions for which the Plan is in effect: or
2. Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Plan shall file a petition for a variance with the General Manager within 5 days after pro-rata allocation have been invoked. All petitions for variances shall be reviewed by the Northeast Texas Municipal Water District Board of Directors, and shall include the following:

1. Name and address of the petitioner(s).
2. Detailed statement with supporting data and information as to how the pro-rata allocation of water under the policies and procedures established in the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance.
3. Description of the relief requested.
4. Period of time for which the variance is sought.
5. Alternative measures the petitioner is taking or proposes to take to meet the intent of this plan and the compliance date.
6. Other pertinent information.

Variances granted by the Northeast Texas Municipal Water District Board of Directors shall be subject to the following conditions, unless waived or modified by the Northeast Texas Municipal Water District Board of Directors of its designee:

1. Variances granted shall include a timetable for compliance.
2. Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

No Variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

Section XII: Contract Provisions

The Northeast Texas Municipal Water District will include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, §11.039.

Section XIII: Severability

It is hereby declared to be the intention of the Northeast Texas Municipal Water District Board of Directors that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phase, clause, sentence, paragraph, or section of this Plan shall be declared unconstitutional of unenforceable by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality or enforceability shall not affect any of the remaining phases, clauses, sentences, paragraphs, and sections of this Plan, since the same would not have been enacted by the Northeast Texas Municipal Water District Board of Directors without the incorporation into this Plan of any such unconstitutional, or unenforceable phrase, clause, sentence, paragraph, or section.

Minutes of Regular Meeting
Northeast Texas Municipal Water District
Board of Directors
July 22, 2019 – 10:00 a.m.

The Board of Directors of the Northeast Texas Municipal Water District met in an open meeting on Monday, July 22, 2019 at 10:00 A.M. The meeting was held at Northeast Texas Municipal Water District's Executive Office located at 4180 Farm Road 250, Hughes Springs, Texas 75656. Notice of the meeting was legally posted. A quorum was present.

Present:	Jack Salmon, Jr.	- Avinger
	Stan Wyatt	- Daingerfield
	Joseph W. Weir, III	- Ore City
	Patrick Smith	- Pittsburg
	George Otstott	- Jefferson

Staff:	Walt Sears, Jr.
	Robyn Goodson
	Pete Wright

Jack Salmon, Jr. called the meeting to order at 10:00 a.m. Joseph W. Weir, III gave the invocation. Mr. Salmon led the directors in the pledge of allegiance to the United States flag and the Texas flag.

On a motion by George Otstott and a second by Joseph W. Weir, III minutes of the June 24, 2019 meeting were approved. Motion carried, all voting aye.

Joseph W. Weir, III made a motion to approve the monthly investment report, financial reports on all current accounts and funds and pay invoices for professional services. Stan Wyatt seconded the motion. Motion carried, all voting aye.

Stan Wyatt made a motion to continue our membership with TWCA and authorized payment of dues in the amount of $1,430.00. Joseph W. Weir, III seconded the motion. Motion carried, all voting aye.

Stan Wyatt made a motion to approve the June 2019 Southside financial report as presented and approve the quarterly reconciliation and adjusting entries as presented. Joseph W. Weir, III seconded the motion. Motion carried, all voting aye.

Pete Wright gave the Operations Manager report:

- Raw water quality as of June 6th is moderate. The raw water has a muddy smell and is high in manganese,
- Mr. Wright stated that we started adding carbon in the purification process on the 27th of June,
- Mr. Wright has been communicating with TCEQ and providing reports needed for the City of Daingerfield and Pittsburg to meet the requirements for their annual CCRs,
- One bid was received for sludge removal from Mr. Crawford, bid amount $17.00 a cubic yard. George Otstott made a motion to approve and accept the bid from Mr. Crawford for sludge removal at the bid of $17.00 a cubic yard. Stan Wyatt seconded the motion. Motion Carried, all voting aye,
- Daingerfield control valve is back to normal operation after a 2-week disablement due to thunderstorms, and
- Due to high water level we are still unable to reach Lake O' the Pines raw water pump station through normal access.

On a motion by Stan Wyatt and a second by George Otstott, the extension of the Clean Rivers Program contract with TCEQ for a 2-year period was authorized to enable additional work with grant funds. Motion carried, all voting aye.

Stan Wyatt made a motion to amend the Drought Contingency Plan to include additional language on pro-rata distributions in appropriate circumstances. Joseph W. Weir III seconded the motion. Motion carried, all voting aye.

Discussion occurred on NETMWD's position concerning the possible Federal Water Supply Rule. A resolution had been drafted regarding this topic. George Otstott made a motion to adopt the resolution regarding the Federal Water Supply Rule. Stan Wyatt seconded the motion. Mr. Weir inquired about the procedure regarding the two board members who were not present and securing their signatures on the resolution. After discussion, Mr. Otstott amended the motion to enable the board to approve with the five members who were present and to subsequently allow the General Manager to contact the other two board members to seek their signatures on the resolution if those Board members desired to sign it. Stan Wyatt seconded the amendment. The motion was amended, all voting aye. The motion as amended carried, all voting aye.

During the General Manager's report, Mr. Sears discussed RWSS production and costs. It was reported that the RRVA Oklahoma Conference is scheduled to meet August 22, 2019.

The next meeting of the Board of Directors was set for August 26, 2019, on a motion made by Joseph W. Weir, III. Stan Wyatt seconded the motion. Motion carried, all voting aye.

No public comments were made.

Motion to adjourn was made by Stan Wyatt. Joseph W. Weir, III seconded the motion. Motion carried, all voting aye.

APPROVED:

Saundra L. Wexler, President

ATTEST:

Jack Salmon, Jr., Secretary/Treasurer

CERTIFICATE OF ADJUDICATION

CERTIFICATE OF ADJUDICATION: 04-4590

OWNER: Northeast Texas Municipal Water District
P. O. Box 955
Hughes Springs, Texas 75656

COUNTY: Marion

PRIORITY DATE: September 16, 1957

WATERCOURSE: Johnson Creek, tributary of Cypress Creek and Cypress Creek (Lake O' the Pines)

BASIN: Cypress Creek

WHEREAS, by final decree of the 188th Judicial District Court of Gregg County, in Cause No. 86-257-A, In Re: The Adjudication of Water Rights in the Cypress Creek Basin dated June 9, 1986 a right was recognized under Permit 1897ABC authorizing the Northeast Texas Municipal Water District to appropriate waters of the State of Texas as set forth below;

NOW, THEREFORE, this certificate of adjudication to appropriate waters of the State of Texas in the Cypress Creek Basin is issued to the Northeast Texas Municipal Water District, subject to the following terms and conditions:

1. IMPOUNDMENT

Owner is authorized to store 251,000 acre feet of water in an existing dam and reservoir on Cypress Creek, known as Lake O' the Pines, which is owned by the United States of America and operated by the U.S. Corps of Engineers, between elevation 201 feet and elevation 228.5 feet above mean sea level. The dam is located in the A. Abram Survey, Abstract 3; the Joseph French Survey, Abstract 131; the Mrs. E.T. Jones Survey, Abstract 232; the T.B. Morton Survey, Abstract 283 and the David Chote Survey, Abstract 80, Marion County, Texas.

2. USE

A. Owner is authorized to divert and use not to exceed 42,000 acre-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin for municipal and domestic purposes of which not more than 1930 acre-feet of water per annum may be diverted from Lake Bob Sandlin by the City of Pittsburg in accordance with the trilateral agreement between the Titus County Fresh Water Supply District No. 1; the City of Pittsburg and the owner of this certificate.

B. Owner is authorized to divert and use not to exceed 161,800 acre-feet of water per annum from the aforesaid reservoir and

Lake Bob Sandlin for industrial purposes of which not more than 10,000 acre feet of water per annum may be diverted from Lake Bob Sandlin.

C. Owner is authorized to release sufficient amounts of industrial use water from Lake O' the Pines, to provide for the transwatershed diversion of 18,000 acre-feet of water per annum to the Sabine River Basin. Released water will be diverted from Cypress Creek and transported via pipeline for storage in Southwestern Electric Power Company's cooling Pond on Brady Branch, tributary of the Sabine River, Sabine River Basin.

D. Owner is also authorized to use the impounded water of the aforesaid reservoir for recreation purposes.

3. DIVERSION

A. Location:
At the perimeter of the aforesaid reservoir and from the perimeter of Lake Bob Sandlin under the Reservoir Operation Agreement.

B. Maximum rates are as shown:
(1) 1300.00 cfs (585,000 gpm) from Lake O' the Pines.

(2) 85.00 cfs (38,250 gpm) from Lake Bob Sandlin.

4. PRIORITY

The time priority of owner's right is September 16, 1957.

5. SPECIAL CONDITIONS

A. Owner shall maintain a suitable outlet in the aforesaid dam authorized herein to allow the free passage of water that owner is not entitled to divert or impound.

B. Owner is authorized to use the bed and banks of Cypress Creek, below the aforesaid dam, to convey and deliver water to be appropriated hereunder to downstream diversion points.

C. Owner's rights hereunder are subject to an agreement for reservoir operations on Cypress Creek between the Texas Water Development Board, the Titus County Fresh Water Supply District No. 1, the Franklin County Water District, the Northeast Texas Municipal Water District and the Lone Star Steel Company, dated January 1, 1973 and to subsequent amendments to that agreement or basin operation orders issued by the Commission.

Certificate of Adjudication 04-4590

The locations of pertinent features related to this certificate are shown on Page 6 of the Cypress Creek Basin Certificates of Adjudication Maps, copies of which are located in the offices of the Texas Water Commission, Austin, Texas and the office of the County Clerk of Morris and Marion Counties.

This certificate of adjudication is issued subject to all terms, conditions and provisions in the final decree of the 188th Judicial District Court of Gregg County, Texas, in Cause No. 86-257-A, In Re: The Adjudication of Water Rights in the Cypress Creek Basin dated June 9, 1986 and supersedes all rights of the owner asserted in that cause.

This certificate of adjudication is issued subject to senior and superior water rights in the Cypress Creek Basin.

This certificate of adjudication is issued subject to the obligations of the State of Texas pursuant to the terms of the Red River Compact.

This certificate of adjudication is issued subject to the Rules of the Texas Water Commission and its continuing right of supervision of State water resources consistent with the public policy of the State as set forth in the Texas Water Code.

TEXAS WATER COMMISSION

Paul Hopkins

Paul Hopkins, Chairman

DATE ISSUED:

OCT 13 1986

ATTEST:

Mary Ann Hefner

Mary Ann Hefner, Chief Clerk

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

AMENDMENT TO
CERTIFICATE OF ADJUDICATION

CERTIFICATE NO. 04-4590A

Permittee	: Northeast Texas Municipal Water District	Address	: P.O. Box 955 Hughes Springs, Texas 75656
Filed	: August 22, 1995	Granted	: DEC 15 1995
Purpose	: Municipal, Domestic, Industrial And Recreation	County	: Marion
Watercourse	: Johnson Creek, tributary of Cypress Creek and Cypress Creek	Watershed	: Cypress Basin

WHEREAS, Certificate of Adjudication No. 04-4590 was issued to the Northeast Texas Municipal Water District on October 13, 1986 and authorized certificate owner to store 251,000 acre-feet of water in an existing dam and reservoir on Cypress Creek known as Lake O' the Pines; and

WHEREAS, owner is authorized: to divert and use not to exceed 42,000 acre-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin (immediately upstream of Lake O' the Pines) for municipal and domestic purposes; to divert and use not to exceed 161,800 care-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin for industrial purposes of which not more than 10,000 acre-feet of water per annum may be diverted from Lake Bob Sandlin and to use the impounded water of Lake O' the Pines for recreational purposes; and

WHEREAS, an application was received from Northeast Texas Municipal Water District wherein applicant seeks to amend the certificate by authorizing transwatershed diversion of an additional 20,000 acre-feet of water per annum from Lake O' the Pines into the Sabine River Basin for municipal and industrial use by the City of Longview; and

WHEREAS, the water will be diverted from the perimeter of the reservoir on the south shore of Lake O' the Pines at a rate of diversion not to exceed 100 cfs (44,883 gpm); and

WHEREAS, the Texas Natural Resource Conservation Commission finds that jurisdiction over the application is established; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Natural Resource Conservation Commission in issuing this amendment; and

NOW, THEREFORE, this amendment to Certificate No. 04-4590 is issued to Northeast Texas Municipal Water District, subject to the following terms and conditions:

1. USE

In addition to the uses contained in Certificate No. 04-4590, owner is authorized to provide for the transwatershed diversion of 20,000 acre-feet of water per annum for municipal and industrial uses from Lake O' the Pines to the Sabine River Basin for use by the City of Longview, Texas.

2. DIVERSION RATE

Water diverted from the perimeter of the reservoir at a maximum rate of 100 cfs (44,883 gpm)

3. WATER CONSERVATION

Owner shall maintain a water conservation plan that provides for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future use or alternative uses. Such plan shall include a requirement in every wholesale water supply contract entered into, on or after the effective date of this permit, including any contract extension or renewal, that each successive wholesale customer develop and implement water conservation measures. If the customer intends to resell the water, then the contract for the resale of the water must have water conservation requirements so that each successive wholesale customer in the resale of the water will be required to implement water conservation measures.

3. TIME PRIORITY

The time priority of this amendment is September 6, 1957.

This amendment is issued subject to all terms, conditions and provisions contained in Certificate No. 04-4590, except as specifically amended herein.

This amendment is issued subject to all superior and senior water rights in the Cypress Basin.

Certificate owner agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Natural Resource Conservation Commission and to the right of continuing supervision of State water resources exercised by the Commission.

TEXAS NATURAL RESOURCE
CONSERVATION COMMISSION

For the Commission

Date Issued: DEC 15 1995

ATTEST:

Laurie Lancaster

for Gloria A. Vasquez, Chief Clerk

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AMENDMENT TO A
CERTIFICATE OF ADJUDICATION

CERTIFICATE NO. 04-4590B			TYPE: §11.085
Owner:	Northeast Texas Municipal Water District	Address:	P.O. Box 955 Hughes Springs, Texas 75656
Filed:	May 15, 2008	Granted:	OCT 14 2008
Purpose:	Municipal, Domestic, Industrial, and Recreation	Counties:	Marion, Harrison
Watercourse:	Johnson Creek, Tributary of Cypress Creek, and Cypress Creek	Watershed:	Cypress Creek Basin, Sabine River Basin

WHEREAS, Northeast Texas Municipal Water District (Owner) is authorized to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States (U.S.) and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreation purposes; and

WHEREAS, Owner is authorized to divert and use not to exceed 42,000 acre-feet per year from Lake O' the Pines and Lake Bob Sandlin on Cypress Creek, Cypress Creek Basin, for municipal and domestic purposes, of which not more than 1,930 acre-feet of water per year may be diverted from Lake Bob Sandlin by the City of Pittsburg, and to divert and use not to exceed 161,800 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin for industrial purposes of which no more than 10,000 acre-feet of water per year may be diverted from Lake Bob Sandlin; and

WHEREAS, Owner is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm) and from the perimeter of Lake Bob Sandlin at a maximum diversion rate of 85 cfs (38,250 gpm); and

WHEREAS, Owner is authorized interbasin transfer of not to exceed 18,000 acre-feet of water per year from Lake O' the Pines for industrial purposes and not to exceed 20,000 acre-feet per year from Lake O' the Pines at a maximum diversion rate of 100 cfs (44,883 gpm) for municipal and industrial purposes in the Sabine River Basin; and

WHEREAS, Owner is authorized to use the bed and banks of Cypress Creek below Lake O' the Pines to convey and deliver water to downstream diversion points; and

WHEREAS, Owner's time priority for this Certificate is September 6, 1957, and multiple special conditions apply; and

WHEREAS, pursuant to the Northeast Texas Municipal Water District Raw Water Purchase Contract with the City of Marshall, dated February 1, 2006, Northeast Texas Municipal Water District has applied to amend Certificate of Adjudication No. 04-4590 to authorize an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines (out of the water currently authorized for diversion) for municipal, domestic, and industrial purposes from that portion of Harrison County located in the Cypress Basin to that portion of Harrison County in the Sabine River Basin for use by the City of Marshall; and

WHEREAS, the water will be conveyed using the bed and banks of Cypress Creek and diverted at the City of Marshall's diversion point on Cypress Creek authorized under Certificate of Adjudication No. 04-4614; and

WHEREAS, this application is subject to the obligations of the state of Texas pursuant to the terms of the Red River Compact; and

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established; and

WHEREAS, the Executive Director recommends that special conditions be included in the amendment; and

WHEREAS, no requests for a contested case hearing were received for this application; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality Commission in issuing this amendment;

NOW, THEREFORE, this amendment to Certificate of Adjudication No. 04-4590, designated Certificate of Adjudication No. 04-4590B, is issued to the Northeast Texas Municipal Water District, subject to the following terms and conditions:

1. USE

In addition to the current authorization, Owner is authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines (out of the water currently authorized for diversion) for municipal, domestic, and industrial purposes from that portion of Harrison County located in the Cypress Creek Basin to that portion of Harrison County in the Sabine River Basin for use by the City of Marshall pursuant to the Northeast Texas Municipal Water District Raw Water Purchase Contract, dated February 1, 2006.

2. PRIORITY

The time priority for this amendment is September 6, 1957.

3. CONSERVATION

Owner shall implement water conservation plans that provide for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future or alternative uses. Such plans shall include a requirement that in every wholesale water contract entered into, on or after the effective date of this amendment, including any contract extension or renewal, that each successive wholesale customer develop and implement conservation measures. If the customer intends to resell the water, then the contract for resale of the water must have water conservation requirements so that each successive wholesale customer in the resale of the water is required to implement water conservation measures.

4. SPECIAL CONDITIONS

In addition to the special conditions already present in Certificate of Adjudication No. 04-4590, as amended, which remain in effect, the following special conditions apply:

A. The authorization granted herein is subject to the continued maintenance of the Northeast Texas Municipal Water District Raw Water Purchase Contract, dated February 1, 2006, between Northeast Texas Municipal Water District and the City of Marshall or extensions thereof. Upon expiration of said contract, Owner shall cease conveyance of the authorized water to the City of Marshall and the City of Marshall shall cease diversion of that water and either apply to amend the certificate, or voluntarily forfeit this amendment. If the Owner does not amend the Certificate or forfeit the amendment, the Commission may begin proceedings to cancel this amendment. The Commission shall be notified immediately by Owner upon amendment or expiration of the water supply contract and provided with copies of appropriate documents effecting such changes.

B. Within 90 days prior to diversion of the water for industrial use, the applicant or contract customer must submit a water conservation plan for industrial use to the TCEQ that complies with Title 30 Texas Administrative Code §288.3.

This amendment is issued subject to all terms, conditions, and provisions contained in Certificate of Adjudication No. 04-4590, as amended, except as specifically amended herein.

This amendment is issued subject to all superior and senior water rights in the Cypress Creek Basin.

This amendment is issued subject to the obligations of the state of Texas pursuant to the terms of the Red River Compact

Owner agrees to be bound by the terms, conditions, and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

For the Commission

ISSUED: OCT 14 2008