

Buddy Garcia, *Chairman*  
Larry R. Soward, *Commissioner*  
Bryan W. Shaw, Ph.D., *Commissioner*  
Mark R. Vickery, P.G., *Executive Director*



TEXAS  
COMMISSION  
ON ENVIRONMENTAL  
QUALITY

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## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

CHIEF CLERKS OFFICE

August 29, 2008

LaDonna Castañuela  
Texas Commission on Environmental Quality  
Office of the Chief Clerk, MC-105  
P.O. Box 13087  
Austin, Texas 78711

Re: Diamond Shamrock, Refining Company, L.P.  
TPDES Permit No. WQ0001353000  
Executive Director's Response to Hearing Requests

Dear Ms. Castañuela:

Enclosed for filing is the Executive Director's Response to Hearing Requests in the above referenced matter.

If you have any questions, please contact me at (512) 239.5778.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony Tatu".

Anthony Tatu  
Staff Attorney  
Environmental Law Division

Cc: service list

DOCKET NUMBER 2008-0486-MWD

2008 AUG 29 PM 3:04

APPLICATION BY	§	BEFORE THE	CHIEF CLERKS OFFICE
DIAMOND SHAMROCK	§	TEXAS COMMISSION ON	
REFINING COMPANY, L.P. FOR	§	ENVIRONMENTAL QUALITY	
PERMIT NO. WQ0001353000	§		

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**EXECUTIVE DIRECTOR'S RESPONSE TO HEARING REQUESTS**

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**I. Introduction**

The Executive Director of the Texas Commission on Environmental Quality (TCEQ or Commission) files this Response to Hearing Requests (Response) on the application by Diamond Shamrock Refining Company, L.P., for an amendment to Texas Pollutant Discharge Elimination System (TPDES) Permit, No. WQ0001353000.

Requests for Hearing were timely filed by Mary K. Sahs on behalf of Virginia and Lloyd Stewart.

Attached for Commission consideration are the following:

Attachment A	Statement of Basis/Technical Summary and Executive Director's Preliminary Decision
Attachment B	Draft Permit
Attachment C	Compliance History
Attachment D	Executive Director's Response to Public Comments (RTC)
Attachment E	GIS Map

Copies of the documents were provided to all parties. The Office of the Chief Clerk previously mailed the RTC to all persons on the mailing list.

## **II. Facility Description**

Diamond Shamrock Refining Company, L.P., P.O. Box 490, Three Rivers, Texas 78071-0490, which operates a petroleum refinery, has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to TPDES Permit No. WQ0001353000 to increase the daily average permitted flow at Outfall 001 from 800,000 gallons per day to 1,500,000 gallons per day; increase the daily maximum permitted flow at Outfall 001 from 1,600,000 gallons per day to 3,000,000 gallons per day; increase effluent limitations for all limited parameters at Outfall 001; remove monitoring/reporting requirements for total antimony, total arsenic, total barium, total cadmium, cyanide, total chromium, hexavalent chromium, total copper, total lead, total mercury, total selenium, total silver, and fecal coliform at Outfall 001; increase the size of the irrigation tract from 1376 acres to 1438 acres; increase the minimum irrigation area from 341.5 acres to 474 acres; increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year; and remove the retest provision which requires monitoring for benzene, ethylbenzene, toluene, total xylene, and methyl-tertiary-butyl-ether (MTBE) at Outfall 001. The current permit authorizes the discharge of treated process wastewater, utility wastewater, storm water, and treated ground water via Outfall 001 at a daily average flow not to exceed 800,000 gallons per day; the intermittent flow variable discharge of storm water runoff and plant wash water via Outfall 002; and the disposal of treated process wastewater, utility wastewater, storm water, and treated ground water via irrigation of 1376 acres. This application was submitted to the TCEQ on December 31, 2004.

The facility is located at 301 Leroy Street in the City of Three Rivers, Live Oak County, Texas; with an irrigation (disposal) site located adjacent to the southwest side of Interstate Highway 37, approximately one mile northwest of the intersection of Interstate Highway 37 and State Highway 72, north of the City of Three Rivers, Live Oak County, Texas. The effluent is discharged to an unnamed ditch, thence to the Nueces/Lower Frio River, in Segment No. 2106 of the Nueces River Basin.

## **III. Procedural Background**

The application was received on December 31, 2004 and declared administratively complete on February 24, 2005. The Executive Director completed the technical review of the application on February 23, 2006 and prepared a draft permit. The Notice of Receipt of Application and Intent to Obtain a Water Quality Permit was published on March 16, 2005. Additional time was taken by the Applicant during this period to conduct successful settlement negotiations with the City of Corpus Christi and the City of Three Rivers. Subsequently, the Notice of Application and Preliminary Decision was published on April 11, 2007. The public comment period ended on May 11, 2007. On July 7, 2007, Diamond Shamrock filed an application for an Emergency Order. The Emergency Order was considered by the Commission on August 22, 2007 and signed on August 31, 2007. Additional time was taken to adequately prepare the RTC for this application. Although the comments raised varied in complexity, many

of the comments raised very specific and technical concerns, and required much of staff's effort to address. The Executive Director's Response to Public Comments was filed on April 4, 2008.

#### **IV. The Evaluation Process for Hearing Requests**

House Bill 801 established statutory procedures for public participation in certain environmental permitting proceedings. For those applications declared administratively complete on or after September 1, 1999, it established new procedures for providing public notice and public comment, and for the Commission's consideration of hearing requests. The application was declared administratively complete on January 26, 2007 and therefore is subject to the HB 801 requirements. The Commission implemented HB 801 by adopting procedural rules in 30 Texas Administrative Code (30 TAC) Chapters 39, 50, and 55. The regulations governing requests for contested case hearings are found at 30 TAC, Chapter 55.

##### **A. Responses to Requests**

"The Executive Director, the public interest counsel, and applicant may submit written responses to [hearing] requests . . . ." 30 TAC § 55.209(d).

Responses to hearing requests must specifically address:

- (1) whether the requestor is an affected person;
- (2) which issues raised in the hearing request are disputed;
- (3) whether the dispute involves questions of fact or of law;
- (4) whether the issues were raised during the public comment period;
- (5) whether the hearing request is based on issues raised solely in a public comment withdrawn by the commenter in writing by filing a withdrawal letter with the chief clerk prior to the filing of the Executive Director's Response to Comment;
- (6) whether the issues are relevant and material to the decision on the application; and
- (7) a maximum expected duration for the contested case hearing.

30 TAC § 55.209(e).

##### **B. Hearing Request Requirements**

In order for the Commission to consider a hearing request, the Commission must first determine whether the request meets certain requirements.

A request for a contested case hearing by an affected person must be in writing, must be filed with the chief clerk within the time provided . . . and may not be based on an issue that was raised solely in a public comment withdrawn by the commenter in writing by filing a withdrawal letter with the chief clerk prior to the filing of the Executive Director's Response to Comment.

30 TAC § 55.201(c).

A hearing request must substantially comply with the following:

- (1) give the time, address, daytime telephone number, and where possible, fax number of the person who files the request. If the request is made by a group or association, the request must identify one person by name, address, daytime telephone number, and where possible, fax number, who shall be responsible for receiving all official communications and documents for the group;
- (2) identify the person's personal justiciable interest affected by the application, including a brief, but specific, written statement explaining in plain language the requestor's location and distance relative to the proposed facility or activity that is the subject of the application and how and why the requestor believes he or she will be adversely affected by the proposed facility or activity in a manner not common to members of the general public;
- (3) request a contested case hearing;
- (4) list all relevant and material disputed issues of fact that were raised during the public comment period and that are the basis of the hearing request. To facilitate the commission's determination of the number and scope of issues to be referred to hearing, the requestor should, to the extent possible, specify any of the executive director's responses to comments that the requestor disputes and the factual basis of the dispute and list any disputed issues of law or policy; and
- (5) provide any other information specified in the public notice of application.

30 TAC § 55.201(d).

**C. Requirement that Requestor be an "Affected Person"**

In order to grant a contested case hearing, the Commission must determine that a requestor is an "affected person."

- (a) For any application, an affected person is one who has a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest affected by the application. An interest common to members of the general public does not qualify as a personal justiciable interest.
- (b) Governmental entities, including local governments and public agencies with authority under state law over issues raised by the application may be considered affected persons.
- (c) In determining whether a person is an affected person, all factors shall be considered, including, but not limited to, the following:
  - (1) whether the interest claimed is one protected by the law under which the application will be considered;
  - (2) distance restrictions or other limitations imposed by law on the affected interest;

- (3) whether a reasonable relationship exists between the interest claimed and the activity regulated;
- (4) likely impact of the regulated activity on the health and safety of the person, and on the use of property of the person;
- (5) likely impact of the regulated activity on use of the impacted natural resource by the person; and
- (6) for governmental entities, their statutory authority over or interest in the issues relevant to the application.

30 TAC § 55.203.

**D. Referral to the State Office of Administrative Hearings**

“When the commission grants a request for a contested case hearing, the commission shall issue an order specifying the number and scope of the issues to be referred to SOAH for a hearing.” 30 TAC § 50.115(b).

The commission may not refer an issue to SOAH for a contested case hearing unless the commission determines that the issue:

- (1) involves a disputed question of fact;
- (2) was raised during the public comment period; and
- (3) is relevant and material to the decision on the application.

30 TAC § 50.115(c).

**V. Analysis of the Requests**

**A. *Analysis of the Hearing Requests***

**1. *Whether the Requestors Complied With 30 TAC §§ 55.201(c) and (d)***

Virginia and Lloyd Stewart submitted timely written hearing requests that included relevant contact information and raised disputed issues, therefore the Executive Director recommends that the Commission find that the Stewart’s hearing requests substantially comply with the requirements of 30 TAC § 55.201(c) & (d).

**2. *Whether the Requestors Met the Requirements of an Affected Person***

Virginia and Lloyd Stewart state that they own 200 acres in Live Oak County, where they raise and sell cattle and maintain horses to assist with their cattle operation. They state that this property is a little more than ¼ mile downhill from the Applicant’s irrigation property. The

Executive Director has prepared a GIS map which shows the Stewart's proximity to the Applicant's irrigation fields. (See Attachment E). In their hearing request, the Stewarts claim that the Applicant's irrigation practices pose continuing problems for them in terms of impaired water quality, contaminated soil, and nuisance conditions. The Stewarts also hired Lauren Ross, Ph.D to perform a sampling investigation on and in the vicinity of their property, and have collected data which they believe supports this claim that wastewater from the Applicant's operations flows onto their property resulting in the migration of contamination.

Given that the Stewarts own land and live very close to the Applicant's irrigation fields, and have raised personal justiciable interests not common to that of the general public. The Executive Director concludes they are affected persons.

The Executive Director respectfully recommends that the Commission find the Stewarts to be affected persons under the requirements of 30 TAC § 55.203.

**B. *Whether the Issues Raised are Referable to SOAH for a Contested Case Hearing***

The Executive Director has analyzed issues raised in accordance with the regulatory criteria. The issues discussed were raised during the public comment period and addressed in the RTC. None of the issues were withdrawn. The issues raised for this application and the Executive Director's analysis and recommendations follow.

**1. *Whether the application was properly noticed as required by Texas Water Code § 26.028?***

As raised by the Stewarts, this is an issue of law. TCEQ regulations found at 30 TAC § 39.411 contain the information which must be included in notices. The Stewarts do not dispute that the notice includes all the required by the rule. 30 TAC § 50.115 (c) requires that for an issue to be referred to SOAH, the issue must raise factual, not legal issues.

The Executive Director recommends referring this issue to SOAH.

**2. *Whether the draft permit satisfies regulatory requirements intended to protect water quality, human health, and the environment?***

Virginia and Lloyd Stewart raised this issue. This issue is within TCEQ's jurisdiction, involves a question of fact, was raised during the public comment period, and was not withdrawn. This issue is relevant and material to a decision on the permit application.

The Executive Director recommends referring this issue to SOAH.

**3. Whether the Applicant's compliance history will result in its inability to comply with material terms of the draft permit?**

Virginia and Lloyd Stewart raised this issue. This issue is within TCEQ's jurisdiction, involves a question of fact, was raised during the public comment period, and was not withdrawn. Therefore, this issue is relevant and material to a decision on the permit application.

The Executive Director recommends referring this issue to SOAH.

**4. Whether the proposed permit adequately prescribes monitoring and reporting requirements?**

Virginia and Lloyd Stewart raised this issue. This issue is within TCEQ's jurisdiction, involves a question of fact, was raised during the public comment period, and was not withdrawn. Therefore, this issue is relevant and material to a decision on the permit application.

The Executive Director recommends referring this issue to SOAH.

**5. Whether wastewater from the Applicant's irrigation fields will flow onto the Stewarts' property and cause contamination and nuisance conditions?**

Virginia and Lloyd Stewart raised this issue. This issue is within TCEQ's jurisdiction, involves a question of fact, was raised during the public comment period, and was not withdrawn. This issue is relevant and material to a decision on the permit application.

The Executive Director recommends referring this issue to SOAH.

**6. Whether the draft permit expands the types and volume of wastewater used for irrigation in violation of the Texas Water Code?**

The Stewarts raised this issue. This issue is within TCEQ's jurisdiction, involves a question of fact, was raised during the public comment period, and was not withdrawn. This issue is relevant and material to a decision on the permit application.

The Executive Director recommends referring this issue to SOAH.

**VI. Duration of the Contested Case Hearing**

The Executive Director recommends a nine-month duration for a contested case hearing on this matter, should there be one, between preliminary hearing and the presentation of a proposal for decision.

## **VII. Executive Director's Recommendation**

The Executive Director recommends the Commission grant the hearing requests of Virginia and Lloyd Stewart and refer the issues below to SOAH for a proceeding of nine months duration.

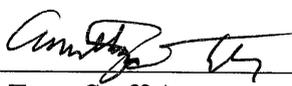
- 1. Whether the application was properly noticed as required by Texas Water Code § 26.028?**
- 2. Whether the draft permit satisfies regulatory requirements intended to protect water quality, human health, and the environment?**
- 3. Whether the Applicant's compliance history will result in its inability to comply with material terms of the draft permit?**
- 4. Whether the proposed permit adequately prescribes monitoring and reporting requirements?**
- 5. Whether wastewater from the Applicant's irrigation fields will flow onto the Stewarts' property and cause contamination and nuisance conditions?**
- 6. Whether the draft permit expands the types and volume of wastewater used for irrigation in violation of the Texas Water Code?**

Respectfully submitted,

TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

Mark R. Vickery, P.G.  
Executive Director

Robert Martinez, Director  
Environmental Law Division

By   
Anthony Tatu, Staff Attorney  
Environmental Law Division  
State Bar No. 00792869  
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REPRESENTING THE  
EXECUTIVE DIRECTOR OF THE  
TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

**CERTIFICATE OF SERVICE**

I certify that on August 29, 2008, the original and eight copies of the "Executive Director's Response to Hearing Requests" for Diamond Shamrock Refining Company, L.P., TPDES Permit No. WQ0001353000, were filed with the TCEQ's Office of the Chief Clerk and a complete copy was served to all persons listed on the attached mailing list via hand delivery, facsimile transmission, inter-agency mail, or by deposit in the U.S. Mail.



Anthony Tatu, Staff Attorney  
Environmental Law Division  
State Bar No. 00792869

CHIEF CLERKS OFFICE

2008 AUG 29 PM 3:04

TEXAS  
COMMISSION  
ON ENVIRONMENTAL  
QUALITY

MAILING LIST  
DIAMOND SHAMROCK REFINING COMPANY, L.P  
TPDES PERMIT NO. WQ0001353000

FOR THE APPLICANT:

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FOR THE OFFICE OF PUBLIC  
INTEREST COUNSEL OF THE  
TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY:

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FOR THE CHIEF CLERK:

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ALTERNATIVE DISPUTE  
RESOLUTION:

Kyle Lucas  
Office of Alternative Dispute Resolution  
Texas Commission on Environmental  
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Austin, Texas 78711-3087

PROTESTANTS:

Ms. Mary K. Sahs  
Carls, McDonald & Dalrymple, LLP  
901 South Mopac Expressway  
Barton Oaks Plaza 2, Suite 500  
Austin, Texas 78746

Mr. Lloyd Stewart, Jr.  
1299 Highway 72  
Three Rivers, Texas 78071-2609

Attachment A  
Statement of Basis/Technical Summary  
and  
Executive Director's Preliminary Decision

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0001353000 (TX0088331) to discharge to water in the state.

Issuing Office: Texas Commission of Environmental Quality  
P.O. Box 13087  
Austin, Texas 78711-3087

Applicant: Diamond Shamrock Refining Company, L.P.  
P.O. Box 490  
Three Rivers, Texas 78071-0490

Prepared By: Michael Sunderlin  
Wastewater Permitting Section (MC-148)  
Water Quality Division  
(512) 239-4523

Date: February 2, 2007

Permit Action: Amendment; TPDES Permit No. WQ0001353000

### I. EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. It is proposed the permit be issued to expire on May 1, 2010 following the requirements of 30 TAC § 305.71.

### II. APPLICANT ACTIVITY

The applicant currently operates a petroleum refinery.

### III. DISCHARGE LOCATION

As described in the application, the plant site is located at 301 Leroy Street in the City of Three Rivers, Live Oak County, Texas; with an irrigation (disposal) site located adjacent to the southwest side of Interstate Highway 37, approximately one mile northwest of the intersection of Interstate Highway 37 and State Highway 72, north of the City of Three Rivers, Live Oak County, Texas. Discharge is to an unnamed ditch, thence to the Nueces/Lower Frio River in Segment No. 2106 of the Nueces River Basin.

### IV. RECEIVING STREAM USES

The unclassified receiving waters have no significant aquatic life use for the unnamed ditch. The designated uses for Segment No. 2106 are high aquatic life use, contact recreation, and public water supply.

### V. STREAM STANDARDS

The general criteria and numerical criteria which make up the stream standards are provided in the Texas Administrative Code (TAC), 30 TAC §§ 307.1 - §307.10, effective April 30, 1997.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the Monthly Effluent Report data for the period of August 2002 through September 2005. The "Average of Daily Avg." values presented in the following table are the average of all daily average values for the reporting period for each parameter. The "Maximum of Daily Max." values presented in the following table are the individual maximum values for the reporting period for each parameter:

A. Flow		Average of	Maximum of
<u>Outfall</u>	<u>Frequency</u>	<u>Daily Avg (MGD)</u>	<u>Daily Max (MGD)</u>
001	Intermittent	0.58	1.58
B. Effluent Characteristics		Average of	Maximum of
<u>Outfall</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	Biochemical Oxygen Demand (5-day)	20.4 lbs/day 7.22 mg/l	166.4 lbs/day 59.63 mg/l
	Total Suspended Solids	35.9 lbs/day	260.79 lbs/day
	Total Dissolved Solids	12215 lbs/day 2405 mg/l	28584 lbs/day 4225 mg/l (*1)
	Chemical Oxygen Demand	270.6 lbs/day	1098.09 lbs/day
	Oil and Grease	5.64 lbs/day	33.83 lbs/day
	Ammonia (as Nitrogen)	18.2 lbs/day	253.41 lbs/day
	Cyanide	< 0.02 mg/l	< 0.02 mg/l
	Total Sulfide	0.040 lbs/day	0.30 lbs/day
	Chloride	3217 mg/l	7848 mg/l
	Total Antimony	0.0158 mg/l	0.0699 mg/l
	Total Arsenic	0.023 mg/l	0.229 mg/l
	Total Barium	0.28 mg/l	0.636 mg/l
	Total Cadmium	0.00138 mg/l	0.0035 mg/l
	Hexavalent Chromium	0.032 lbs/day	0.11 lbs/day
	Total Chromium	0.0116 lbs/day	0.08 lbs/day
	Total Copper	0.098 mg/l	0.284 mg/l
	Total Lead	0.0012 mg/l	0.012 mg/l
	Total Mercury	0.00020 lbs/day	0.003 lbs/day
	Total Phenolics	0.095 lbs/day	1.05 lbs/day
	Total Selenium	0.004 mg/l	0.0695 mg/l
Total Silver	0.0151 mg/l	0.161 mg/l	
Total Zinc	0.843 lbs/day	4.56 lbs/day	
Fecal Coliform	2.15 col/100mls	> 100 col/100mls	
pH	6.1 S.U. (min)	8.0 S.U.	
002	Chemical Oxygen Demand	N/A	300 mg/l
	Oil and Grease	N/A	8.1 mg/l
	pH	6.3 S.U. (min)	8.2 S.U.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## C. Exceedances of Effluent Limitations

<u>Outfall</u>	<u>Parameter</u>	<u>Months of Daily Avg.</u>	<u>Months of Daily Max.</u>
001	Biochemical Oxygen Demand (5-day)	0	0
	Ammonia (as Nitrogen)	0	2
	Total Zinc	5	2
002	Chemical Oxygen Demand	N/A	1

No permit action was taken based on the exceedances listed above. The exceedances for ammonia (as nitrogen) and biochemical oxygen demand (5-day) at Outfall 001 and chemical oxygen demand at Outfall 002 were isolated excursions and do not indicate any persistent problems. The exceedances for total zinc at Outfall 001 occurred during an eight month period (Nov 2003 - June 2004) which ended at the same time the current permit was amended to allow greater flexibility in the patterns (durations, total annual volume, and days discharge can occur) of discharge from the facility. Since the current monitoring frequency for total zinc at Outfall 001 is 2/week and the permittee now has greater flexibility in managing its discharges, it was determined that no permit action was necessary at this time.

VII. PROPOSED EFFLUENT LIMITATIONS

Final effluent limitations are established in the draft permit as follows:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
001 - Interim	Flow	1.5 MGD	3.0 MGD
	Carbonaceous Biochemical Oxygen Demand (5-day)	588 lbs/day 47 mg/l	1177 lbs/day 94 mg/l
	Chemical Oxygen Demand	4605 lbs/day	8967 lbs/day
	Total Suspended Solids	684 lbs/day	1137 lbs/day
	Oil and Grease	255 lbs/day	456 lbs/day
	Ammonia as Nitrogen	200 lbs/day 16 mg/l	400 lbs/day 32 mg/l
	Phenols	4.1 lbs/day	8.5 lbs/day
	Sulfides	3.8 lbs/day	8.4 lbs/day
	Chromium, Total	9.9 lbs/day	24 lbs/day
	Chromium, Hexavalent	0.169 lbs/day	0.357 lbs/day
	Selenium, Total	Report mg/l	Report mg/l
	Silver, Total	Report mg/l	Report mg/l
	Total Dissolved Solids	26,504 lbs/day	56,074 lbs/day
	Total Dissolved Solids	3562 mg/l	5600 mg/l
	Chlorides	37,935 lbs/day	80,257 lbs/day
	Total Mercury	0.0036 lbs/day	0.0077 lbs/day
	Total Zinc	6.65 lbs/day	14.1 lbs/day
	Total Copper (*1)	Report mg/l	Report mg/l
	Total Copper (*2)	0.925 lbs/day	1.96 lbs/day
	Dissolved Oxygen	4.0 mg/l	N/A
	pH	6.0 S.U. (min)	9.0 S.U.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
001 - Final	Flow	1.5 MGD	3.0 MGD
	Carbonaceous Biochemical Oxygen Demand (5-day)	588 lbs/day	1177 lbs/day
	Chemical Oxygen Demand	47 mg/l	94 mg/l
	Total Suspended Solids	5995 lbs/day	11668 lbs/day
	Oil and Grease	851 lbs/day	1396 lbs/day
	Ammonia as Nitrogen	319 lbs/day	575 lbs/day
		200 lbs/day	400 lbs/day
		16 mg/l	32 mg/l
	Phenols	5.5 lbs/day	11 lbs/day
	Sulfides	5.0 lbs/day	11 lbs/day
	Chromium, Total	12 lbs/day	29 lbs/day
	Chromium, Hexavalent	0.169 lbs/day	0.357 lbs/day
	Selenium, Total	Report mg/l	Report mg/l
	Silver, Total	Report mg/l	Report mg/l
	Total Dissolved Solids	26,504 lbs/day	56,074 lbs/day
	Total Dissolved Solids	3562 mg/l	5600 mg/l
	Chlorides	90,813 lbs/day	192,128 lbs/day
	Total Mercury	0.0036 lbs/day	0.0077 lbs/day
	Total Zinc	6.65 lbs/day	14.1 lbs/day
	Total Copper (*1)	Report mg/l	Report mg/l
	Total Copper (*2)	0.925 lbs/day	1.96 lbs/day
	Dissolved Oxygen	4.0 mg/l	N/A
	pH	6.0 S.U. (min)	9.0 S.U.
002	Chemical Oxygen Demand	N/A	150 mg/l
	Oil and Grease	N/A	15 mg/l
	pH	6.0 S.U. (min)	9.0 S.U.

(\*1) Effective from date of permit issuance and lasting for three (3) years.

(\*2) Effective three (3) years after permit issuance and lasting until permit expiration.

VIII. SUMMARY OF CHANGES FROM APPLICATION

The applicant has requested an amendment to the existing permit for the changes specified in Section X.A. of this Fact Sheet. The removal of monitoring/reporting requirements for total chromium, hexavalent chromium, total copper, total mercury, total selenium, and total silver at Outfall 001 could not be made as requested.

- \* Total chromium and hexavalent chromium limitations are required by applicable EPA categorical guidelines (40 CFR Part 419).
- \* Total copper exceeded the water quality screening criteria for aquatic life protection and will require that water quality-based effluent limitations be included in the draft permit. Please refer to Section X.D.(2) of this Fact Sheet for further discussion.
- \* Total mercury effluent limitations and monitoring requirements are present in the current TPDES permit. The permit application did not contain a suitable justification to the anti-backsliding regulations [40 CFR Part 122.44(1)] to allow for removal of these requirements.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

- \* Total selenium and total silver monitoring requirements have been continued in the draft permit based on a review of historical self-report data which indicates that the concentration levels in the effluent continue to periodically show up in levels of concern.

Additionally, the following changes are more stringent than the requirements in the current permit.

- \* New daily average concentration limitation for dissolved oxygen at Outfall 001 based on dissolved oxygen protection of the receiving water.

See the next section for additional changes to the existing permit.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

Changes from the existing permit that were requested by the permittee in their amendment application and included in the proposed draft permit consist of the following items:

- \* Increase the daily average permitted flow at Outfall 001 from 800,000 gallons per day to 1,500,000 gallons per day; and increase the daily maximum permitted flow at Outfall 001 from 1,600,000 gallons per day to 3,00,000 gallons per day.
- \* Remove monitoring/reporting requirements for total antimony, total arsenic, total barium, total cadmium, cyanide, total lead, and fecal coliform at Outfall 001. A review of the historical self report data indicates the average concentration reported for these parameters do not cause any water quality concerns with respect to water quality screening against the Texas Surface Water Quality Standards.
- \* Increase effluent limitations for the following limited parameters at Outfall 001 based on allowances for increases in calculated technology-based effluent limitations (based on increases in plant production rates) and/or calculated water quality-based effluent limitations (based on increases in permitted flows and current critical conditions): carbonaceous biochemical oxygen demand (5-day), total suspended solids, chemical oxygen demand, oil & grease, ammonia (as nitrogen), phenols, sulfides, total chromium, hexavalent chromium, and total dissolved solids (mass limits only).
- \* Increase the size of the irrigation tract from 1376 acres to 1438 acres;
- \* Increase the minimum irrigation area from 341.5 acres to 474 acres;
- \* Increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year. This is supported by the water balance calculations used to evaluate the proposed permit conditions.
- \* Remove the retest provision which requires monitoring for benzene, ethylbenzene, toluene, total xylene, and methyl-tertial-butyl-ether (MTBE) at Outfall 001. This one time requirement is no longer necessary.

Additional changes from the existing permit include the following:

- \* Updated standard permitting language (boiler plate, biomonitoring, and MAL).

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

- \* Replaced the limited parameter "biochemical oxygen demand (5-day)" with "carbonaceous biochemical oxygen demand (5-day)" since ammonia (as nitrogen) is also limited in the permit.

X. DRAFT PERMIT RATIONALE

The following section sets forth the statutory and regulatory requirements considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guidelines and water quality standards.

A. REASON FOR PERMIT ISSUANCE

The applicant has applied to the Texas Commission of Environmental Quality (TCEQ) for a major amendment to Permit No. WQ0001353000 to increase the daily average permitted flow at Outfall 001 from 800,000 gallons per day to 1,500,000 gallons per day; increase the daily maximum permitted flow at Outfall 001 from 1,600,000 gallons per day to 3,000,000 gallons per day; increase effluent limitations for all limited parameters at Outfall 001; remove monitoring/reporting requirements for total antimony, total arsenic, total barium, total cadmium, cyanide, total chromium, hexavalent chromium, total copper, total lead, total mercury, total selenium, total silver, and fecal coliform at Outfall 001; increase the size of the irrigation tract from 1376 acres to 1438 acres; increase the minimum irrigation area from 341.5 acres to 474 acres; increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year; and remove the retest provision which requires monitoring for benzene, ethylbenzene, toluene, total xylene, and methyl-tertial-butyl-ether (MTBE) at Outfall 001. The current permit authorizes the discharge of treated process wastewater, utility wastewater, storm water, and treated ground water via Outfall 001 at a daily average flow not to exceed 0.8 million gallons per day; the intermittent flow variable discharge of storm water runoff and plant wash water via Outfall 002; and the disposal of treated process wastewater, utility wastewater, storm water, and treated ground water via irrigation of 1376 acres.

B. WATER QUALITY SUMMARY

The discharge route is to an unnamed ditch, thence to the Nueces/Lower Frio River, Segment No. 2106 of the Nueces River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed ditch. The designated uses for Segment No. 2106 are high aquatic life use, contact recreation, and public water supply. Effluent limitations and/or conditions established in the draft permit are in compliance with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. Additional discussion of the water quality aspects of the draft permit will be found at Section X.D. of this fact sheet.

In accordance with § 307.5 and the TCEQ implementation procedures (January 2003) for the Texas Surface Water Quality Standards, an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Segment 2106, which has been identified as having a high aquatic life use. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The discharge from this permit is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998; October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only considered aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. The permit does not require EPA review with respect to the presence of endangered or threaten species.

Segment No. 2106 is not currently listed on the State's inventory of impaired and threatened waters, [Texas 2002 Clean Water Act Section 303(d) List, Texas Commission on Environmental Quality, February 2005].

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS1. GENERAL COMMENTS

Regulations promulgated in Title 40 of the Code of Federal Regulations require technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, and/or on best professional judgment (BPJ) in the absence of guidelines.

The proposed draft permit authorizes the discharge of treated process wastewater, utility wastewater (cooling tower blowdown, boiler blowdown, reverse osmosis reject, etc.) miscellaneous waste streams (air pollution control wastewater, deep well backflush, etc.), storm water, and remediated ground water via Outfall 001 at a daily average flow not to exceed 1.5 million gallons per day; the intermittent flow variable discharge of storm water runoff and plant wash water via Outfall 002; and the application of wastewater [including, but not limited to, wastewater (treated, partially treated, and untreated), supplements (fertilizers, maintenance chemicals, pesticides, treatment chemicals, etc.), off-spec product, and any other materials and/or substances applied to the irrigation tract sized at 1438 acres.

The discharge of process wastewater via Outfall 001 from this facility is subject to federal effluent limitation guidelines at 40 CFR 419. A new source determination was performed and the discharge of process wastewater is not a new source as defined at 40 CFR § 122.2. Therefore new source performance standards (NSPS) are not required for this discharge.

The discharge of utility wastewater, storm water, and treated ground water via Outfall 001 and storm water and plant wash water via Outfall 002 is not subject to federal effluent limitation guidelines and any technology-based effluent limitations/allocations are based on best professional judgement.

The wastewater system at this facility handles process wastewater, utility wastewater (cooling tower blowdown, boiler blowdown, reverse osmosis reject, etc.) miscellaneous waste streams (air pollution control wastewater, deep well backflush, etc.), storm water, and remediated ground water. Non-process waste streams may or may not be routed

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

through the wastewater treatment plant, depending upon the need for treatment to meet effluent limitations. Three ponds (Ponds 5, 6, and 7) on the plant site are used to store treated effluent, utility wastewater, storm water, sandfilter backflush, and deep well backflush. Wastewaters that are treated are routed through an oil/water separator; thence through a flow equalization tank; thence to either of three dissolved air flotation units; thence through any of three biological treatment units (aeration, clarification, sludge digester); thence to a wastewater storage pond (224 acre-feet of storage). Treated wastewater from the storage pond is typically disposed of by spray irrigation on a minimum of 474 acres of a 1438 acre tract. Alternatively, treated effluent is routed through a sand filter for discharge through Outfall 001. Sanitary wastewater is primarily routed to the City of Three Rivers wastewater treatment plant for treatment and disposal. Sanitary wastewater from several remotely located buildings is disposed of through utilization of two septic tank systems.

2. CALCULATIONS

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit.

Technology-based effluent limitations for flow at Outfall 001 are based on the applicant's requested flow and best professional judgement (BPJ).

Technology-based effluent limitations for chemical oxygen demand, total suspended solids, oil and grease, phenols, sulfides, total chromium, and pH at Outfall 001 are based on EPA categorical guidelines for Petroleum Refining Point Source Category (40 CFR Part 419).

Technology-based effluent limitations for chemical oxygen demand, oil & grease, and pH at Outfall 002 are continued from the existing permit and are based on BPJ.

The following technology-based effluent limitations are proposed in the draft permit:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg</u>	<u>Daily Max</u>
001 - Interim	Flow	1.5 MGD	3.0 MGD
	Chemical Oxygen Demand	4605 lbs/day	8967 lbs/day
	Total Suspended Solids	684 lbs/day	1137 lbs/day
	Oil and Grease	255 lbs/day	456 lbs/day
	Phenols	4.1 lbs/day	8.5 lbs/day
	Sulfides	3.8 lbs/day	8.4 lbs/day
	Chromium, Total	9.9 lbs/day	24 lbs/day
	pH	6.0 S.U. (min)	9.0 S.U.
001 - Final	Flow	1.5 MGD	3.0 MGD
	Chemical Oxygen Demand	5995 lbs/day	11668 lbs/day
	Total Suspended Solids	851 lbs/day	1396 lbs/day
	Oil and Grease	319 lbs/day	575 lbs/day
	Phenols	5.5 lbs/day	11 lbs/day
	Sulfides	5.0 lbs/day	11 lbs/day

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg</u>	<u>Daily Max</u>
001 - Final	Chromium, Total pH	12 lbs/day 6.0 S.U. (min)	29 lbs/day 9.0 S.U.
002	Chemical Oxygen Demand Oil and Grease pH	N/A N/A 6.0 S.U. (min)	150 mg/l 15 mg/l 9.0 S.U.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS1. GENERAL COMMENTS

The Texas Surface Water Quality Standards found at 30 TAC Chapter 307 state that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Implementation of the Texas Commission of Environmental Quality Standards via Permitting" is designed to insure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to insure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

TPDES permits contain technology-based effluent limits reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity data bases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

(2) AQUATIC LIFE CRITERIA(a) SCREENING

Water quality-based effluent limitations are calculated from freshwater aquatic life criteria found in Table 2 of the Texas Surface Water Quality Standards (30 TAC Chapter 307).

There is no mixing zone or zone of initial dilution (ZID) for this discharge directly to an intermittent stream; acute freshwater criteria apply at the end of pipe. Chronic freshwater criteria are applied in the perennial freshwater stream.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% since the 7Q2 of the intermittent stream is 0.0 cfs. This effluent percentage also provides acute protection of aquatic life in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during critical conditions. The estimated dilution for chronic protection of aquatic life is calculated using the final permitted flow of 1.5 MGD and the 7-day, 2-year

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

(7Q2) flow of 32.26 cfs for the Frio River, the perennial stream. The following critical effluent percentages are being used:

Acute Effluent %: 100%  
Chronic Effluent %: 6.71%

Wasteload allocations (WLAs) are calculated using the above estimated effluent percentages, criteria outlined in the Texas Surface Water Quality Standards, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentration which can be discharged, when after mixing in the receiving stream, instream numerical criteria will not be exceeded. From the WLA, a long term average (LTA) is calculated using a log normal probability distribution, a given coefficient of variation (0.6), and a 90th percentile confidence level. The LTA is the long term average effluent concentration for which the WLA will never be exceeded using a selected percentile confidence level. The lower of the two LTAs (acute and chronic) is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12). Assumptions used in deriving the effluent limitations include segment values for hardness, chlorides, pH and Total Suspended Solids (TSS) according to the segment-specific values contained in the TCEQ guidance document, "Implementation of the Texas Commission on Environmental Quality Standards via Permitting." The segment values are 152 mg/l CaCO<sub>3</sub> for hardness, 130 mg/l Chlorides, 7.6 standard units for pH, and 14 mg/l for TSS. For additional details on the calculation of water quality-based effluent limitations, refer to the TCEQ guidance document.

TCEQ practice for determining significant potential is to compare the reported analytical data against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application exceeds 85 percent of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

(b) PERMIT ACTION

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of aquatic life. In cases where a pollutant is monitoring as a requirement of the current, historical self report data is also considered in the screening against calculated water quality-based effluent limitations for the protection of aquatic life.

Reported analytical data submitted in the application for cyanide (free) and selenium (total) at Outfall 001 exceeds 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

In the case of cyanide, the four results submitted included one detectable result of 159 ug/l and three non-detect results of < 20 ug/l. When compared to the historical self report data at Outfall 001 for the parameter, the detectable result appears to be either an analytical anomaly or a statistical outlier. Based on this additional review, no limitations are recommended at this time for cyanide at Outfall 001. The amendment application includes a request to remove the monitoring requirements for cyanide at Outfall 001; based on the review above, it is recommended that monitoring requirements be removed from the draft permit.

In the case of total selenium, there was significant variability in the individual results submitted but all four results were above the screening values (70% & 85%). A review of the historical self report data indicates that of the 26 months that reported discharges in the reporting period of August 2002-September 2005, the reported monthly average values for no months exceed either of the screening values (70% & 85%), the reported daily maximum values for 7 months exceeded the monitoring (70%) screening value, and the reported daily maximum values for 4 months exceeded the limitation (85%) screening value. Under these circumstances it was determined that effluent limitations are not necessary at this time. It has also been determined that the applicant's request to remove monitoring requirements for total selenium cannot be processed at this time.

Reported analytical data in the application for no other parameters exceed 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection, but is less than 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection.

Calculated water quality-based effluent limitations (for aquatic life protection) for hexavalent chromium are more stringent than the calculated technology-based effluent limitations. Water quality-based effluent limitations (for aquatic life protection) for hexavalent chromium are proposed in the draft permit.

The current permit includes effluent limitations for total zinc at Outfall 001. Mass effluent limitations for total zinc were recalculated based on the calculated aquatic life protection concentration limitation and the increased permitted flow of 1.5 MGD.

In addition to requesting removal of monitoring requirements for cyanide and total selenium (as discussed above), the permittee also requested removal of monitoring requirements for total antimony, total arsenic, total barium, total cadmium, total copper, total lead, total silver and fecal coliform from Outfall 001. A review of analytical data submitted in the application and historical self report data indicates that, with the exception of total copper and total silver, this request is justified and has been made in the draft permit. In the case of total silver, a review of the data supports continuing the monitoring requirement for the next term of the permit. In the case of total copper, a review of the historical self report data indicates effluent concentrations are regularly above both screening values (70% & 85%). Based on this review, it is recommended that effluent limitations be included in the draft permit for total copper at Outfall 001.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit for aquatic life protection:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	Hexavalent Chromium	0.169 lbs/day	0.357 lbs/day
	Total Copper (*1)	Report mg/l	Report mg/l
	Total Copper (*2)	0.925 lbs/day	1.96 lbs/day
	Total Zinc	6.65 lbs/day	14.1 lbs/day
	Total Selenium	Report mg/l	Report mg/l
	Total Silver	Report mg/l	Report mg/l

- (\*1) Effective from date of permit issuance and lasting for three (3) years.
- (\*2) Effective three (3) years after permit issuance and lasting until permit expiration.

An interim three-year compliance period is included in the draft permit for total copper at Outfall 001 in accordance with 30 TAC Section 307.2(f).

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for aquatic life protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document - "Implementation of the Texas Commission of Environmental Quality Standards Via Permitting" and EPA's "Technical Support Document For Water Quality-based Toxics Control."

c. DISSOLVED OXYGEN CRITERIA

The following effluent limitations are based on the recommendations from the Water Quality Assessment Team (IOM dated April 27, 2006) for the protection of the dissolved oxygen criteria of the receiving waters. These limitations are more stringent than the required technology-based effluent limitations.

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	CBOD (5-day)	588 lbs/day	1177 lbs/day
		47 mg/l	94 mg/l
	Ammonia as Nitrogen	200 lbs/day	400 lbs/day
		16 mg/l	32 mg/l
	Dissolved Oxygen	4.0 mg/l	N/A

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

3. AQUATIC ORGANISM TOXICITY CRITERIA (48 - HOUR ACUTE)a. SCREENING

The existing permit includes 48-hour freshwater acute biomonitoring requirements at Outfall 001. From December 2002 to August 2004 the permittee has conducted twenty 48-hour acute toxicity tests using both Daphnia pulex and Pimephales promelas with no reported significant toxicity.

There have been no apparent toxicity problems during the current permit term. Analytical data submitted with the application does not indicate violation of any numerical water quality-based effluent limitation for aquatic life protection, therefore minimum 48-hour acute freshwater biomonitoring conditions required for EPA classified major facilities are proposed in the draft permit as outlined below.

b. PERMIT ACTION

The provisions of this section apply to Outfall 001.

Based on information contained in the permit application, TCEQ has determined that there may be pollutants present in the effluent(s) which may have the potential to cause toxic conditions in the receiving stream.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Acute static renewal 48-hour definitive toxicity test using the water flea (Daphnia pulex). The frequency of the testing is once per month.
- ii) Acute static renewal 48-hour definitive toxicity test using the fathead minnow (Pimephales promelas). The frequency of the testing is once per quarter.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition", EPA/600/4-90/027F. The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the state water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body.

c. DILUTION SERIES

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 100% effluent.

The dilution series outlined above was calculated using a 0.75 factor applied to the critical dilution. The critical dilution is the estimated effluent dilution at the edge of the aquatic life mixing zone which is calculated in section X.D.2.a. of this fact sheet.

4. AQUATIC ORGANISM TOXICITY CRITERIA (24 - HOUR ACUTE)a. SCREENING

The existing permit includes 24-hour acute freshwater biomonitoring language for Outfall 001. Minimum 24-hour acute freshwater biomonitoring requirements are proposed in the draft permit as outlined below.

From December 2002 to August 2004 the permittee has conducted five 24-hour acute toxicity tests using both Daphnia pulex and Pimephales promelas with no reported significant toxicity.

b. PERMIT ACTION

24-hour 100% acute biomonitoring tests are required at Outfall(s) 001 at a frequency of once per six months for the life of the permit. This toxicity testing requirement is derived from the information submitted with the application.

The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Acute 24-hour static toxicity test using the water flea (Daphnia pulex). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.
- ii) Acute 24-hour static toxicity test using the fathead minnow (Pimephales promelas). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIA

a. SCREENING

Water quality-based effluent limitations for the protection of human health are calculated using criteria for the consumption of freshwater fish tissue found in Table 3 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). Freshwater fish tissue bioaccumulation criteria are applied for human health protection in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during average flow conditions. The estimated dilution for human health protection is calculated using the final permitted flow of 1.5 MGD and the harmonic mean flow of 38.04 cfs for the Frio River. The following critical effluent percentage is being used:

Human Health Effluent %: 5.75%

Water quality-based effluent limitations for human health protection against the consumption of fish tissue are calculated using the same procedure as outlined for calculation of water quality-based effluent limitations for aquatic life protection. A 99th percentile confidence level in the long term average calculation is used with only one long term average value being calculated.

Significant potential is again determined by comparing reported analytical data against 70 percent and 85 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. In cases where a pollutant is monitored as a requirement of the current permit, historical self report data is also considered in the screening against calculated water quality-based effluent limitations for the protection of human health.

Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection.

The current permit includes effluent limitations for total mercury at Outfall 001. Mass effluent limitations for total mercury were recalculated based on the calculated human health protection limitation and the increased permitted flow of 1.5 MGD.

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit for protection of human health following consumption of freshwater fish tissue.

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	Total Mercury	0.0036 lbs/day	0.0077 lbs/day

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for human health protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document - "Implementation of the Texas Commission of Environmental Quality Standards Via Permitting" and EPA's "Technical Support Document For Water Quality-based Toxics Control."

6. DRINKING WATER SUPPLY PROTECTIONa. SCREENING

Water Quality Segment No. 2106 which receives the discharge(s) from this facility is designated as a public water supply. An identical screening procedure is used to calculate water quality-based effluent limitations and determine the need for effluent limitations or monitoring requirements as outlined in section X.D.5.a of this fact sheet. Criteria used in the calculation of water quality-based effluent limitations for the protection of a drinking water supply are outlined in Table 3 (Water and Fish) of the Texas Surface Water Quality Standards (30 TAC Chapter 307). These criteria are developed from either drinking water maximum contaminant level (MCL) criteria outlined in 30 TAC Chapter 290, or from the combined human health effects of exposure to consumption of fish tissue and ingestion of drinking water.

b. PERMIT ACTION

Criteria in the "Water and Fish" section of Table 3 do not distinguish if the criteria are based on a drinking water standard or the combined effects of ingestion of drinking water and fish tissue. Effluent limitations or monitoring requirements to protect the drinking water supply (and other human health effects) were previously calculated and outlined in section X.D.5.b of this fact sheet.

Please refer to Appendix C of this Fact Sheet for a detailed description of the procedure for screening, calculating, and establishing effluent limitations for total dissolved solids with respect to secondary drinking water standards.

7. TOTAL DISSOLVED SOLIDS, CHLORIDES, & SULFATESa. SCREENING

Water Quality Segment No. 2106 which receives the discharge(s) from this facility has established instream criteria for total dissolved solids, chlorides, and sulfates. Please refer to Appendix C of this Fact Sheet for a detailed description of the procedure for screening and calculating effluent limitations for total dissolved solids, chlorides, and sulfates.

b. PERMIT ACTION

The current TPDES permit contains effluent limitations for total dissolved solids and total chlorides at Outfall 001. Limitations for total dissolved solids and total

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

chlorides were recalculated in Appendix C of this Fact Sheet based on the increased permitted flow requested by the applicant. Based on the screening procedures in Appendix C of this Fact Sheet, no effluent limitations or monitoring requirements for sulfates are necessary at this time.

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	Total Dissolved Solids	3562 mg/l 26,504 lbs/day	5600 mg/l 56,074 lbs/day
001	Chlorides	37,935 lbs/day	80,257 lbs/day

XI. IRRIGATION REQUIREMENTS

See Appendix D of this fact sheet for irrigation water balance calculations. Since the draft permit authorizes the discharge of the same wastewaters that are authorized for disposal via irrigation, no storage balance calculations were performed.

XII. PRETREATMENT REQUIREMENTS

This facility is not defined as a publicly owned treatment works (POTW). Pretreatment requirements are not proposed in the draft permit.

XIII. VARIANCE REQUESTS

No variance requests have been received.

XIV. PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application, and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the Executive Director's preliminary decision, as contained in the technical summary or fact sheet, to the Chief Clerk. At that time, Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application. This notice sets a deadline for public comment.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment, and is not a contested case proceeding.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's Response to Comments and Final Decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's Response to Comments and Final Decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the Commission grants a contested case hearing as described above, the Commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the Commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

For additional information about this application contact Michael Sunderlin at (512) 239-4523.

XV. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references.

A. PERMIT(S)

TPDES Permit No. WQ0001353000 issued June 7, 2004 with an effective date of June 7, 2004 and an expiration date of May 1, 2005.

B. APPLICATION

TPDES wastewater permit application received on December 31, 2004. Comment letter dated May 11, 2006.

C. 40 CFR CITATIONS

40 CFR Part 419  
40 CFR Part 122

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

TCEQ IOM from Reynolds (WQ Standards Team) to Industrial Team dated 1/03/2006.

TCEQ IOM from Chadwick/Reynolds (WQ Standards Team) to Industrial Team dated 11/08/2005.

TCEQ IOM from Clayton (WQ Standards Team) to Industrial Team dated 3/03/2005.

TCEQ IOMs from Rudolph (WQ Assessment Team) to Industrial Team dated 3/02/2005 and 4/27/2006.

TCEQ IOM from Smith (WQ Assessment Team) to Industrial Team dated 3/01/2005.

TCEQ IOM from Miller (WQ Standards Team) to Industrial Team dated 2/25/2005.

E. MISCELLANEOUS

Quality Criteria for Water (1986), EPA 440/5-86-001, 5/1/86.

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission of Environmental Quality, December 1996.

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.10 (21 TexReg 9765, 4/30/97).

"Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition," EPA/600/4-90/027F.

"Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

"TCEQ Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits," TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX A

CALCULATION OF TECHNOLOGY-BASED EFFLUENT LIMITATIONS

I. CALCULATE PROCESS WASTEWATER ALLOCATIONS (INTERIM PHASE)

A. DETERMINE PROCESS CONFIGURATION

THROUGHPUT = 90 kbbbl/day

<u>PROCESS</u>	<u>CAPACITY</u> kbbbl/day	<u>CAP RELATIVE</u> <u>TO THRU-PUT</u>	<u>WEIGHT</u> <u>FACTOR</u>	<u>PROCESS</u> <u>CONFIG</u>
<b>CRUDE</b>				
Atm Dist:	90	1		
Vac Dist:	35	0.39		
Desalting:	90	<u>1</u>		
		2.39	X	1 = 2.39
<b>CRACKING &amp; COKING</b>				
Fluid Cat Crack:	24	0.27		
Vis-breaking:	0	0		
Thermal Crack:	0	0		
Moving Bed Cat Crack:	0	0		
Hydrocracking:	30	0.33		
Fluid Coking:	0	<u>0</u>		
		0.60	X	6 = 3.6
<b>ASPHALT</b>				
Asphalt Production:	8	0.089		
Asphalt Oxidation:	0	0		
Asphalt Emulsifying:	0	<u>0</u>		
		0.089	X	12 = 1.068
<b>LUBES</b>				
Lube No. 1	2.0	0.022		
Lube No. 2	3.0	0.033		
Lube No. 3	0	0		
Lube No. 4	0	<u>0</u>		
		0.055	X	13 = <u>0.715</u>
				7.773
Size Factor:	0.73			
Process Factor:	0.92			

B. CALCULATE BPT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

Interim (phase 1) limits are calculated by multiplying the guideline by the size factor then by the process factor then by the actual throughput capacity:

EX: TSS Dly Avg = (8.4 lbs/kbbbl/day)\*(0.73)\*(0.92)\*(90 kbbbl/day) = 507 lbs/day

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>POLLUTANT</u>	<u>-----40 CFR 419.52-----</u>		<u>LIMITATIONS (LBS/DAY)</u>	
	<u>D-AVG</u>	<u>D-MAX</u>	<u>D-AVG</u>	<u>D-MAX</u>
BOD5	10.2	19.2	616	1160
TSS	8.4	13	507	785
COD	70	136	4231	8220
Oil & Grease	3.2	6	193	362
Phenolic Cmpds	0.068	0.14	4.11	8.46
Ammonia	3.8	8.3	229	501
Sulfide	0.056	0.124	3.38	7.49
Total Chromium	0.17	0.29	10.2	17.5
Hex Chromium	0.011	0.025	0.664	1.51

BPT limitations for pH are established directly from the guideline as not less than 6.0 S.U. nor greater than 9.0 S.U.

C. CALCULATE BCT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

BCT effluent limitations/allocations for BOD-5, TSS, oil & grease, and pH are identical to the BPT limitations/allocations previously calculated; no further calculations are necessary for these parameters.

D. CALCULATE BAT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

BAT effluent limitations/allocations for COD, ammonia (as N), sulfide and pH are identical to the BPT limitations/allocations previously calculated; no further calculations are necessary for these parameters. BAT effluent limitations/allocations for phenolic compounds, total chromium and hexavalent chromium are calculated as follows:

THROUGHPUTS BY CATEGORY

<u>CRUDE</u>	
Atm Dist:	90
Vac Dist:	35
Desalting:	<u>90</u>
	215
<u>CRACKING &amp; COKING</u>	
Fluid Cat Crack:	24
Hydrocracking:	30
Hydrotreating	<u>55</u>
	99
<u>ASPHALT</u>	
Asphalt Production	<u>8</u>
	8
<u>LUBES</u>	
Hydrofining	2
Lube Vac Twr	<u>3</u>
	5
<u>REFORMING &amp; ALKALATION</u>	
Catalytic Reforming	<u>34</u>
	34

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CALCULATION OF LIMITATIONS

Interim (phase 1) limits are calculated by multiplying the guideline by the design throughput capacity for each category for the specific pollutant:

EX: Total Chromium (Crude) Dly Avg = (0.004 lbs/kbbl/day)\*(215 kbbl/day) = 0.86 lbs/day

and then adding the results for each category of the respective pollutant:

EX: Total Chromium Dly Avg = (0.86 + 4.059 + 0.176 + 0.52 + 1.258) = 6.873 lbs/day

<u>POLLUTANT</u>	40 CFR 419.53		THR-PUT <u>KBBLs</u>	LIMITATIONS	
	<u>AVG</u>	<u>MAX</u>		<u>AVG</u>	<u>MAX</u>
Phenolic Cmpds					
Crude:	0.003	0.013	215	0.645	2.795
Cracking & Coking:	0.036	0.147	99	3.564	14.553
Asphalt:	0.019	0.079	8	0.152	0.632
Lube:	0.09	0.369	5	0.45	1.845
Reforming & Alkylation:	0.032	0.132	34	<u>1.088</u>	<u>4.488</u>
				5.899	24.313
Total Chromium					
Crude:	0.004	0.011	215	0.86	2.365
Cracking & Coking:	0.041	0.119	99	4.059	11.781
Asphalt:	0.022	0.064	8	0.176	0.512
Lube:	0.104	0.299	5	0.52	1.495
Reforming & Alkylation:	0.037	0.107	34	<u>1.258</u>	<u>3.638</u>
				6.873	19.791
Hexavalent Chromium					
Crude:	0.0003	0.0007	215	0.645	1.505
Cracking & Coking:	0.0034	0.0076	99	0.3366	0.7524
Asphalt:	0.0019	0.0041	8	0.0152	0.0328
Lube:	0.0087	0.0192	5	0.0435	0.096
Reforming & Alkylation:	0.0031	0.0069	34	<u>0.1054</u>	<u>0.2346</u>
				1.1457	2.6208

E. SELECT PROCESS WASTEWATER LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

<u>POLLUTANT</u>	LIMITATIONS (LBS/DAY)	
	<u>D-AVG</u>	<u>D-MAX</u>
BOD5	616	1160
TSS	507	785
COD	4231	8220
Oil & Grease	193	362
Phenolic Cmpds	4.11	8.46
Ammonia	229	501
Sulfide	3.38	7.49
Total Chromium	6.873	17.5
Hex Chromium	0.664	1.51
pH	6.0 S.U. (min)	9.0 S.U.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

II. CALCULATE PROCESS WASTEWATER ALLOCATIONS (FINAL PHASE)

A. DETERMINE PROCESS CONFIGURATION

THROUGHPUT = 110 kbbbl/day

<u>PROCESS</u>	<u>CAPACITY</u> kbbbl/day	<u>CAP RELATIVE</u> <u>TO THRU-PUT</u>	<u>WEIGHT</u> <u>FACTOR</u>	<u>PROCESSING</u> <u>CONFIG</u>
<b>CRUDE</b>				
Atm Dist:	110	1		
Vac Dist:	45	0.41		
Desalting:	110	<u>1</u>		
		2.41	X 1	= 2.41
<b>CRACKING &amp; COKING</b>				
Fluid Cat Crack:	28	0.25		
Vis-breaking:	0	0		
Thermal Crack:	0	0		
Moving Bed Cat Crack:	0	0		
Hydrocracking:	35	0.32		
Fluid Coking:	0	<u>0</u>		
		0.57	X 6	= 3.42
<b>ASPHALT</b>				
Asphalt Production:	15	0.136		
Asphalt Oxidation:	0	0		
Asphalt Emulsifying:	0	<u>0</u>		
		0.136	X 12	= 1.632
<b>LUBES</b>				
Lube No. 1	2.5	0.023		
Lube No. 2	3.4	0.031		
Lube No. 3	0	0		
Lube No. 4	0	<u>0</u>		
		0.054	X 13	= <u>0.702</u>
				8.164
Size Factor:	0.73			
Process Factor:	1.0			

B. CALCULATE BPT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

Final (phase 2) limits are calculated by multiplying the guideline by the size factor then by the process factor then by the actual throughput capacity:

EX: TSS Dly Avg = (8.4 lbs/kbbbl/day)\*(0.73)\*(1.0)\*(110 kbbbl/day) = 674.52 lbs/day

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>POLLUTANT</u>	<u>-----40 CFR 419.52-----</u>		<u>LIMITATIONS (LBS/DAY)</u>	
	<u>D-AVG</u>	<u>D-MAX</u>	<u>D-AVG</u>	<u>D-MAX</u>
BOD5	10.2	19.2	819.06	1541.76
TSS	8.4	13	674.52	1043.90
COD	70	136	5621	10920.8
Oil & Grease	3.2	6	256.96	481.8
Phenolic Cmpds	0.068	0.14	5.46	11.24
Ammonia	3.8	8.3	305.14	666.49
Sulfide	0.056	0.124	4.50	9.96
Total Chromium	0.17	0.29	13.65	23.29
Hex Chromium	0.011	0.025	0.88	2.01

BPT limitations for pH are established directly from the guideline as not less than 6.0 S.U. nor greater than 9.0 S.U.

C. CALCULATE BCT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

BCT effluent limitations/allocations for BOD-5, TSS, oil & grease, and pH are identical to the BPT limitations/allocations previously calculated; no further calculations are necessary for these parameters.

D. CALCULATE BAT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

BAT effluent limitations/allocations for COD, ammonia (as N), sulfide and pH are identical to the BPT limitations/allocations previously calculated; no further calculations are necessary for these parameters. BAT effluent limitations/allocations for phenolic compounds, total chromium and hexavalent chromium are calculated as follows:

## THROUGHPUTS BY CATEGORY

CRUDE	
Atm Dist:	110
Vac Dist:	45
Desalting:	<u>110</u>
	265
CRACKING & COKING	
Fluid Cat Crack:	28
Hydrocracking:	35
Hydrotreating	<u>70</u>
	133
ASPHALT	
Asphalt Production:	<u>15</u>
	15
LUBES	
Hydrofining	2.5
Lube Vac Twr	<u>3.4</u>
	5.9
REFORMING & ALKALATION	
Catalytic Reforming	<u>36</u>
	36

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CALCULATION OF LIMITATIONS

Final (phase 2) limits are calculated by multiplying the guideline by the design throughput capacity for each category for the specific pollutant:

EX: Total Chromium (Crude) Dly Avg = (0.004 lbs/kbbl/day)\*(265 kbbl/day) = 1.06 lbs/day

and then adding the results for each category of the respective pollutant:

EX: Total Chromium Dly Avg = (1.06 + 5.453 + 0.330 + 0.614 + 1.332) = 8.789 lbs/day

<u>POLLUTANT</u>	<u>40 CFR 419.53</u>		<u>THR-PUT</u> <u>KBBLs</u>	<u>LIMITS (LBS/DAY)</u>	
	<u>AVG</u>	<u>MAX</u>		<u>AVG</u>	<u>MAX</u>
Phenolic Cmpds					
Crude:	0.003	0.013	265	0.795	3.445
Cracking & Coking:	0.036	0.147	133	4.788	19.551
Asphalt:	0.019	0.079	15	0.285	1.185
Lube:	0.090	0.369	5.9	0.531	2.177
Reforming & Alkylation:	0.032	0.132	36	<u>1.152</u>	<u>4.752</u>
				7.551	31.11
Total Chromium					
Crude:	0.004	0.011	265	1.06	2.915
Cracking & Coking:	0.041	0.119	133	5.453	15.827
Asphalt:	0.022	0.064	15	0.330	0.960
Lube:	0.104	0.299	5.9	0.614	1.764
Reforming & Alkylation:	0.037	0.107	36	<u>1.332</u>	<u>3.852</u>
				8.789	25.318
Hexavalent Chromium					
Crude:	0.0003	0.0007	265	0.079	0.186
Cracking & Coking:	0.0034	0.0076	133	0.452	1.011
Asphalt:	0.0019	0.0041	15	0.028	0.062
Lube:	0.0087	0.0192	5.9	0.051	0.113
Reforming & Alkylation:	0.0031	0.0069	36	<u>0.112</u>	<u>0.248</u>
				0.722	1.620

E. SELECT PROCESS WASTEWATER LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

<u>POLLUTANT</u>	<u>LIMITATIONS (LBS/DAY)</u>	
	<u>D-AVG</u>	<u>D-MAX</u>
BOD5	819	1542
TSS	674	1044
COD	5621	10921
Oil & Grease	257	482
Phenolic Cmpds	5.46	11.2
Ammonia	305	666
Sulfide	4.50	9.96
Total Chromium	13.6	23.3
Hex Chromium	0.722	1.620
pH	6.0 S.U. (min)	9.0 S.U.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## III. CALCULATE NON-PROCESS WASTEWATER ALLOCATIONS (BOTH PHASES)

## A. UTILITY WASTEWATERS

Allocations for utility wastewaters are calculated by multiplying the concentration limit [based on BPJ] by the utility wastewater flow (0.6192 MGD) then by the conversion factor (8.345):

$$\text{EX: TSS Dly Avg} = (30 \text{ mg/l}) * (0.6192 \text{ MGD}) * (8.345) = 155 \text{ lbs/day}$$

POLLUTANT	LIMITS (mg/l)		LIMITS (LBS/DAY)	
	AVG	MAX	AVG	MAX
BOD5	5	10	25.8	51.7
TSS	30	60	155	310
COD	50	100	258	517
Oil & Grease	10	15	51.6	77.5
Ammonia	0.5	1.0	2.58	5.17
Total Chromium	0.5	1.0	2.58	5.17

## B. PROCESS AREA STORM WATER

Allocations for process area storm water are calculated by multiplying the concentration limit [419.52(e)(2)] by the process area storm water flow (13,000 or 13kgal per day):

$$\text{EX: TSS Dly Avg} = (0.18 \text{ lbs/kgal}) * (13 \text{ kgal/day}) = 2.34 \text{ lbs/day}$$

POLLUTANT	LIMITS (LBS/KGAL)		LIMITS (LBS/DAY)	
	AVG	MAX	AVG	MAX
BOD5	0.22	0.40	2.86	5.2
TSS	0.18	0.28	2.34	3.64
COD	1.5	3.0	19.5	39
Oil & Grease	0.067	0.13	0.871	1.69
Phenolic Cmpds	0.0014	0.0029	0.0182	0.0377
Total Chromium	0.0018	0.0050	0.0234	0.065
Hex Chromium	0.00023	0.00052	0.00299	0.00676

## C. AIR POLLUTION CONTROL &amp; GROUND WATER REMEDIATION (APC/GWR)

Allocations for APC/GWR wastewaters are calculated by multiplying the concentration limit [based on BPJ] by the APC/GWR wastewater flow (0.115 MGD) then by the conversion factor (8.345):

$$\text{EX: TSS Dly Avg} = (20 \text{ mg/l}) * (0.115 \text{ MGD}) * (8.345) = 19.2 \text{ lbs/day}$$

POLLUTANT	LIMITS (mg/l)		LIMITS (LBS/DAY)	
	AVG	MAX	AVG	MAX
BOD5	10	20	9.61	19.2
TSS	20	40	19.2	38.4
COD	100	200	96.1	192
Oil & Grease	10	15	9.61	14.4
Phenolic Cmpds	0.01	0.02	0.00961	0.0192
Ammonia	0.5	1.0	0.481	0.961
Sulfide	0.5	1.0	0.481	0.961
Total Chromium	0.5	1.0	0.481	0.961
Hex Chromium	0.01	0.02	0.00961	0.0192

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

IV. SUMMATIONS - INTERIM PHASE

	-----BOD-5 (lbs/day)-----		-----TSS (lbs/day)-----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	616	1160	507	785
Utility WW	25.8	51.6	155	310
Process Area SW	2.86	5.2	2.34	3.64
APC/GWR	<u>9.61</u>	<u>19.2</u>	<u>19.2</u>	<u>38.4</u>
	654.27	1236	683.54	1137.04

	-----COD (lbs/day)-----		-----O&G (lbs/day)-----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	4231	8220	193	362
Utility WW	258	516	51.6	77.5
Process Area SW	19.5	39	0.871	1.69
APC/GWR	<u>96.1</u>	<u>192</u>	<u>9.61</u>	<u>14.4</u>
	4605.3	8967	255.081	455.59

	--Phenolic Cmpds (lbs/day)--		----Ammonia (lbs/day)----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	4.11	8.46	229	501
Utility WW	-----	-----	2.58	5.16
Process Area SW	0.0182	0.0377	-----	-----
APC/GWR	<u>0.00961</u>	<u>0.0192</u>	<u>0.481</u>	<u>0.961</u>
	4.13781	8.5169	232.061	507.121

	--Sulfide Cmpds (lbs/day)--		--Total Chromium (lbs/day)--	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	3.38	7.49	6.873	17.50
Utility WW	-----	-----	2.58	5.16
Process Area SW	-----	-----	0.0234	0.065
APC/GWR	<u>0.481</u>	<u>0.961</u>	<u>0.481</u>	<u>0.961</u>
	3.861	8.451	9.9574	23.686

	--Hex Chromium (lbs/day)--	
	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	0.664	1.51
Utility WW	-----	-----
Process Area SW	0.00299	0.00676
APC/GWR	<u>0.00961</u>	<u>0.0192</u>
	0.67660	1.53596

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

V. SUMMATIONS - FINAL PHASE

	-----BOD-5 (lbs/day)-----		-----TSS (lbs/day)-----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	819.06	1541.76	674.52	1043.90
Utility WW	25.8	51.6	155	310
Process Area SW	2.86	5.2	2.34	3.64
APC/GWR	<u>9.61</u>	<u>19.2</u>	<u>19.2</u>	<u>38.4</u>
	857.33	1617.76	851.06	1395.94
	-----COD (lbs/day)-----		-----O&G (lbs/day)-----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	5621.0	10920.8	256.96	481.80
Utility WW	258.0	516.0	51.6	77.5
Process Area SW	19.5	39.0	0.871	1.69
APC/GWR	<u>96.1</u>	<u>192.0</u>	<u>9.61</u>	<u>14.4</u>
	5994.6	11667.8	319.041	575.39
	--Phenolic Cmpds (lbs/day)--		----Ammonia (lbs/day)----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	5.46	11.24	305.14	666.49
Utility WW	-----	-----	2.58	5.16
Process Area SW	0.0182	0.0377	-----	-----
APC/GWR	<u>0.00961</u>	<u>0.0192</u>	<u>0.481</u>	<u>0.961</u>
	5.48781	11.2969	308.201	672.611
	--Sulfide Cmpds (lbs/day)--		--Total Chromium (lbs/day)--	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	4.50	9.96	8.789	23.29
Utility WW	-----	-----	2.58	5.16
Process Area SW	-----	-----	0.0234	0.065
APC/GWR	<u>0.481</u>	<u>0.961</u>	<u>0.481</u>	<u>0.961</u>
	4.981	10.921	11.8734	29.476
	--Hex Chromium (lbs/day)--			
	<u>Dly Avg</u>	<u>Dly Max</u>		
Process WW	0.722	1.62		
Utility WW	-----	-----		
Process Area SW	0.00299	0.00676		
APC/GWR	<u>0.00961</u>	<u>0.0192</u>		
	0.7346	1.64596		

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX B

CALCULATION OF WATER QUALITY-BASED EFFLUENT LIMITATIONS

TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER PERENNIAL STREAM/RIVER

The water quality-based effluent limitations demonstrated below are calculated using:

- Table 1, 1997 Texas Surface Water Quality Standards (30 TAC 307) for Aquatic Life
- Table 3, 2000 Texas Surface Water Quality Standards for Human Health
- "Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

**PERMITTEE INFORMATION**

Permittee Name: Diamond Shamrock Refining Company, L.P.  
 TPDES Permit No.: WQ0001353000  
 Outfall No.: 001

**DISCHARGE INFORMATION**

Immediate Receiving Waterbody: Unnamed Ditch  
 Segment No.: 2106  
 TSS: 14  
 pH: 7.6  
 Hardness: 152  
 Chloride: 130  
 Effluent Flow for Aquatic Life (MGD): 1.5  
 Critical Low Flow [7Q2] (cfs) for immediate: 0.00  
 Critical Low Flow [7Q2] (cfs) for perennial: 32.26  
 Percent Effluent for Mixing Zone: 6.71  
 Percent Effluent for Zone of Initial Dilution: 100  
 Effluent Flow for Human Health (MGD): 1.5  
 Harmonic Mean Flow (cfs) for perennial: 38.04  
 Percent Effluent for Human Health: 5.75  
 Public Water Supply Use?: Yes

Stream/River Metal	Intercept (b)	Slope (m)	Partitioning Coefficient (Kpo)	Dissolved Fraction (Cd/Ct)		Water Effects Ratio (WER)	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Arsenic	5.68	-0.73	69715.05	0.51		1	Assumed
Cadmium	6.60	-1.13	201778.70	0.26		1	Assumed
Chromium (Total)	6.52	-0.93	284512.22	0.20		1	Assumed
Chromium (+3)	6.52	-0.93	284512.22	0.20		1	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Copper	6.02	-0.74	148547.47	0.32		1	Assumed
Lead	6.45	-0.80	341269.57	0.17		1	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Nickel	5.69	-0.57	108819.57	0.40		1	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Silver	6.38	-1.03	158302.63	0.31		1	Assumed
Zinc	6.10	-0.70	198477.09	0.26		1	Assumed

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## AQUATIC LIFE

## CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS

Parameter	Acute Standard (ug/L)	Chronic Standard (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3.0	N/A	3.000	N/A	1.719	N/A	2.527	5.346
Aluminum <sup>d</sup>	991	N/A	991.000	N/A	567.843	N/A	834.729	1765.992
Arsenic <sup>d</sup>	360	190	711.36	5594.16	407.61	4307.50	599.19	1267.67
Cadmium <sup>d</sup>	54.030	1.576	206.659	89.807	118.416	69.151	101.652	215.060
Carbaryl	2.0	N/A	2.000	N/A	1.146	N/A	1.685	3.564
Chlordane	2.4	0.0043	2.400	0.064	1.375	0.049	0.073	0.153
Chloropyrifos	0.083	0.041	0.083	0.611	0.048	0.470	0.070	0.148
Chromium (+3) <sup>d</sup>	2446.853	291.651	1.22e+04	2.17e+04	6.99e+03	1.67e+04	1.03e+04	2.17e+04
Chromium (+6) <sup>d</sup>	16	11	16.000	163.902	9.168	126.205	13.477	28.512
Copper <sup>d</sup>	28.477	18.300	87.700	839.747	50.252	646.605	73.871	156.284
Cyanide (free)	45.78	10.69	45.780	159.283	26.232	122.648	38.561	81.581
4,4'-DDT	1.1	0.001	1.100	0.015	0.630	0.011	0.017	0.036
Dementon	N/A	0.1	N/A	1.490	N/A	1.147	1.687	3.568
Dicofol	59.3	19.8	59.300	295.024	33.979	227.168	49.949	105.674
Dieldrin	2.5	0.0019	2.500	0.028	1.433	0.022	0.032	0.068
Diuron	210	70	210.000	1043.013	120.330	803.120	176.885	374.226
Endosulfan (alpha)	0.22	0.056	0.220	0.834	0.126	0.643	0.185	0.392
Endosulfan (beta)	0.22	0.056	0.220	0.834	0.126	0.643	0.185	0.392
Endosulfan sulfate	0.22	0.056	0.220	0.834	0.126	0.643	0.185	0.392
Endrin	0.18	0.0023	0.180	0.034	0.103	0.026	0.039	0.082
Guthion	N/A	0.01	N/A	0.149	N/A	0.115	0.169	0.357
Hptachlor	0.52	0.0038	0.520	0.057	0.298	0.044	0.064	0.136
Hexachlorocyclohexane (Lindane)	2.0	0.08	2.000	1.192	1.146	0.918	1.349	2.855
Lead <sup>d</sup>	139.129	5.422	803.855	466.749	460.609	359.397	528.314	1117.725
Malathion	N/A	0.01	N/A	0.149	N/A	0.115	0.169	0.357
Mercury	2.4	1.3	2.400	19.370	1.375	14.915	2.022	4.277
Methoxychlor	N/A	0.03	N/A	0.447	N/A	0.344	0.506	1.070
Mirex	N/A	0.001	N/A	0.015	N/A	0.011	0.017	0.036
Nickel <sup>d</sup>	2021.112	224.686	5100.22	8448.24	2922.43	6505.14	4295.97	9088.75
Parathion (ethyl)	0.065	0.014	0.065	0.209	0.037	0.161	0.055	0.116
Pentachlorophenol	16.577	0.013	16.577	0.194	9.498	0.149	0.219	0.464
Phenanthrene	30	30	30.000	447.006	17.190	344.194	25.269	53.461
Polychlorinated Biphenyls (PCBs)	2.0	10.465	2.000	155.925	1.146	120.062	1.685	3.564
Selenium	20	5	20.000	74.501	11.460	57.366	16.846	35.641
Silver (free ion)	0.92	N/A	30.944	N/A	17.731	N/A	26.065	55.143
Toxaphene	0.78	0.0002	0.7800	0.0030	0.4469	0.0023	0.0034	0.0071
Tributyltin (TBT)	0.13	0.024	0.130	0.358	0.074	0.275	0.110	0.232
2,4,5-Trichlorophenol	136	64	136.000	953.612	77.928	734.281	114.554	242.356
Zinc <sup>d</sup>	166.856	151.129	630.50	8509.02	361.27	6551.95	531.07	1123.56

## HUMAN HEALTH

## CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS

Parameter	Water and FW Fish FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile	1.28	10.9	22.260	20.702	30.432	64.383
Aldrin	0.00408	0.00426	0.071	0.066	0.097	0.205
Arsenic <sup>d</sup>	50	N/A	1718.208	1597.933	2348.962	4969.573

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Barium <sup>d</sup>	2000	N/A	34781.350	32346.656	47549.584	100598.100
Benzene	5	106	86.953	80.867	118.874	251.495
Benzidine	0.00106	0.00347	0.018	0.017	0.025	0.053
Benzo(a)anthracene	0.099	0.810	1.722	1.601	2.354	4.980
Benzo(a)pyrene	0.099	0.810	1.722	1.601	2.354	4.980
Bis(chloromethyl)ether	0.00462	0.0193	0.080	0.075	0.110	0.232
Cadmium <sup>d</sup>	5	N/A	332.588	309.307	454.681	961.945
Carbon Tetrachloride	3.76	8.4	65.389	60.812	89.393	189.124
Chlordane	0.0210	0.0213	0.365	0.340	0.499	1.056
Chlorobenzene	776	1380	13495.164	12550.502	18449.239	39032.063
Chloroform	100	1292	1739.068	1617.333	2377.479	5029.905
Chromium	100	3320	8666.071	8059.446	11847.386	25064.877
Chrysene	0.417	8.1	7.252	6.744	9.914	20.975
Cresols	3313	13116	57615.307	53582.235	78765.886	166640.752
Cyanide (free)	200	N/A	3478.135	3234.666	4754.958	10059.810
4,4'-DDD	0.0103	0.010	0.179	0.167	0.245	0.518
4,4'-DDE	0.00730	0.007	0.127	0.118	0.174	0.367
4,4'-DDT	0.00730	0.007	0.127	0.118	0.174	0.367
2,4'-D	70	N/A	1217.347	1132.133	1664.235	3520.933
Danitol	0.709	0.721	12.330	11.467	16.856	35.662
Dibromochloromethane	9.20	71.6	159.994	148.795	218.728	462.751
1,2-Dibromoethane	0.014	0.335	0.243	0.226	0.333	0.704
1,3-Dichloropropene (1,3-Dichloropropylene)	22.8	161	396.507	368.752	542.065	1146.818
Dieldrin	0.00171	0.002	0.030	0.028	0.041	0.086
<i>p</i> -Dichlorobenzene	75	N/A	1304.301	1213.000	1783.109	3772.429
1,2-Dichloroethane	5	73.9	86.953	80.867	118.874	251.495
1,1-Dichloroethylene	1.63	5.84	28.347	26.363	38.753	81.987
Dicofol	0.215	0.217	3.739	3.477	5.112	10.814
Dioxins/Furans (TCDD Equivalents)	1.34e-07	1.40e-07	2.33e-06	2.17e-06	3.19e-06	6.74e-06
Endrin	1.27	1.34	22.086	20.540	30.194	63.880
Fluoride	4000	N/A	69562.701	64693.312	95099.168	201196.200
Heptachlor	0.00260	0.00265	0.045	0.042	0.062	0.131
Heptachlor Epoxide	0.159	1.1	2.765	2.572	3.780	7.998
Hexachlorobenzene	0.0194	0.0198	0.337	0.314	0.461	0.976
Hexachlorobutadiene	2.99	3.6	51.998	48.358	71.087	150.394
Hexachlorocyclohexane (alpha)	0.163	0.413	2.835	2.636	3.875	8.199
Hexachlorocyclohexane (beta)	0.570	1.45	9.913	9.219	13.552	28.670
Hexachlorocyclohexane (gamma) (Lindane)	0.2	2.00	3.478	3.235	4.755	10.060
Hexachloroethane	84.2	278	1464.295	1361.794	2001.837	4235.180
Hexachlorophene	0.0531	0.053	0.923	0.859	1.262	2.671
Lead <sup>d</sup>	4.98	25.3	500.387	465.360	684.080	1447.270
Mercury	0.0122	0.0122	0.212	0.197	0.290	0.614
Methoxychlor	2.21	2.22	38.433	35.743	52.542	111.161
Methyl Ethyl Ketone	5.29e+04	9.94e+06	9.20e+05	8.56e+05	1.26e+06	2.66e+06
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	173906.752	161733.279	237747.921	502990.499
Nitrobenzene	37.3	233	648.672	603.265	886.800	1876.155
<i>N</i> -Nitrosodiethylamine	0.0382	7.68	0.664	0.618	0.908	1.921
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	1.84	13.5	31.999	29.759	43.746	92.550
PCB's (Polychlorinated Biphenyls)	0.0013	0.0013	0.023	0.021	0.031	0.065
Pentachlorobenzene	6.10	6.68	106.083	98.657	145.026	306.824
Pentachlorophenol	1.0	135	17.391	16.173	23.775	50.299
Pyridine	88.10	13333	1532.118	1424.870	2094.559	4431.346
Selenium	50	N/A	869.534	808.666	1188.740	2514.952
1,2,4,5-Tetrachlorobenzene	0.241	0.243	4.191	3.898	5.730	12.122

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Tetrachloroethylene	5	323	86.953	80.867	118.874	251.495
Toxaphene	0.005	0.014	0.087	0.081	0.119	0.252
2,4,5-TP (Silvex)	47.0	50.3	817.362	760.146	1117.415	2364.055
2,4,5-Trichlorophenol	953	1069	16573.313	15413.182	22657.377	47934.995
Trichloroethylene	5	612	86.953	80.867	118.874	251.495
1,1,1-Trichloroethane	200	12586	3478.135	3234.666	4754.958	10059.810
TTM (Sum of Trihalomethanes)	100	N/A	1739.068	1617.333	2377.479	5029.905
Vinyl Chloride	2	415	34.781	32.347	47.550	100.598

## CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS

Parameter	70%	85%
<u>Aquatic Life</u>		
Aldrin	1.769	2.148
Aluminum <sup>d</sup>	584.310	709.520
Arsenic <sup>d</sup>	419.432	509.311
Cadmium <sup>d</sup>	71.156	86.404
Carbaryl	1.179	1.432
Chlordane	0.051	0.062
Chloropyrifos	0.049	0.059
Chromium (+3) <sup>d</sup>	7.19e+03	8.73e+03
Chromium (+6) <sup>d</sup>	9.434	11.455
Copper <sup>d</sup>	51.709	62.790
Cyanide (free)	26.993	32.777
4,4'-DDT	0.012	0.014
Dementon	1.181	1.434
Dicofol	34.964	42.457
Dieldrin	0.022	0.027
Diuron	123.820	150.352
Endosulfan (alpha)	0.130	0.158
Endosulfan (beta)	0.130	0.158
Endosulfan sulfate	0.130	0.158
Endrin	0.027	0.033
Guthion	0.118	0.143
Hptachlor	0.045	0.054
Hexachlorocyclohexane (Lindane)	0.944	1.147
Lead <sup>d</sup>	369.819	449.067
Malathion	0.118	0.143
Mercury	1.415	1.718
Methoxychlor	0.354	0.430
Mirex	0.012	0.014
Nickel <sup>d</sup>	3007.178	3651.573
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	0.153	0.186
Phenanthrene	17.689	21.479
Polychlorinated Biphenyls (PCBs)	1.179	1.432
Selenium	11.792	14.319
Silver (free ion)	18.245	22.155
Toxaphene	0.0024	0.0029
Tributyltin (TBT)	0.077	0.093
2,4,5-Trichlorophenol	80.188	97.371
Zinc <sup>d</sup>	371.752	451.413

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Human Health

Acrylonitrile	21.302	25.867
Aldrin	0.068	0.082
Arsenic <sup>d</sup>	1644.274	1996.618
Barium <sup>d</sup>	33284.709	40417.147
Benzene	83.212	101.043
Benzidine	0.018	0.021
Benzo(a)anthracene	1.648	2.001
Benzo(a)pyrene	1.648	2.001
Bis(chloromethyl)ether	0.077	0.093
Cadmium <sup>d</sup>	318.277	386.479
Carbon Tetrachloride	62.575	75.984
Chlordane	0.349	0.424
Chlorobenzene	12914.467	15681.853
Chloroform	1664.235	2020.857
Chromium	8293.170	10070.278
Chrysene	6.940	8.427
Cresols	55136.120	66951.003
Cyanide (free)	3328.471	4041.715
4,4'-DDD	0.171	0.208
4,4'-DDE	0.121	0.148
4,4'-DDT	0.121	0.148
2,4'-D	1164.965	1414.600
Danitol	11.799	14.328
Dibromochloromethane	153.110	185.919
1,2-Dibromoethane	0.233	0.283
1,3-Dichloropropene (1,3-Dichloropropylene)	379.446	460.755
Dieldrin	0.028	0.035
<i>p</i> -Dichlorobenzene	1248.177	1515.643
1,2-Dichloroethane	83.212	101.043
1,1-Dichloroethylene	27.127	32.940
Dicofol	3.578	4.345
Dioxins/Furans (TCDD Equivalent)	2.23e-06	2.71e-06
Endrin	21.136	25.665
Fluoride	66569.418	80834.293
Heptachlor	0.043	0.053
Heptachlor Epoxide	2.646	3.213
Hexachlorobenzene	0.323	0.392
Hexachlorobutadiene	49.761	60.424
Hexachlorocyclohexane (alpha)	2.713	3.294
Hexachlorocyclohexane (beta)	9.486	11.519
Hexachlorocyclohexane (gamma) (Lindane)	3.328	4.042
Hexachloroethane	1401.286	1701.562
Hexachlorophene	0.884	1.073
Lead <sup>d</sup>	478.856	581.468
Mercury	0.203	0.247
Methoxychlor	36.780	44.661
Methyl Ethyl Ketone	8.81e+05	1.07e+06
Nitrate-Nitrogen (as Total Nitrogen)	166423.544	202085.733
Nitrobenzene	620.760	753.780
<i>N</i> -Nitrosodiethylamine	0.636	0.772
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	30.622	37.184

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

PCB's (Polychlorinated Biphenyls)	0.022	0.026
Pentachlorobenzene	101.518	123.272
Pentachlorophenol	16.642	20.209
Pyridine	1466.191	1780.375
Selenium	832.118	1010.429
1,2,4,5-Tetrachlorobenzene	4.011	4.870
Tetrachloroethylene	83.212	101.043
Toxaphene	0.083	0.101
2,4,5-TP (Silvex)	782.191	949.803
2,4,5-Trichlorophenol	15860.164	19258.770
Trichloroethylene	83.212	101.043
1,1,1-Trichloroethane	3328.471	4041.715
TTHM (Sum of Trihalomethanes)	1664.235	2020.857
Vinyl Chloride	33.285	40.417

Mass limitations for select parameters were calculated as follows:

$$([\text{limit ug/l}]/1000) * (1.5 \text{ MGD}) * (8.345) = \text{limit lbs/day}$$

<u>POLLUTANT</u>	<u>D-Avg</u> <u>ug/l</u>	<u>D-Max</u> <u>ug/l</u>	<u>D-Avg</u> <u>lbs/day</u>	<u>D-Max</u> <u>lbs/day</u>
Hexavalent Chromium	13.477	28.512	0.169	0.357
Total Chromium	11847.386	25064.877	148.3	313.7
Total Copper	0.073871	0.156284	0.925	1.96
Total Mercury	0.290	0.614	0.0036	0.0077
Total Zinc	531.07	1123.56	6.65	14.1

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## APPENDIX C

CALCULATION & SCREENING OF EFFLUENT LIMITATIONS FOR  
TOTAL DISSOLVED SOLIDS, CHLORIDES, AND SULFATES

The following procedures are used to evaluate total dissolved solids, chloride, and sulfate loadings in discharges to perennial streams and rivers. Screening procedures and effluent limitations are calculated using the methodology in the document "Procedures to Implement The Texas Water Surface Water Quality Standards" (January 2003) and criteria in the Texas Surface Water Quality Standards (30 TAC §307).

Effluent concentrations are screened using the following formula:

$$C_C \geq (Q_S C_A + Q_E C_{E1}) \div (Q_E + Q_S)$$

Where:

- $C_C$  = Segment criterion
- $Q_S$  = Harmonic mean flow of the first perennial downstream waterbody
- $C_A$  = Ambient concentration
- $Q_E$  = Effluent flow
- $C_{E1}$  = Effluent concentration
- $C_{E2}$  = Waste Load Allocation

If the  $C_C$  is greater than or equal to the results of the equation, no further action is required. If the  $C_C$  is less than the result of the equation, effluent limits are calculated and the effluent concentration is compared to the calculated daily average permit limitation. Effluent limitations are required when results of analysis submitted with the permit application exceed 85% of the calculated daily average effluent limitation. Monitoring and reporting requirements are required when results of analysis submitted with the permit application equal to or exceed 70% of the calculated daily average effluent limitation.

Effluent limitations are calculated in the following way:

$$C_{E2} = [C_C(Q_E + Q_S) - (Q_S)(C_A)] \div Q_E$$

Daily Average	=	$[(C_{E2})(0.93)(1.47)] * [\text{Permitted Flow (MGD)}] * [1.57] * [8.345]$
Daily Maximum	=	$[(C_{E2})(0.93))(3.11)] * [\text{Permitted Flow (CFS)}] * [1.57] * [8.345]$

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

*Total Dissolved Solids - aquatic life water quality standard [30 TAC §307.10 Appendix A]*

$C_C =$	500.00	mg/L
$Q_S =$	38.04	cfs
$C_A =$	436.00	mg/L
$Q_E =$	2.32	cfs
$C_{E1} =$	2188.00	mg/L
$C_{E2} =$	1549.38	mg/L

Screening Calculation

Is the  $C_C \geq$  536.71

Effluent Limitations

Daily Average:	2118.16	mg/L	26504.52	lbs/day
Daily Maximum:	4481.27	mg/L	56074.19	lbs/day

The above calculated mass limitations are included in the draft TPDES permit for the protection of the aquatic life water quality standard for total dissolved solids.

Due to the intermittent discharge pattern at the facility, concentration limitations were calculated based on the secondary drinking water standard of 1000 mg/l [30 TAC §290.105(b)] for total dissolved solids, the 7Q2 flow of the receiving water, and the daily maximum permitted flow.

*Total Dissolved Solids - secondary drinking water standard [30 TAC §290.105(b)]*

$C_C =$	1000.00	mg/L
$Q_S =$	32.26	cfs
$C_A =$	436.00	mg/L
$Q_E =$	4.64	cfs
$C_{E1} =$	3562.00	mg/L
$C_{E2} =$	4921.26	mg/L

Screening Calculation

Is the  $C_C \geq$  829.08

Effluent Limitations

Daily Average:	6727.85	mg/L
Daily Maximum:	14233.76	mg/L

The current daily average concentration limitation of 3562 mg/l is more stringent than the above calculated concentration limitations for the protection of the secondary drinking water standard and is continued into the draft permit along with the previously recalculated mass limitations for the protection of the aquatic life water quality standard for total dissolved solids. The current single grab limitation of 5600 mg/l was used as the basis for developing the proposed daily maximum concentration limitation.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

*Chlorides*

$C_C = 250.00 \text{ mg/L}$   
 $Q_S = 38.04 \text{ cfs}$   
 $C_A = 130.00 \text{ mg/L}$   
 $Q_E = 2.32 \text{ cfs}$   
 $C_{E1} = 665.00 \text{ mg/L}$   
 $C_{E2} = 2217.59 \text{ mg/L}$

Screening Calculation

Is the  $C_C \geq 160.75$

Effluent Limitations

Daily Average:	3031.66 mg/L	37935.23 lbs/day
Daily Maximum:	6413.92 mg/L	80257.53 lbs/day

*Sulfate*

$C_C = 250.00 \text{ mg/L}$   
 $Q_S = 38.04 \text{ cfs}$   
 $C_A = 70.00 \text{ mg/L}$   
 $Q_E = 2.32 \text{ cfs}$   
 $C_{E1} = 569.00 \text{ mg/L}$   
 $C_{E2} = 3201.38 \text{ mg/L}$

Screening Calculation

Is the  $C_C \geq 98.68$

Effluent Limitations

Daily Average:	4376.61 mg/L	54764.53 lbs/day
Daily Maximum:	9259.35 mg/L	115862.37 lbs/day

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX D

IRRIGATION WATER BALANCE CALCULATIONS

Facility Name: Diamond Shamrock - Three Rivers

Month	Avg Prec	Avg Runoff	Avg Infiltration Rainfall	Evapo trans	Req Leach	Total Water Needs	Effl Needed Root Zn	Net Evap Res. Ft.	Net Evap. Res. Surf	Effluent Needed Based on Irrigation Efficiency	Consump. from Reserv. (Including Res. Evap.)
January	1.37	0.22	1.15	1.17	0.02	1.19	0.05	0.06	0.01	0.06	0.07
February	1.62	0.35	1.27	1.53	0.26	1.79	0.51	0.08	0.02	0.60	0.62
March	1.19	0.15	1.04	2.88	1.84	4.72	3.68	0.24	0.06	4.33	4.38
April	1.97	0.54	1.43	3.42	1.99	5.41	3.99	0.24	0.06	4.69	4.75
May	3.20	1.40	1.80	6.39	4.59	10.98	9.18	0.17	0.04	10.80	10.84
June	2.77	1.08	1.69	6.03	4.34	10.37	8.68	0.32	0.08	10.21	10.29
July	1.47	0.27	1.20	6.75	5.55	12.30	11.10	0.53	0.13	13.06	13.19
August	2.36	0.79	1.57	4.68	3.11	7.79	6.23	0.41	0.10	7.33	7.42
September	3.27	1.46	1.81	4.68	2.87	7.55	5.73	0.20	0.05	6.74	6.79
October	2.91	1.18	1.73	4.14	2.41	6.55	4.83	0.13	0.03	5.68	5.71
November	1.59	0.33	1.26	2.07	0.81	2.88	1.62	0.11	0.03	1.91	1.93
December	1.39	0.23	1.16	0.99	0.00	0.99	0.00	0.07	0.02	0.00	0.02
<b>Total</b>	<b>25.11</b>	<b>8.01</b>	<b>17.10</b>	<b>44.73</b>	<b>27.80</b>	<b>72.53</b>	<b>55.60</b>	<b>2.56</b>	<b>0.61</b>	<b>65.41</b>	<b>66.02</b>

Crop is	Bermuda	
CN	80.00	
Ce	5.00	
CL	10.00	
POND AREA	9.40	ACRES
POND CAPACITY	211	AC-FEET
IRR. AREA	474.00	ACRES
Irr. Eff., K	0.85	
Design Flow	1.500	MGD
Effluent Avail. Application =	3.54	IN/AC/MONTH
Max. Application Rate =	5.50	Ac-in/ac/month

## WQ STANDARD MAIL LIST

APPLICANT:

LISA TROWBRIDGE

DIAMOND SHAMROCK REFINING CO

PO BOX 490

THREE RIVERS, TX 78071-0490

Other Applicant Representatives:

JAMES MIERTSCHIN

JAMES MERTSCHIN & ASSOCIATES INC

PO BOX 162305

AUSTIN, TX 78716-2305

PERMIT #: WQ0001353000

BASIN:

REGION: 14

COUNTY: LIVE OAK

PERMITTEE:

DIAMOND SHAMROCK REFINING COMPANY LP

TO BE PUBLISHED BY:

LISA TROWBRIDGE

DATE NOTICE MAILED: 12/21/06

CCO #: 46982

NOTICE TECH INITIALS: HMCVEA

LONG NEWS SERVICE  
P O Box 12368  
AUSTIN TX 78711

TEXAS LEGISLATIVE SERVICE  
P O BOX 100  
AUSTIN TX 78767

ENVIRONMENTAL PROTECTION AGENCY  
ATTN: JACK FERGUSON  
CHIEF, PERMIT SECTION  
1445 ROSS AVE  
DALLAS TX 75202-2733

US ENVIRONMENTAL PROTECTION AGENCY  
REGION 6 (only notices with TPDES language)  
ATTENTION: EVELYN ROSBOROUGH (6WQ-CA)  
1445 ROSS AVENUE  
DALLAS TX 75202

ALAN ALLEN EXECUTIVE DIRECTOR  
SPORTSMEN'S CLUBS OF TEXAS INC  
311 VAUGHN BUILDING  
AUSTIN TX 78701

TEXAS CENTER FOR POLICY STUDIES  
ATTN: CYRUS REED & MARY E KELLY  
1002 WEST AVE STE 300  
AUSTIN TX 78701-2051

CITIZENS TO SAVE LAKE WACO  
ATTN WANDA GLAZE PRESIDENT  
178 LEUTWYLER LANE  
WACO TX 76712

NATIONAL WILDLIFE FEDERATION  
ATTN: MYRON J HESS  
44 EAST AVE, STE 200  
AUSTIN TX 78701

CHRISTOPHER BROWN  
WATER PROJECTS ATTORNEY  
NATIONAL WILDLIFE FEDERATION  
44 EAST AVE STE 200  
AUSTIN TX 78701-4385

TEXAS PARKS AND WILDLIFE DEPT  
ATTN: PATRICIA L. RADLOFF  
COASTAL FISHERIES DIVISION - FPP  
4200 SMITH SCHOOL RD  
AUSTIN TX 78744  
INTERAGENCY MAIL

RAILROAD COMMISSION OF TEXAS  
ENVIRONMENTAL SERVICES  
ATTN LELSEY L. SAVAGE DIRECTOR  
INTERAGENCY MAIL

OFFICE OF THE ATTORNEY GENERAL  
NATURAL RESOURCES DIVISION  
ATTN KAREN CORNELL  
INTERAGENCY MAIL

TEXAS HISTORICAL COMMISSION  
ATTN STATE HISTORICAL PRESERVATION  
OFFICER AND STATE ARCHEOLOGIST  
INTERAGENCY MAIL

WATER DEVELOPMENT BOARD  
ATTN JAN BEFFORD  
INTERAGENCY MAIL

TEXAS DEPARTMENT OF AGRICULTURE  
ATTN RICHARD EYSTER  
OFFICE OF RISK ASSESSMENT & TOXICOLOGY  
INTERAGENCY MAIL

TEXAS DEPARTMENT OF HEALTH  
ATTN DR. JOHN VILLANACCI  
INTERAGENCY MAIL (WQ, MSW, IHW)

LYNETTE MARTINEZ, COUNCIL SECRETARY  
COASTAL COORDINATION COUNCIL  
GENERAL LAND OFFICE  
1700 N CONGRESS AVE ROOM 617  
AUSTIN TX 78701-1495  
INTERAGENCY MAIL  
(ONLY NOTICES WITH CMP LANGUAGE)

Attachment B  
Draft Permit



TPDES PERMIT NO. WQ0001353000  
[For TCEQ office use only -  
EPA I.D. No. TX0088331]

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

This permit supersedes and replaces  
TPDES Permit No. WQ0001353000,  
issued on June 7, 2004.

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

Diamond Shamrock Refining Company, L.P.

whose mailing address is

P.O. Box 490  
Three Rivers, Texas 78071-0490

is authorized to treat and discharge wastes from a petroleum refinery (SIC 2911)

located at 301 Leroy Street in the City of Three Rivers, Live Oak County, Texas; with an irrigation (disposal) site located adjacent to the southwest side of Interstate Highway 37, approximately one mile northwest of the intersection of Interstate Highway 37 and State Highway 72, north of the City of Three Rivers, Live Oak County, Texas

discharge is to an unnamed ditch, thence to the Nueces/Lower Frio River in Segment No. 2106 of the Nueces River 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 May 1, 2012.

ISSUED DATE:

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For the Commission

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



AMENDED NOTICE OF APPLICATION AND PRELIMINARY DECISION  
FOR WATER QUALITY TPDES PERMIT AMENDMENT  
FOR INDUSTRIAL WASTEWATER

PERMIT NO. WQ0001353000

**APPLICATION AND PRELIMINARY DECISION.** Diamond Shamrock Refining Company, L.P., P.O. Box 490, Three Rivers, Texas 78071-0490, which operates a petroleum refinery, has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to TPDES Permit No. WQ0001353000 to increase the daily average permitted flow at Outfall 001 from 800,000 gallons per day to 1,500,000 gallons per day; increase the daily maximum permitted flow at Outfall 001 from 1,600,000 gallons per day to 3,000,000 gallons per day; increase effluent limitations for all limited parameters at Outfall 001; remove monitoring/reporting requirements for total antimony, total arsenic, total barium, total cadmium, cyanide, total chromium, hexavalent chromium, total copper, total lead, total mercury, total selenium, total silver, and fecal coliform at Outfall 001; increase the size of the irrigation tract from 1376 acres to 1438 acres; increase the minimum irrigation area from 341.5 acres to 474 acres; increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year; and remove the retest provision which requires monitoring for benzene, ethylbenzene, toluene, total xylene, and methyl-tertiary-butyl-ether (MTBE) at Outfall 001. The current permit authorizes the discharge of treated process wastewater, utility wastewater, storm water, and treated ground water via Outfall 001 at a daily average flow not to exceed 800,000 gallons per day; the intermittent flow variable discharge of storm water runoff and plant wash water via Outfall 002; and the disposal of treated process wastewater, utility wastewater, storm water, and treated ground water via irrigation of 1376 acres. This application was submitted to the TCEQ on December 31, 2004.

The facility is located at 301 Leroy Street in the City of Three Rivers, Live Oak County, Texas; with an irrigation (disposal) site located adjacent to the southwest side of Interstate Highway 37, approximately one mile northwest of the intersection of Interstate Highway 37 and State Highway 72, north of the City of Three Rivers, Live Oak County, Texas. The effluent is discharged to an unnamed ditch, thence to the Nueces/Lower Frio River, in Segment No. 2106 of the Nueces River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed ditch. The designated uses for Segment No. 2106 are high aquatic life use, contact recreation, and public water supply.

In accordance with § 307.5 and the TCEQ implementation procedures (January 2003) for the Texas Surface Water Quality Standards, an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Segment 2106, which has been identified as having a high aquatic life use. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

The TCEQ executive director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The executive director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, executive director's preliminary decision (as contained in the technical summary and/or fact sheet), and draft permit are available for viewing and copying at the Live Oak County Branch Library, 102 East Leroy Street, Three Rivers, Texas.

**PUBLIC COMMENT / PUBLIC MEETING.** You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit written or oral comment or to ask questions about the application. Generally, the TCEQ will hold a public meeting if the executive director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

**Written public comments and requests for a public meeting should be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 within 30 days of the date of newspaper publication of this notice.**

**OPPORTUNITY FOR A CONTESTED CASE HEARING.** After the deadline for public comments, the executive director will consider the comments and prepare a response to all relevant and material, or significant public comments. **The response to comments, along with the executive director's decision on the application, will be mailed to everyone who submitted public comments or who requested to be on a mailing list for this application. If comments are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the executive director's decision.** A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

A contested case hearing will only be granted based on disputed issues of fact that are relevant and material to the Commission's decision on the application. Further, the Commission will only grant a hearing on issues that were raised during the public comment period and not withdrawn. Issues that are not raised in public comments may not be considered during a hearing.

**EXECUTIVE DIRECTOR ACTION.** The executive director may issue final approval of the application unless a timely contested case hearing request or a timely request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the executive director will not issue final approval of the permit and will forward the application and requests to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

**MAILING LISTS.** In addition to submitting public comments, you may ask to be placed on a mailing list to receive future public notices mailed by the Office of the Chief Clerk. You may request to be added to: (1) the mailing list for this specific application; (2) the permanent mailing list for a specific applicant name and permit number; and/or (3) the permanent mailing list for a specific county. Clearly specify which mailing list(s) to which you wish to be added and send your request to the TCEQ Office of the Chief Clerk at the address above. Unless you otherwise specify, you will be included only on the mailing list for this specific application.

**INFORMATION.** If you need more information about this permit application or the permitting process, please call the TCEQ Office of Public Assistance, Toll Free, at 1-800-687-4040. General information about the TCEQ can be found at our web site at [www.tceq.state.tx.us](http://www.tceq.state.tx.us).

Further information may also be obtained from Diamond Shamrock Refining Company, L.P. at the address stated above or by calling Ms. Lisa Trowbridge at 361-786-8286.

**Issued:** [Faint text regarding the issuance of the document]

[Faint paragraph of text]

*Agenda Caption (save to I:/EVERYONEwq/caption/{"permit number" with no filename extension}:*

**AGENDA CAPTION FOR PERMIT NO. WQ0001353000**

Diamond Shamrock Refining Company, L.P., which operates a petroleum refinery, has applied for a major amendment to TPDES Permit No. WQ0001353000 to increase the daily average permitted flow at Outfall 001 from 800,000 gallons per day to 1,500,000 gallons per day; increase the daily maximum permitted flow at Outfall 001 from 1,600,000 gallons per day to 3,000,000 gallons per day; increase effluent limitations for all limited parameters at Outfall 001; remove monitoring/reporting requirements for total antimony, total arsenic, total barium, total cadmium, cyanide, total chromium, hexavalent chromium, total copper, total lead, total mercury, total selenium, total silver, and fecal coliform at Outfall 001; increase the size of the irrigation tract from 1376 acres to 1438 acres; increase the minimum irrigation area from 341.5 acres to 474 acres; increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year; and remove the retest provision which requires monitoring for benzene, ethylbenzene, toluene, total xylene, and methyl-tertiary-butyl-ether (MTBE) at Outfall 001. The current permit authorizes the discharge of treated process wastewater, utility wastewater, storm water, and treated ground water via Outfall 001 at a daily average flow not to exceed 800,000 gallons per day; the intermittent flow variable discharge of storm water runoff and plant wash water via Outfall 002; and the disposal of treated process wastewater, utility wastewater, storm water, and treated ground water via irrigation of 1376 acres. The facility is located at 301 Leroy Street in the City of Three Rivers, Live Oak County, Texas; with an irrigation (disposal) site located adjacent to the southwest side of Interstate Highway 37, approximately one mile northwest of the intersection of Interstate Highway 37 and State Highway 72, north of the City of Three Rivers, Live Oak County, Texas.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0001353000 (TX0088331) to discharge to water in the state.

Issuing Office: Texas Commission of Environmental Quality  
P.O. Box 13087  
Austin, Texas 78711-3087

Applicant: Diamond Shamrock Refining Company, L.P.  
P.O. Box 490  
Three Rivers, Texas 78071-0490

Prepared By: Michael Sunderlin  
Wastewater Permitting Section (MC-148)  
Water Quality Division  
(512) 239-4523

Date: February 2, 2007 [Revised November 30, 2007 - See Appendix E]

Permit Action: Amendment; TPDES Permit No. WQ0001353000

### I. EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. It is proposed the permit be issued to expire on May 1, 2012 following the requirements of 30 TAC § 305.71.

### II. APPLICANT ACTIVITY

The applicant currently operates a petroleum refinery.

### III. DISCHARGE LOCATION

As described in the application, the plant site is located at 301 Leroy Street in the City of Three Rivers, Live Oak County, Texas; with an irrigation (disposal) site located adjacent to the southwest side of Interstate Highway 37, approximately one mile northwest of the intersection of Interstate Highway 37 and State Highway 72, north of the City of Three Rivers, Live Oak County, Texas. Discharge is to an unnamed ditch, thence to the Nueces/Lower Frio River in Segment No. 2106 of the Nueces River Basin.

### IV. RECEIVING STREAM USES

The unclassified receiving waters have no significant aquatic life use for the unnamed ditch. The designated uses for Segment No. 2106 are high aquatic life use, contact recreation, and public water supply.

### V. STREAM STANDARDS

The general criteria and numerical criteria which make up the stream standards are provided in the Texas Administrative Code (TAC), 30 TAC §§ 307.1 - §307.10, effective April 30, 1997.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the Monthly Effluent Report data for the period of August 2002 through September 2005. The "Average of Daily Avg." values presented in the following table are the average of all daily average values for the reporting period for each parameter. The "Maximum of Daily Max." values presented in the following table are the individual maximum values for the reporting period for each parameter:

## A. Flow

<u>Outfall</u>	<u>Frequency</u>	<u>Average of Daily Avg (MGD)</u>	<u>Maximum of Daily Max (MGD)</u>
001	Intermittent	0.58	1.58

## B. Effluent Characteristics

<u>Outfall</u>	<u>Parameter</u>	<u>Average of Daily Avg.</u>	<u>Maximum of Daily Max.</u>
001	Biochemical Oxygen Demand (5-day)	20.4 lbs/day	166.4 lbs/day
	Total Suspended Solids	7.22 mg/l	59.63 mg/l
	Total Dissolved Solids	35.9 lbs/day	260.79 lbs/day
	Chemical Oxygen Demand	12215 lbs/day	28584 lbs/day
	Oil and Grease	2405 mg/l	4225 mg/l (*1)
	Ammonia (as Nitrogen)	270.6 lbs/day	1098.09 lbs/day
	Cyanide	5.64 lbs/day	33.83 lbs/day
	Total Sulfide	18.2 lbs/day	253.41 lbs/day
	Chloride	< 0.02 mg/l	< 0.02 mg/l
	Total Antimony	0.040 lbs/day	0.30 lbs/day
	Total Arsenic	3217 mg/l	7848 mg/l
	Total Barium	0.0158 mg/l	0.0699 mg/l
	Total Cadmium	0.023 mg/l	0.229 mg/l
	Hexavalent Chromium	0.28 mg/l	0.636 mg/l
	Total Chromium	0.00138 mg/l	0.0035 mg/l
	Total Copper	0.032 lbs/day	0.11 lbs/day
	Total Lead	0.0116 lbs/day	0.08 lbs/day
	Total Mercury	0.098 mg/l	0.284 mg/l
	Total Phenolics	0.0012 mg/l	0.012 mg/l
	Total Selenium	0.00020 lbs/day	0.003 lbs/day
Total Silver	0.095 lbs/day	1.05 lbs/day	
Total Zinc	0.004 mg/l	0.0695 mg/l	
Fecal Coliform	0.0151 mg/l	0.161 mg/l	
pH	0.843 lbs/day	4.56 lbs/day	
	2.15 col/100mls	> 100 col/100mls	
	6.1 S.U. (min)	8.0 S.U.	
002	Chemical Oxygen Demand	N/A	300 mg/l
	Oil and Grease	N/A	8.1 mg/l
	pH	6.3 S.U. (min)	8.2 S.U.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## C. Exceedances of Effluent Limitations

<u>Outfall</u>	<u>Parameter</u>	<u>Months of Daily Avg.</u>	<u>Months of Daily Max.</u>
001	Biochemical Oxygen Demand (5-day)	0	0
	Ammonia (as Nitrogen)	0	2
	Total Zinc	5	2
002	Chemical Oxygen Demand	N/A	1

No permit action was taken based on the exceedances listed above. The exceedances for ammonia (as nitrogen) and biochemical oxygen demand (5-day) at Outfall 001 and chemical oxygen demand at Outfall 002 were isolated excursions and do not indicate any persistent problems. The exceedances for total zinc at Outfall 001 occurred during an eight month period (Nov 2003 - June 2004) which ended at the same time the current permit was amended to allow greater flexibility in the patterns (durations, total annual volume, and days discharge can occur) of discharge from the facility. Since the current monitoring frequency for total zinc at Outfall 001 is 2/week and the permittee now has greater flexibility in managing its discharges, it was determined that no permit action was necessary at this time.

VII. PROPOSED EFFLUENT LIMITATIONS

Final effluent limitations are established in the draft permit as follows:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
001 - Interim	Flow	1.5 MGD	3.0 MGD
	Carbonaceous Biochemical Oxygen Demand (5-day)	588 lbs/day 47 mg/l	1177 lbs/day 94 mg/l
	Chemical Oxygen Demand	4605 lbs/day	8967 lbs/day
	Total Suspended Solids	684 lbs/day	1137 lbs/day
	Oil and Grease	255 lbs/day	456 lbs/day
	Ammonia as Nitrogen	200 lbs/day 16 mg/l	400 lbs/day 32 mg/l
	Phenols	4.1 lbs/day	8.5 lbs/day
	Sulfides	3.8 lbs/day	8.4 lbs/day
	Chromium, Total	9.9 lbs/day	24 lbs/day
	Chromium, Hexavalent	0.169 lbs/day	0.357 lbs/day
	Selenium, Total	Report mg/l	Report mg/l
	Silver, Total	Report mg/l	Report mg/l
	Total Dissolved Solids	23,400 lbs/day	56,074 lbs/day
	Total Dissolved Solids	3562 mg/l	5600 mg/l
	Chlorides	37,935 lbs/day	80,257 lbs/day
	Total Mercury	0.0036 lbs/day	0.0077 lbs/day
	Total Zinc	6.65 lbs/day	14.1 lbs/day
	Total Copper (*1)	Report mg/l	Report mg/l
	Total Copper (*2)	0.925 lbs/day	1.96 lbs/day
	Dissolved Oxygen	4.0 mg/l	N/A
pH	6.0 S.U. (min)	9.0 S.U.	

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
001 - Final	Flow	1.5 MGD	3.0 MGD
	Carbonaceous Biochemical Oxygen Demand (5-day)	588 lbs/day	1177 lbs/day
	Chemical Oxygen Demand	47 mg/l	94 mg/l
	Total Suspended Solids	5995 lbs/day	11668 lbs/day
	Oil and Grease	851 lbs/day	1396 lbs/day
	Ammonia as Nitrogen	319 lbs/day	575 lbs/day
		200 lbs/day	400 lbs/day
		16 mg/l	32 mg/l
	Phenols	5.5 lbs/day	11 lbs/day
	Sulfides	5.0 lbs/day	11 lbs/day
	Chromium, Total	12 lbs/day	29 lbs/day
	Chromium, Hexavalent	0.169 lbs/day	0.357 lbs/day
	Selenium, Total	Report mg/l	Report mg/l
	Silver, Total	Report mg/l	Report mg/l
	Total Dissolved Solids	26,504 lbs/day	56,074 lbs/day
	Total Dissolved Solids	3562 mg/l	5600 mg/l
	Chlorides	90,813 lbs/day	192,128 lbs/day
	Total Mercury	0.0036 lbs/day	0.0077 lbs/day
	Total Zinc	6.65 lbs/day	14.1 lbs/day
	Total Copper (*1)	Report mg/l	Report mg/l
	Total Copper (*2)	0.925 lbs/day	1.96 lbs/day
	Dissolved Oxygen	4.0 mg/l	N/A
	pH	6.0 S.U. (min)	9.0 S.U.
002	Chemical Oxygen Demand	N/A	150 mg/l
	Oil and Grease	N/A	15 mg/l
	pH	6.0 S.U. (min)	9.0 S.U.

(\*1) Effective from date of permit issuance and lasting for three (3) years.

(\*2) Effective three (3) years after permit issuance and lasting until permit expiration.

VIII. SUMMARY OF CHANGES FROM APPLICATION

The applicant has requested an amendment to the existing permit for the changes specified in Section X.A. of this Fact Sheet. The removal of monitoring/reporting requirements for total chromium, hexavalent chromium, total copper, total mercury, total selenium, and total silver at Outfall 001 could not be made as requested.

- \* Total chromium and hexavalent chromium limitations are required by applicable EPA categorical guidelines (40 CFR Part 419).
- \* Total copper exceeded the water quality screening criteria for aquatic life protection and will require that water quality-based effluent limitations be included in the draft permit. Please refer to Section X.D.(2) of this Fact Sheet for further discussion.
- \* Total mercury effluent limitations and monitoring requirements are present in the current TPDES permit. The permit application did not contain a suitable justification to the anti-backsliding regulations [40 CFR Part 122.44(l)] to allow for removal of these requirements.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

- \* Total selenium and total silver monitoring requirements have been continued in the draft permit based on a review of historical self-report data which indicates that the concentration levels in the effluent continue to periodically show up in levels of concern.

Additionally, the following changes are more stringent than the requirements in the current permit.

- \* New daily average concentration limitation for dissolved oxygen at Outfall 001 based on dissolved oxygen protection of the receiving water.

See the next section for additional changes to the existing permit.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

Changes from the existing permit that were requested by the permittee in their amendment application and included in the proposed draft permit consist of the following items:

- \* Increase the daily average permitted flow at Outfall 001 from 800,000 gallons per day to 1,500,000 gallons per day; and increase the daily maximum permitted flow at Outfall 001 from 1,600,000 gallons per day to 3,00,000 gallons per day.
- \* Remove monitoring/reporting requirements for total antimony, total arsenic, total barium, total cadmium, cyanide, total lead, and fecal coliform at Outfall 001. A review of the historical self report data indicates the average concentration reported for these parameters do not cause any water quality concerns with respect to water quality screening against the Texas Surface Water Quality Standards.
- \* Increase effluent limitations for the following limited parameters at Outfall 001 based on allowances for increases in calculated technology-based effluent limitations (based on increases in plant production rates) and/or calculated water quality-based effluent limitations (based on increases in permitted flows and current critical conditions): carbonaceous biochemical oxygen demand (5-day), total suspended solids, chemical oxygen demand, oil & grease, ammonia (as nitrogen), phenols, sulfides, total chromium, hexavalent chromium, and total dissolved solids (mass limits only). [See Appendix E for updated information on total dissolved solids]
- \* Increase the size of the irrigation tract from 1376 acres to 1438 acres;
- \* Increase the minimum irrigation area from 341.5 acres to 474 acres;
- \* Increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year. This is supported by the water balance calculations used to evaluate the proposed permit conditions.
- \* Remove the retest provision which requires monitoring for benzene, ethylbenzene, toluene, total xylene, and methyl-terial-butyl-ether (MTBE) at Outfall 001. This one time requirement is no longer necessary.

Additional changes from the existing permit include the following:

- \* Updated standard permitting language (boiler plate, biomonitoring, and MAL).

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

- \* Replaced the limited parameter "biochemical oxygen demand (5-day)" with "carbonaceous biochemical oxygen demand (5-day)" since ammonia (as nitrogen) is also limited in the permit.

X. DRAFT PERMIT RATIONALE

The following section sets forth the statutory and regulatory requirements considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guidelines and water quality standards.

A. REASON FOR PERMIT ISSUANCE

The applicant has applied to the Texas Commission of Environmental Quality (TCEQ) for a major amendment to Permit No. WQ0001353000 to increase the daily average permitted flow at Outfall 001 from 800,000 gallons per day to 1,500,000 gallons per day; increase the daily maximum permitted flow at Outfall 001 from 1,600,000 gallons per day to 3,000,000 gallons per day; increase effluent limitations for all limited parameters at Outfall 001; remove monitoring/reporting requirements for total antimony, total arsenic, total barium, total cadmium, cyanide, total chromium, hexavalent chromium, total copper, total lead, total mercury, total selenium, total silver, and fecal coliform at Outfall 001; increase the size of the irrigation tract from 1376 acres to 1438 acres; increase the minimum irrigation area from 341.5 acres to 474 acres; increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year; and remove the retest provision which requires monitoring for benzene, ethylbenzene, toluene, total xylene, and methyl-tertial-butyl-ether (MTBE) at Outfall 001. The current permit authorizes the discharge of treated process wastewater, utility wastewater, storm water, and treated ground water via Outfall 001 at a daily average flow not to exceed 0.8 million gallons per day; the intermittent flow variable discharge of storm water runoff and plant wash water via Outfall 002; and the disposal of treated process wastewater, utility wastewater, storm water, and treated ground water via irrigation of 1376 acres.

B. WATER QUALITY SUMMARY

The discharge route is to an unnamed ditch, thence to the Nueces/Lower Frio River, Segment No. 2106 of the Nueces River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed ditch. The designated uses for Segment No. 2106 are high aquatic life use, contact recreation, and public water supply. Effluent limitations and/or conditions established in the draft permit are in compliance with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. Additional discussion of the water quality aspects of the draft permit will be found at Section X.D. of this fact sheet.

In accordance with § 307.5 and the TCEQ implementation procedures (January 2003) for the Texas Surface Water Quality Standards, an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Segment 2106, which has been identified as having a high aquatic life use. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The discharge from this permit is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998; October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only considered aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. The permit does not require EPA review with respect to the presence of endangered or threaten species.

Segment No. 2106 is not currently listed on the State's inventory of impaired and threatened waters, [Texas 2002 Clean Water Act Section 303(d) List, Texas Commission on Environmental Quality, February 2005].

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS1. GENERAL COMMENTS

Regulations promulgated in Title 40 of the Code of Federal Regulations require technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, and/or on best professional judgment (BPJ) in the absence of guidelines.

The proposed draft permit authorizes the discharge of treated process wastewater, utility wastewater (cooling tower blowdown, boiler blowdown, reverse osmosis reject, etc.), miscellaneous waste streams (air pollution control wastewater, deep well backflush, etc.), storm water, and remediated ground water via Outfall 001 at a daily average flow not to exceed 1.5 million gallons per day; the intermittent flow variable discharge of storm water runoff and plant wash water via Outfall 002; and the application of wastewater [including, but not limited to, wastewater (treated, partially treated, and untreated), supplements (fertilizers, maintenance chemicals, pesticides, treatment chemicals, etc.), off-spec product, and any other materials and/or substances applied to the irrigation tract sized at 1438 acres.

The discharge of process wastewater via Outfall 001 from this facility is subject to federal effluent limitation guidelines at 40 CFR 419. A new source determination was performed and the discharge of process wastewater is not a new source as defined at 40 CFR § 122.2. Therefore new source performance standards (NSPS) are not required for this discharge.

The discharge of utility wastewater, storm water, and treated ground water via Outfall 001 and storm water and plant wash water via Outfall 002 is not subject to federal effluent limitation guidelines and any technology-based effluent limitations/allocations are based on best professional judgement.

The wastewater system at this facility handles process wastewater, utility wastewater (cooling tower blowdown, boiler blowdown, reverse osmosis reject, etc.) miscellaneous waste streams (air pollution control wastewater, deep well backflush, etc.), storm water, and remediated ground water. Non-process waste streams may or may not be routed

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

through the wastewater treatment plant, depending upon the need for treatment to meet effluent limitations. Three ponds (Ponds 5, 6, and 7) on the plant site are used to store treated effluent, utility wastewater, storm water, sandfilter backflush, and deep well backflush. Wastewaters that are treated are routed through an oil/water separator; thence through a flow equalization tank; thence to either of three dissolved air flotation units; thence through any of three biological treatment units (aeration, clarification, sludge digester); thence to a wastewater storage pond (224 acre-feet of storage). Treated wastewater from the storage pond is typically disposed of by spray irrigation on a minimum of 474 acres of a 1438 acre tract. Alternatively, treated effluent is routed through a sand filter for discharge through Outfall 001. Sanitary wastewater is primarily routed to the City of Three Rivers wastewater treatment plant for treatment and disposal. Sanitary wastewater from several remotely located buildings is disposed of through utilization of two septic tank systems.

2. CALCULATIONS

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit.

Technology-based effluent limitations for flow at Outfall 001 are based on the applicant's requested flow and best professional judgement (BPJ).

Technology-based effluent limitations for chemical oxygen demand, total suspended solids, oil and grease, phenols, sulfides, total chromium, and pH at Outfall 001 are based on EPA categorical guidelines for Petroleum Refining Point Source Category (40 CFR Part 419).

Technology-based effluent limitations for chemical oxygen demand, oil & grease, and pH at Outfall 002 are continued from the existing permit and are based on BPJ.

The following technology-based effluent limitations are proposed in the draft permit:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg</u>	<u>Daily Max</u>
001 - Interim	Flow	1.5 MGD	3.0 MGD
	Chemical Oxygen Demand	4605 lbs/day	8967 lbs/day
	Total Suspended Solids	684 lbs/day	1137 lbs/day
	Oil and Grease	255 lbs/day	456 lbs/day
	Phenols	4.1 lbs/day	8.5 lbs/day
	Sulfides	3.8 lbs/day	8.4 lbs/day
	Chromium, Total	9.9 lbs/day	24 lbs/day
	pH	6.0 S.U. (min)	9.0 S.U.
001 - Final	Flow	1.5 MGD	3.0 MGD
	Chemical Oxygen Demand	5995 lbs/day	11668 lbs/day
	Total Suspended Solids	851 lbs/day	1396 lbs/day
	Oil and Grease	319 lbs/day	575 lbs/day
	Phenols	5.5 lbs/day	11 lbs/day
	Sulfides	5.0 lbs/day	11 lbs/day

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg</u>	<u>Daily Max</u>
001 - Final	Chromium, Total	12 lbs/day	29 lbs/day
	pH	6.0 S.U. (min)	9.0 S.U.
002	Chemical Oxygen Demand	N/A	150 mg/l
	Oil and Grease	N/A	15 mg/l
	pH	6.0 S.U. (min)	9.0 S.U.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

The Texas Surface Water Quality Standards found at 30 TAC Chapter 307 state that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Implementation of the Texas Commission of Environmental Quality Standards via Permitting" is designed to insure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to insure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

TPDES permits contain technology-based effluent limits reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity data bases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

2. AQUATIC LIFE CRITERIA

a. SCREENING

Water quality-based effluent limitations are calculated from freshwater aquatic life criteria found in Table 2 of the Texas Surface Water Quality Standards (30 TAC Chapter 307).

There is no mixing zone or zone of initial dilution (ZID) for this discharge directly to an intermittent stream; acute freshwater criteria apply at the end of pipe. Chronic freshwater criteria are applied in the perennial freshwater stream.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% since the 7Q2 of the intermittent stream is 0.0 cfs. This effluent percentage also provides acute protection of aquatic life in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during critical conditions. The estimated dilution for chronic protection of aquatic life is calculated using the final permitted flow of 1.5 MGD and the 7-day, 2-year

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

(7Q2) flow of 32.26 cfs for the Frio River, the perennial stream. The following critical effluent percentages are being used:

Acute Effluent %: 100%  
Chronic Effluent %: 6.71%

Wasteload allocations (WLAs) are calculated using the above estimated effluent percentages, criteria outlined in the Texas Surface Water Quality Standards, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentration which can be discharged, when after mixing in the receiving stream, instream numerical criteria will not be exceeded. From the WLA, a long term average (LTA) is calculated using a log normal probability distribution, a given coefficient of variation (0.6), and a 90th percentile confidence level. The LTA is the long term average effluent concentration for which the WLA will never be exceeded using a selected percentile confidence level. The lower of the two LTAs (acute and chronic) is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12). Assumptions used in deriving the effluent limitations include segment values for hardness, chlorides, pH and Total Suspended Solids (TSS) according to the segment-specific values contained in the TCEQ guidance document, "Implementation of the Texas Commission on Environmental Quality Standards via Permitting." The segment values are 152 mg/l CaCO<sub>3</sub> for hardness, 130 mg/l Chlorides, 7.6 standard units for pH, and 14 mg/l for TSS. For additional details on the calculation of water quality-based effluent limitations, refer to the TCEQ guidance document.

TCEQ practice for determining significant potential is to compare the reported analytical data against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application exceeds 85 percent of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of aquatic life. In cases where a pollutant is monitoring as a requirement of the current, historical self report data is also considered in the screening against calculated water quality-based effluent limitations for the protection of aquatic life.

Reported analytical data submitted in the application for cyanide (free) and selenium (total) at Outfall 001 exceeds 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

In the case of cyanide, the four results submitted included one detectable result of 159 ug/l and three non-detect results of < 20 ug/l. When compared to the historical self report data at Outfall 001 for the parameter, the detectable result appears to be either an analytical anomaly or a statistical outlier. Based on this additional review, no limitations are recommended at this time for cyanide at Outfall 001. The amendment application includes a request to remove the monitoring requirements for cyanide at Outfall 001; based on the review above, it is recommended that monitoring requirements be removed from the draft permit.

In the case of total selenium, there was significant variability in the individual results submitted but all four results were above the screening values (70% & 85%). A review of the historical self report data indicates that of the 26 months that reported discharges in the reporting period of August 2002-September 2005, the reported monthly average values for no months exceeded either of the screening values (70% & 85%), the reported daily maximum values for 7 months exceeded the monitoring (70%) screening value, and the reported daily maximum values for 4 months exceeded the limitation (85%) screening value. Under these circumstances it was determined that effluent limitations are not necessary at this time. It has also been determined that the applicant's request to remove monitoring requirements for total selenium cannot be processed at this time.

Reported analytical data in the application for no other parameters exceed 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection, but is less than 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection.

Calculated water quality-based effluent limitations (for aquatic life protection) for hexavalent chromium are more stringent than the calculated technology-based effluent limitations. Water quality-based effluent limitations (for aquatic life protection) for hexavalent chromium are proposed in the draft permit.

The current permit includes effluent limitations for total zinc at Outfall 001. Mass effluent limitations for total zinc were recalculated based on the calculated aquatic life protection concentration limitation and the increased permitted flow of 1.5 MGD.

In addition to requesting removal of monitoring requirements for cyanide and total selenium (as discussed above), the permittee also requested removal of monitoring requirements for total antimony, total arsenic, total barium, total cadmium, total copper, total lead, total silver, and fecal coliform from Outfall 001. A review of analytical data submitted in the application and historical self report data indicates that, with the exception of total copper and total silver, this request is justified and has been made in the draft permit. In the case of total silver, a review of the data supports continuing the monitoring requirement for the next term of the permit. In the case of total copper, a review of the historical self report data indicates effluent concentrations are regularly above both screening values (70% & 85%). Based on this review, it is recommended that effluent limitations be included in the draft permit for total copper at Outfall 001.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit for aquatic life protection:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	Hexavalent Chromium	0.169 lbs/day	0.357 lbs/day
	Total Copper (*1)	Report mg/l	Report mg/l
	Total Copper (*2)	0.925 lbs/day	1.96 lbs/day
	Total Zinc	6.65 lbs/day	14.1 lbs/day
	Total Selenium	Report mg/l	Report mg/l
	Total Silver	Report mg/l	Report mg/l

(\*1) Effective from date of permit issuance and lasting for three (3) years.

(\*2) Effective three (3) years after permit issuance and lasting until permit expiration.

An interim three-year compliance period is included in the draft permit for total copper at Outfall 001 in accordance with 30 TAC Section 307.2(f).

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for aquatic life protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document - "Implementation of the Texas Commission of Environmental Quality Standards Via Permitting" and EPA's "Technical Support Document For Water Quality-based Toxics Control."

c. DISSOLVED OXYGEN CRITERIA

The following effluent limitations are based on the recommendations from the Water Quality Assessment Team (IOM dated April 27, 2006) for the protection of the dissolved oxygen criteria of the receiving waters. These limitations are more stringent than the required technology-based effluent limitations.

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	CBOD (5-day)	588 lbs/day	1177 lbs/day
		47 mg/l	94 mg/l
	Ammonia as Nitrogen	200 lbs/day	400 lbs/day
		16 mg/l	32 mg/l
Dissolved Oxygen	4.0 mg/l	N/A	

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

3. AQUATIC ORGANISM TOXICITY CRITERIA (48 - HOUR ACUTE)a. SCREENING

The existing permit includes 48-hour freshwater acute biomonitoring requirements at Outfall 001. From December 2002 to August 2004 the permittee has conducted twenty 48-hour acute toxicity tests using both Daphnia pulex and Pimephales promelas with no reported significant toxicity.

There have been no apparent toxicity problems during the current permit term. Analytical data submitted with the application does not indicate violation of any numerical water quality-based effluent limitation for aquatic life protection, therefore minimum 48-hour acute freshwater biomonitoring conditions required for EPA classified major facilities are proposed in the draft permit as outlined below.

b. PERMIT ACTION

The provisions of this section apply to Outfall 001.

Based on information contained in the permit application, TCEQ has determined that there may be pollutants present in the effluent(s) which may have the potential to cause toxic conditions in the receiving stream.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Acute static renewal 48-hour definitive toxicity test using the water flea (Daphnia pulex). The frequency of the testing is once per month.
- ii) Acute static renewal 48-hour definitive toxicity test using the fathead minnow (Pimephales promelas). The frequency of the testing is once per quarter.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition", EPA/600/4-90/027F. The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the state water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body.

c. DILUTION SERIES

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 100% effluent.

The dilution series outlined above was calculated using a 0.75 factor applied to the critical dilution. The critical dilution is the estimated effluent dilution at the edge of the aquatic life mixing zone which is calculated in section X.D.2.a. of this fact sheet.

4. AQUATIC ORGANISM TOXICITY CRITERIA (24 - HOUR ACUTE)a. SCREENING

The existing permit includes 24-hour acute freshwater biomonitoring language for Outfall 001. Minimum 24-hour acute freshwater biomonitoring requirements are proposed in the draft permit as outlined below.

From December 2002 to August 2004 the permittee has conducted five 24-hour acute toxicity tests using both Daphnia pulex and Pimephales promelas with no reported significant toxicity.

b. PERMIT ACTION

24-hour 100% acute biomonitoring tests are required at Outfall(s) 001 at a frequency of once per six months for the life of the permit. This toxicity testing requirement is derived from the information submitted with the application.

The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Acute 24-hour static toxicity test using the water flea (Daphnia pulex). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.
- ii) Acute 24-hour static toxicity test using the fathead minnow (Pimephales promelas). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIA

a. SCREENING

Water quality-based effluent limitations for the protection of human health are calculated using criteria for the consumption of freshwater fish tissue found in Table 3 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). Freshwater fish tissue bioaccumulation criteria are applied for human health protection in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during average flow conditions. The estimated dilution for human health protection is calculated using the final permitted flow of 1.5 MGD and the harmonic mean flow of 38.04 cfs for the Frio River. The following critical effluent percentage is being used:

Human Health Effluent %: 5.75%

Water quality-based effluent limitations for human health protection against the consumption of fish tissue are calculated using the same procedure as outlined for calculation of water quality-based effluent limitations for aquatic life protection. A 99th percentile confidence level in the long term average calculation is used with only one long term average value being calculated.

Significant potential is again determined by comparing reported analytical data against 70 percent and 85 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. In cases where a pollutant is monitored as a requirement of the current permit, historical self report data is also considered in the screening against calculated water quality-based effluent limitations for the protection of human health.

Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection.

The current permit includes effluent limitations for total mercury at Outfall 001. Mass effluent limitations for total mercury were recalculated based on the calculated human health protection limitation and the increased permitted flow of 1.5 MGD.

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit for protection of human health following consumption of freshwater fish tissue.

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	Total Mercury	0.0036 lbs/day	0.0077 lbs/day

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for human health protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document - "Implementation of the Texas Commission of Environmental Quality Standards Via Permitting" and EPA's "Technical Support Document For Water Quality-based Toxics Control."

6. DRINKING WATER SUPPLY PROTECTIONa. SCREENING

Water Quality Segment No. 2106 which receives the discharge(s) from this facility is designated as a public water supply. An identical screening procedure is used to calculate water quality-based effluent limitations and determine the need for effluent limitations or monitoring requirements as outlined in section X.D.5.a of this fact sheet. Criteria used in the calculation of water quality-based effluent limitations for the protection of a drinking water supply are outlined in Table 3 (Water and Fish) of the Texas Surface Water Quality Standards (30 TAC Chapter 307). These criteria are developed from either drinking water maximum contaminant level (MCL) criteria outlined in 30 TAC Chapter 290, or from the combined human health effects of exposure to consumption of fish tissue and ingestion of drinking water.

b. PERMIT ACTION

Criteria in the "Water and Fish" section of Table 3 do not distinguish if the criteria are based on a drinking water standard or the combined effects of ingestion of drinking water and fish tissue. Effluent limitations or monitoring requirements to protect the drinking water supply (and other human health effects) were previously calculated and outlined in section X.D.5.b of this fact sheet.

Please refer to Appendix C of this Fact Sheet for a detailed description of the procedure for screening, calculating, and establishing effluent limitations for total dissolved solids with respect to secondary drinking water standards.

7. TOTAL DISSOLVED SOLIDS, CHLORIDES, & SULFATESa. SCREENING

Water Quality Segment No. 2106 which receives the discharge(s) from this facility has established instream criteria for total dissolved solids, chlorides, and sulfates. Please refer to Appendix C of this Fact Sheet for a detailed description of the procedure for screening and calculating effluent limitations for total dissolved solids, chlorides, and sulfates.

b. PERMIT ACTION

The current TPDES permit contains effluent limitations for total dissolved solids and total chlorides at Outfall 001. Limitations for total dissolved solids and total

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

chlorides were recalculated in Appendix C of this Fact Sheet based on the increased permitted flow requested by the applicant. Based on the screening procedures in Appendix C of this Fact Sheet, no effluent limitations or monitoring requirements for sulfates are necessary at this time.

See Appendix E for additional information concerning total dissolved solids.

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
001	Total Dissolved Solids	3562 mg/l 23,400 lbs/day	5600 mg/l 56,074 lbs/day
001	Chlorides	37,935 lbs/day	80,257 lbs/day

#### XI. IRRIGATION REQUIREMENTS

See Appendix D of this fact sheet for irrigation water balance calculations. Since the draft permit authorizes the discharge of the same wastewaters that are authorized for disposal via irrigation, no storage balance calculations were performed.

#### XII. PRETREATMENT REQUIREMENTS

This facility is not defined as a publicly owned treatment works (POTW). Pretreatment requirements are not proposed in the draft permit.

#### XIII. VARIANCE REQUESTS

No variance requests have been received.

#### XIV. PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application, and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the Executive Director's preliminary decision, as contained in the technical summary or fact sheet, to the Chief Clerk. At that time, Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application. This notice sets a deadline for public comment.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment, and is not a contested case proceeding.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's Response to Comments and Final Decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's Response to Comments and Final Decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the Commission grants a contested case hearing as described above, the Commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the Commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

For additional information about this application contact Michael Sunderlin at (512) 239-4523.

XV. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references.

A. PERMIT(S)

TPDES Permit No. WQ0001353000 issued June 7, 2004 with an effective date of June 7, 2004 and an expiration date of May 1, 2005.

B. APPLICATION

TPDES wastewater permit application received on December 31, 2004. Comment letter dated May 11, 2006.

C. 40 CFR CITATIONS

40 CFR Part 419  
40 CFR Part 122

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

Letter from Harry Wright Jr. (Valero) dated June 8, 2007.

Letter from Mary Sahs (Sahs & Associates) dated April 30, 2007.

TCEQ IOM from Reynolds (WQ Standards Team) to Industrial Team dated 1/03/2006.

TCEQ IOM from Chadwick/Reynolds (WQ Standards Team) to Industrial Team dated 11/08/2005.

TCEQ IOM from Clayton (WQ Standards Team) to Industrial Team dated 3/03/2005.

TCEQ IOMs from Rudolph (WQ Assessment Team) to Industrial Team dated 3/02/2005 and 4/27/2006.

TCEQ IOM from Smith (WQ Assessment Team) to Industrial Team dated 3/01/2005.

TCEQ IOM from Miller (WQ Standards Team) to Industrial Team dated 2/25/2005.

E. MISCELLANEOUS

Quality Criteria for Water (1986), EPA 440/5-86-001, 5/1/86.

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission of Environmental Quality, December 1996.

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.10 (21 TexReg 9765, 4/30/97).

"Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition," EPA/600/4-90/027F.

"Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

"TCEQ Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits," TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX A

CALCULATION OF TECHNOLOGY-BASED EFFLUENT LIMITATIONS

I. CALCULATE PROCESS WASTEWATER ALLOCATIONS (INTERIM PHASE)

A. DETERMINE PROCESS CONFIGURATION

THROUGHPUT = 90 kbbbl/day

<u>PROCESS</u>	<u>CAPACITY</u> kbbbl/day	<u>CAP RELATIVE</u> <u>TO THRU-PUT</u>	<u>WEIGHT</u> <u>FACTOR</u>	<u>PROCESS</u> <u>CONFIG</u>
<b>CRUDE</b>				
Atm Dist:	90	1		
Vac Dist:	35	0.39		
Desalting:	90	<u>1</u>		
		2.39	X	1 = 2.39
<b>CRACKING &amp; COKING</b>				
Fluid Cat Crack:	24	0.27		
Vis-breaking:	0	0		
Thermal Crack:	0	0		
Moving Bed Cat Crack:	0	0		
Hydrocracking:	30	0.33		
Fluid Coking:	0	<u>0</u>		
		0.60	X	6 = 3.6
<b>ASPHALT</b>				
Asphalt Production:	8	0.089		
Asphalt Oxidation:	0	0		
Asphalt Emulsifying:	0	<u>0</u>		
		0.089	X	12 = 1.068
<b>LUBES</b>				
Lube No. 1	2.0	0.022		
Lube No. 2	3.0	0.033		
Lube No. 3	0	0		
Lube No. 4	0	<u>0</u>		
		0.055	X	13 = <u>0.715</u>
				7.773
Size Factor:	0.73			
Process Factor:	0.92			

B. CALCULATE BPT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

Interim (phase 1) limits are calculated by multiplying the guideline by the size factor then by the process factor then by the actual throughput capacity:

EX: TSS Dly Avg = (8.4 lbs/kbbbl/day)\*(0.73)\*(0.92)\*(90 kbbbl/day) = 507 lbs/day

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>POLLUTANT</u>	<u>-----40 CFR 419.52-----</u>		<u>LIMITATIONS (LBS/DAY)</u>	
	<u>D-AVG</u>	<u>D-MAX</u>	<u>D-AVG</u>	<u>D-MAX</u>
BOD5	10.2	19.2	616	1160
TSS	8.4	13	507	785
COD	70	136	4231	8220
Oil & Grease	3.2	6	193	362
Phenolic Cmpds	0.068	0.14	4.11	8.46
Ammonia	3.8	8.3	229	501
Sulfide	0.056	0.124	3.38	7.49
Total Chromium	0.17	0.29	10.2	17.5
Hex Chromium	0.011	0.025	0.664	1.51

BPT limitations for pH are established directly from the guideline as not less than 6.0 S.U. nor greater than 9.0 S.U.

C. CALCULATE BCT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

BCT effluent limitations/allocations for BOD-5, TSS, oil & grease, and pH are identical to the BPT limitations/allocations previously calculated; no further calculations are necessary for these parameters.

D. CALCULATE BAT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

BAT effluent limitations/allocations for COD, ammonia (as N), sulfide and pH are identical to the BPT limitations/allocations previously calculated; no further calculations are necessary for these parameters. BAT effluent limitations/allocations for phenolic compounds, total chromium and hexavalent chromium are calculated as follows:

THROUGHPUTS BY CATEGORY

<u>CRUDE</u>	
Atm Dist:	90
Vac Dist:	35
Desalting:	<u>90</u>
	215
<u>CRACKING &amp; COKING</u>	
Fluid Cat Crack:	24
Hydrocracking:	30
Hydrotreating	<u>55</u>
	99
<u>ASPHALT</u>	
Asphalt Production	<u>8</u>
	8
<u>LUBES</u>	
Hydrofining	2
Lube Vac Twr	<u>3</u>
	5
<u>REFORMING &amp; ALKALATION</u>	
Catalytic Reforming	<u>34</u>
	34

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## CALCULATION OF LIMITATIONS

Interim (phase 1) limits are calculated by multiplying the guideline by the design throughput capacity for each category for the specific pollutant:

EX: Total Chromium (Crude) Dly Avg =  $(0.004 \text{ lbs/kbbl/day}) \times (215 \text{ kbbl/day}) = 0.86 \text{ lbs/day}$

and then adding the results for each category of the respective pollutant:

EX: Total Chromium Dly Avg =  $(0.86 + 4.059 + 0.176 + 0.52 + 1.258) = 6.873 \text{ lbs/day}$

<u>POLLUTANT</u>	<u>40 CFR 419.53</u>		<u>THR-PUT</u> <u>KBBLs</u>	<u>LIMITATIONS</u>	
	<u>AVG</u>	<u>MAX</u>		<u>AVG</u>	<u>MAX</u>
Phenolic Cmpds					
Crude:	0.003	0.013	215	0.645	2.795
Cracking & Coking:	0.036	0.147	99	3.564	14.553
Asphalt:	0.019	0.079	8	0.152	0.632
Lube:	0.09	0.369	5	0.45	1.845
Reforming & Alkylation:	0.032	0.132	34	<u>1.088</u>	<u>4.488</u>
				5.899	24.313
Total Chromium					
Crude:	0.004	0.011	215	0.86	2.365
Cracking & Coking:	0.041	0.119	99	4.059	11.781
Asphalt:	0.022	0.064	8	0.176	0.512
Lube:	0.104	0.299	5	0.52	1.495
Reforming & Alkylation:	0.037	0.107	34	<u>1.258</u>	<u>3.638</u>
				6.873	19.791
Hexavalent Chromium					
Crude:	0.0003	0.0007	215	0.645	1.505
Cracking & Coking:	0.0034	0.0076	99	0.3366	0.7524
Asphalt:	0.0019	0.0041	8	0.0152	0.0328
Lube:	0.0087	0.0192	5	0.0435	0.096
Reforming & Alkylation:	0.0031	0.0069	34	<u>0.1054</u>	<u>0.2346</u>
				1.1457	2.6208

E. SELECT PROCESS WASTEWATER LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

<u>POLLUTANT</u>	<u>LIMITATIONS (LBS/DAY)</u>	
	<u>D-AVG</u>	<u>D-MAX</u>
BOD5	616	1160
TSS	507	785
COD	4231	8220
Oil & Grease	193	362
Phenolic Cmpds	4.11	8.46
Ammonia	229	501
Sulfide	3.38	7.49
Total Chromium	6.873	17.5
Hex Chromium	0.664	1.51
pH	6.0 S.U. (min)	9.0 S.U.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**II. CALCULATE PROCESS WASTEWATER ALLOCATIONS (FINAL PHASE)**

**A. DETERMINE PROCESS CONFIGURATION**

THROUGHPUT = 110 kbbbl/day

<u>PROCESS</u>	<u>CAPACITY</u> kbbbl/day	<u>CAP RELATIVE</u> <u>TO THRU-PUT</u>	<u>WEIGHT</u> <u>FACTOR</u>	<u>PROCESSING</u> <u>CONFIG</u>
<b>CRUDE</b>				
Atm Dist:	110	1		
Vac Dist:	45	0.41		
Desalting:	110	<u>1</u>		
		2.41	X 1	= 2.41
<b>CRACKING &amp; COKING</b>				
Fluid Cat Crack:	28	0.25		
Vis-breaking:	0	0		
Thermal Crack:	0	0		
Moving Bed Cat Crack:	0	0		
Hydrocracking:	35	0.32		
Fluid Coking:	0	<u>0</u>		
		0.57	X 6	= 3.42
<b>ASPHALT</b>				
Asphalt Production:	15	0.136		
Asphalt Oxidation:	0	0		
Asphalt Emulsifying:	0	<u>0</u>		
		0.136	X 12	= 1.632
<b>LUBES</b>				
Lube No. 1	2.5	0.023		
Lube No. 2	3.4	0.031		
Lube No. 3	0	0		
Lube No. 4	0	<u>0</u>		
		0.054	X 13	= <u>0.702</u>
				8.164
Size Factor:	0.73			
Process Factor:	1.0			

**B. CALCULATE BPT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE**

Final (phase 2) limits are calculated by multiplying the guideline by the size factor then by the process factor then by the actual throughput capacity:

EX: TSS Dly Avg = (8.4 lbs/kbbbl/day)\*(0.73)\*(1.0)\*(110 kbbbl/day) = 674.52 lbs/day

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

POLLUTANT	-----40 CFR 419.52-----		LIMITATIONS (LBS/DAY)	
	D-AVG	D-MAX	D-AVG	D-MAX
BOD5	10.2	19.2	819.06	1541.76
TSS	8.4	13	674.52	1043.90
COD	70	136	5621	10920.8
Oil & Grease	3.2	6	256.96	481.8
Phenolic Cmpds	0.068	0.14	5.46	11.24
Ammonia	3.8	8.3	305.14	666.49
Sulfide	0.056	0.124	4.50	9.96
Total Chromium	0.17	0.29	13.65	23.29
Hex Chromium	0.011	0.025	0.88	2.01

BPT limitations for pH are established directly from the guideline as not less than 6.0 S.U. nor greater than 9.0 S.U.

C. CALCULATE BCT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

BCT effluent limitations/allocations for BOD-5, TSS, oil & grease, and pH are identical to the BPT limitations/allocations previously calculated; no further calculations are necessary for these parameters.

D. CALCULATE BAT LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

BAT effluent limitations/allocations for COD, ammonia (as N), sulfide and pH are identical to the BPT limitations/allocations previously calculated; no further calculations are necessary for these parameters. BAT effluent limitations/allocations for phenolic compounds, total chromium and hexavalent chromium are calculated as follows:

THROUGHPUTS BY CATEGORY

CRUDE	
Atm Dist:	110
Vac Dist:	45
Desalting:	<u>110</u>
	265
CRACKING & COKING	
Fluid Cat Crack:	28
Hydrocracking:	35
Hydrotreating	<u>70</u>
	133
ASPHALT	
Asphalt Production:	<u>15</u>
	15
LUBES	
Hydrofining	2.5
Lube Vac Twr	<u>3.4</u>
	5.9
REFORMING & ALKALATION	
Catalytic Reforming	<u>36</u>
	36

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## CALCULATION OF LIMITATIONS

Final (phase 2) limits are calculated by multiplying the guideline by the design throughput capacity for each category for the specific pollutant:

EX: Total Chromium (Crude) Dly Avg =  $(0.004 \text{ lbs/kbbl/day}) * (265 \text{ kbbl/day}) = 1.06 \text{ lbs/day}$

and then adding the results for each category of the respective pollutant:

EX: Total Chromium Dly Avg =  $(1.06 + 5.453 + 0.330 + 0.614 + 1.332) = 8.789 \text{ lbs/day}$

POLLUTANT	40 CFR 419.53		THR-PUT KBBLS	LIMITS (LBS/DAY)	
	AVG	MAX		AVG	MAX
Phenolic Cmpds					
Crude:	0.003	0.013	265	0.795	3.445
Cracking & Coking:	0.036	0.147	133	4.788	19.551
Asphalt:	0.019	0.079	15	0.285	1.185
Lube:	0.090	0.369	5.9	0.531	2.177
Reforming & Alkylation:	0.032	0.132	36	<u>1.152</u>	<u>4.752</u>
				7.551	31.11
Total Chromium					
Crude:	0.004	0.011	265	1.06	2.915
Cracking & Coking:	0.041	0.119	133	5.453	15.827
Asphalt:	0.022	0.064	15	0.330	0.960
Lube:	0.104	0.299	5.9	0.614	1.764
Reforming & Alkylation:	0.037	0.107	36	<u>1.332</u>	<u>3.852</u>
				8.789	25.318
Hexavalent Chromium					
Crude:	0.0003	0.0007	265	0.079	0.186
Cracking & Coking:	0.0034	0.0076	133	0.452	1.011
Asphalt:	0.0019	0.0041	15	0.028	0.062
Lube:	0.0087	0.0192	5.9	0.051	0.113
Reforming & Alkylation:	0.0031	0.0069	36	<u>0.112</u>	<u>0.248</u>
				0.722	1.620

E. SELECT PROCESS WASTEWATER LIMITATIONS/ALLOCATIONS FOR INTERIM PHASE

POLLUTANT	LIMITATIONS (LBS/DAY)	
	D-AVG	D-MAX
BOD5	819	1542
TSS	674	1044
COD	5621	10921
Oil & Grease	257	482
Phenolic Cmpds	5.46	11.2
Ammonia	305	666
Sulfide	4.50	9.96
Total Chromium	13.6	23.3
Hex Chromium	0.722	1.620
pH	6.0 S.U. (min)	9.0 S.U.

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## III. CALCULATE NON-PROCESS WASTEWATER ALLOCATIONS (BOTH PHASES)

## A. UTILITY WASTEWATERS

Allocations for utility wastewaters are calculated by multiplying the concentration limit [based on BPJ] by the utility wastewater flow (0.6192 MGD) then by the conversion factor (8.345):

$$\text{EX: TSS Dly Avg} = (30 \text{ mg/l}) * (0.6192 \text{ MGD}) * (8.345) = 155 \text{ lbs/day}$$

<u>POLLUTANT</u>	<u>LIMITS (mg/l)</u>		<u>LIMITS (LBS/DAY)</u>	
	<u>AVG</u>	<u>MAX</u>	<u>AVG</u>	<u>MAX</u>
BOD5	5	10	25.8	51.7
TSS	30	60	155	310
COD	50	100	258	517
Oil & Grease	10	15	51.6	77.5
Ammonia	0.5	1.0	2.58	5.17
Total Chromium	0.5	1.0	2.58	5.17

## B. PROCESS AREA STORM WATER

Allocations for process area storm water are calculated by multiplying the concentration limit [419.52(e)(2)] by the process area storm water flow (13,000 or 13kgal per day):

$$\text{EX: TSS Dly Avg} = (0.18 \text{ lbs/kgal}) * (13 \text{ kgal/day}) = 2.34 \text{ lbs/day}$$

<u>POLLUTANT</u>	<u>LIMITS (LBS/KGAL)</u>		<u>LIMITS (LBS/DAY)</u>	
	<u>AVG</u>	<u>MAX</u>	<u>AVG</u>	<u>MAX</u>
BOD5	0.22	0.40	2.86	5.2
TSS	0.18	0.28	2.34	3.64
COD	1.5	3.0	19.5	39
Oil & Grease	0.067	0.13	0.871	1.69
Phenolic Cmpds	0.0014	0.0029	0.0182	0.0377
Total Chromium	0.0018	0.0050	0.0234	0.065
Hex Chromium	0.00023	0.00052	0.00299	0.00676

## C. AIR POLLUTION CONTROL &amp; GROUND WATER REMEDIATION (APC/GWR)

Allocations for APC/GWR wastewaters are calculated by multiplying the concentration limit [based on BPJ] by the APC/GWR wastewater flow (0.115 MGD) then by the conversion factor (8.345):

$$\text{EX: TSS Dly Avg} = (20 \text{ mg/l}) * (0.115 \text{ MGD}) * (8.345) = 19.2 \text{ lbs/day}$$

<u>POLLUTANT</u>	<u>LIMITS (mg/l)</u>		<u>LIMITS (LBS/DAY)</u>	
	<u>AVG</u>	<u>MAX</u>	<u>AVG</u>	<u>MAX</u>
BOD5	10	20	9.61	19.2
TSS	20	40	19.2	38.4
COD	100	200	96.1	192
Oil & Grease	10	15	9.61	14.4
Phenolic Cmpds	0.01	0.02	0.00961	0.0192
Ammonia	0.5	1.0	0.481	0.961
Sulfide	0.5	1.0	0.481	0.961
Total Chromium	0.5	1.0	0.481	0.961
Hex Chromium	0.01	0.02	0.00961	0.0192

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

IV. SUMMATIONS - INTERIM PHASE

	-----BOD-5 (lbs/day)-----		-----TSS (lbs/day)-----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	616	1160	507	785
Utility WW	25.8	51.6	155	310
Process Area SW	2.86	5.2	2.34	3.64
APC/GWR	<u>9.61</u>	<u>19.2</u>	<u>19.2</u>	<u>38.4</u>
	654.27	1236	683.54	1137.04

	-----COD (lbs/day)-----		-----O&G (lbs/day)-----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	4231	8220	193	362
Utility WW	258	516	51.6	77.5
Process Area SW	19.5	39	0.871	1.69
APC/GWR	<u>96.1</u>	<u>192</u>	<u>9.61</u>	<u>14.4</u>
	4605.3	8967	255.081	455.59

	--Phenolic Cmpds (lbs/day)--		----Ammonia (lbs/day)----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	4.11	8.46	229	501
Utility WW	-----	-----	2.58	5.16
Process Area SW	0.0182	0.0377	-----	-----
APC/GWR	<u>0.00961</u>	<u>0.0192</u>	<u>0.481</u>	<u>0.961</u>
	4.13781	8.5169	232.061	507.121

	--Sulfide Cmpds (lbs/day)--		--Total Chromium (lbs/day)--	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	3.38	7.49	6.873	17.50
Utility WW	-----	-----	2.58	5.16
Process Area SW	-----	-----	0.0234	0.065
APC/GWR	<u>0.481</u>	<u>0.961</u>	<u>0.481</u>	<u>0.961</u>
	3.861	8.451	9.9574	23.686

	--Hex Chromium (lbs/day)--	
	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	0.664	1.51
Utility WW	-----	-----
Process Area SW	0.00299	0.00676
APC/GWR	<u>0.00961</u>	<u>0.0192</u>
	0.67660	1.53596

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## V. SUMMATIONS - FINAL PHASE

	-----BOD-5 (lbs/day)-----		-----TSS (lbs/day)-----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	819.06	1541.76	674.52	1043.90
Utility WW	25.8	51.6	155	310
Process Area SW	2.86	5.2	2.34	3.64
APC/GWR	<u>9.61</u>	<u>19.2</u>	<u>19.2</u>	<u>38.4</u>
	857.33	1617.76	851.06	1395.94
	-----COD (lbs/day)-----		-----O&G (lbs/day)-----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	5621.0	10920.8	256.96	481.80
Utility WW	258.0	516.0	51.6	77.5
Process Area SW	19.5	39.0	0.871	1.69
APC/GWR	<u>96.1</u>	<u>192.0</u>	<u>9.61</u>	<u>14.4</u>
	5994.6	11667.8	319.041	575.39
	--Phenolic Cmpds (lbs/day)--		----Ammonia (lbs/day)----	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	5.46	11.24	305.14	666.49
Utility WW	-----	-----	2.58	5.16
Process Area SW	0.0182	0.0377	-----	-----
APC/GWR	<u>0.00961</u>	<u>0.0192</u>	<u>0.481</u>	<u>0.961</u>
	5.48781	11.2969	308.201	672.611
	--Sulfide Cmpds (lbs/day)--		--Total Chromium (lbs/day)--	
	<u>Dly Avg</u>	<u>Dly Max</u>	<u>Dly Avg</u>	<u>Dly Max</u>
Process WW	4.50	9.96	8.789	23.29
Utility WW	-----	-----	2.58	5.16
Process Area SW	-----	-----	0.0234	0.065
APC/GWR	<u>0.481</u>	<u>0.961</u>	<u>0.481</u>	<u>0.961</u>
	4.981	10.921	11.8734	29.476
	--Hex Chromium (lbs/day)--			
	<u>Dly Avg</u>	<u>Dly Max</u>		
Process WW	0.722	1.62		
Utility WW	-----	-----		
Process Area SW	0.00299	0.00676		
APC/GWR	<u>0.00961</u>	<u>0.0192</u>		
	0.7346	1.64596		

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX B

CALCULATION OF WATER QUALITY-BASED EFFLUENT LIMITATIONS

TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER PERENNIAL STREAM/RIVER

The water quality-based effluent limitations demonstrated below are calculated using:

- Table 1, 1997 Texas Surface Water Quality Standards (30 TAC 307) for Aquatic Life
- Table 3, 2000 Texas Surface Water Quality Standards for Human Health
- "Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

PERMITTEE INFORMATION

Permittee Name: Diamond Shamrock Refining Company, L.P.  
 TPDES Permit No.: WQ0001353000  
 Outfall No.: 001

DISCHARGE INFORMATION

Immediate Receiving Waterbody: Unnamed Ditch  
 Segment No.: 2106  
 TSS: 14  
 pH: 7.6  
 Hardness: 152  
 Chloride: 130  
 Effluent Flow for Aquatic Life (MGD): 1.5  
 Critical Low Flow [7Q2] (cfs) for immediate: 0.00  
 Critical Low Flow [7Q2] (cfs) for perennial: 32.26  
 Percent Effluent for Mixing Zone: 6.71  
 Percent Effluent for Zone of Initial Dilution: 100  
 Effluent Flow for Human Health (MGD): 1.5  
 Harmonic Mean Flow (cfs) for perennial: 38.04  
 Percent Effluent for Human Health: 5.75  
 Public Water Supply Use?: Yes

Stream/River Metal	Intercept (b)	Slope (m)	Partitioning Coefficient (Kpo)	Dissolved Fraction (Cd/Ct)		Water Effects Ratio (WER)	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Arsenic	5.68	-0.73	69715.05	0.51		1	Assumed
Cadmium	6.60	-1.13	201778.70	0.26		1	Assumed
Chromium (Total)	6.52	-0.93	284512.22	0.20		1	Assumed
Chromium (+3)	6.52	-0.93	284512.22	0.20		1	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Copper	6.02	-0.74	148547.47	0.32		1	Assumed
Lead	6.45	-0.80	341269.57	0.17		1	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Nickel	5.69	-0.57	108819.57	0.40		1	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Silver	6.38	-1.03	158302.63	0.31		1	Assumed
Zinc	6.10	-0.70	198477.09	0.26		1	Assumed

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## AQUATIC LIFE

## CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS

Parameter	Acute Standard (ug/L)	Chronic Standard (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3.0	N/A	3.000	N/A	1.719	N/A	2.527	5.346
Aluminum <sup>d</sup>	991	N/A	991.000	N/A	567.843	N/A	834.729	1765.992
Arsenic <sup>d</sup>	360	190	711.36	5594.16	407.61	4307.50	599.19	1267.67
Cadmium <sup>d</sup>	54.030	1.576	206.659	89.807	118.416	69.151	101.652	215.060
Carbaryl	2.0	N/A	2.000	N/A	1.146	N/A	1.685	3.564
Chlordane	2.4	0.0043	2.400	0.064	1.375	0.049	0.073	0.153
Chlorpyrifos	0.083	0.041	0.083	0.611	0.048	0.470	0.070	0.148
Chromium (+3) <sup>d</sup>	2446.853	291.651	1.22e+04	2.17e+04	6.99e+03	1.67e+04	1.03e+04	2.17e+04
Chromium (+6) <sup>d</sup>	16	11	16.000	163.902	9.168	126.205	13.477	28.512
Copper <sup>d</sup>	28.477	18.300	87.700	839.747	50.252	646.605	73.871	156.284
Cyanide (free)	45.78	10.69	45.780	159.283	26.232	122.648	38.561	81.581
4,4'-DDT	1.1	0.001	1.100	0.015	0.630	0.011	0.017	0.036
Dementon	N/A	0.1	N/A	1.490	N/A	1.147	1.687	3.568
Dicofol	59.3	19.8	59.300	295.024	33.979	227.168	49.949	105.674
Dieldrin	2.5	0.0019	2.500	0.028	1.433	0.022	0.032	0.068
Diuron	210	70	210.000	1043.013	120.330	803.120	176.885	374.226
Endosulfan (alpha)	0.22	0.056	0.220	0.834	0.126	0.643	0.185	0.392
Endosulfan (beta)	0.22	0.056	0.220	0.834	0.126	0.643	0.185	0.392
Endosulfan sulfate	0.22	0.056	0.220	0.834	0.126	0.643	0.185	0.392
Endrin	0.18	0.0023	0.180	0.034	0.103	0.026	0.039	0.082
Guthion	N/A	0.01	N/A	0.149	N/A	0.115	0.169	0.357
Hptachlor	0.52	0.0038	0.520	0.057	0.298	0.044	0.064	0.136
Hexachlorocyclohexane (Lindane)	2.0	0.08	2.000	1.192	1.146	0.918	1.349	2.855
Lead <sup>d</sup>	139.129	5.422	803.855	466.749	460.609	359.397	528.314	1117.725
Malathion	N/A	0.01	N/A	0.149	N/A	0.115	0.169	0.357
Mercury	2.4	1.3	2.400	19.370	1.375	14.915	2.022	4.277
Methoxychlor	N/A	0.03	N/A	0.447	N/A	0.344	0.506	1.070
Mirex	N/A	0.001	N/A	0.015	N/A	0.011	0.017	0.036
Nickel <sup>d</sup>	2021.112	224.686	5100.22	8448.24	2922.43	6505.14	4295.97	9088.75
Parathion (ethyl)	0.065	0.014	0.065	0.209	0.037	0.161	0.055	0.116
Pentachlorophenol	16.577	0.013	16.577	0.194	9.498	0.149	0.219	0.464
Phenanthrene	30	30	30.000	447.006	17.190	344.194	25.269	53.461
Polychlorinated Biphenyls (PCBs)	2.0	10.465	2.000	155.925	1.146	120.062	1.685	3.564
Selenium	20	5	20.000	74.501	11.460	57.366	16.846	35.641
Silver (free ion)	0.92	N/A	30.944	N/A	17.731	N/A	26.065	55.143
Toxaphene	0.78	0.0002	0.7800	0.0030	0.4469	0.0023	0.0034	0.0071
Tributyltin (TBT)	0.13	0.024	0.130	0.358	0.074	0.275	0.110	0.232
2,4,5-Trichlorophenol	136	64	136.000	953.612	77.928	734.281	114.554	242.356
Zinc <sup>d</sup>	166.856	151.129	630.50	8509.02	361.27	6551.95	531.07	1123.56

## HUMAN HEALTH

## CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile	1.28	10.9	22.260	20.702	30.432	64.383
Aldrin	0.00408	0.00426	0.071	0.066	0.097	0.205
Arsenic <sup>d</sup>	50	N/A	1718.208	1597.933	2348.962	4969.573

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Barium <sup>d</sup>	2000	N/A	34781.350	32346.656	47549.584	100598.100
Benzene	5	106	86.953	80.867	118.874	251.495
Benzidine	0.00106	0.00347	0.018	0.017	0.025	0.053
Benzo(a)anthracene	0.099	0.810	1.722	1.601	2.354	4.980
Benzo(a)pyrene	0.099	0.810	1.722	1.601	2.354	4.980
Bis(chloromethyl)ether	0.00462	0.0193	0.080	0.075	0.110	0.232
Cadmium <sup>d</sup>	5	N/A	332.588	309.307	454.681	961.945
Carbon Tetrachloride	3.76	8.4	65.389	60.812	89.393	189.124
Chlordane	0.0210	0.0213	0.365	0.340	0.499	1.056
Chlorobenzene	776	1380	13495.164	12550.502	18449.239	39032.063
Chloroform	100	1292	1739,068	1617.333	2377.479	5029.905
Chromium	100	3320	8666.071	8059.446	11847.386	25064.877
Chrysene	0.417	8.1	7.252	6.744	9.914	20.975
Cresols	3313	13116	57615.307	53582.235	78765.886	166640.752
Cyanide (free)	200	N/A	3478.135	3234.666	4754.958	10059.810
4,4'-DDD	0.0103	0.010	0.179	0.167	0.245	0.518
4,4'-DDE	0.00730	0.007	0.127	0.118	0.174	0.367
4,4'-DDT	0.00730	0.007	0.127	0.118	0.174	0.367
2,4'-D	70	N/A	1217.347	1132.133	1664.235	3520.933
Danitol	0.709	0.721	12.330	11.467	16.856	35.662
Dibromochloromethane	9.20	71.6	159.994	148.795	218.728	462.751
1,2-Dibromoethane	0.014	0.335	0.243	0.226	0.333	0.704
1,3-Dichloropropene (1,3-Dichloropropylene)	22.8	161	396.507	368.752	542.065	1146.818
Dieldrin	0.00171	0.002	0.030	0.028	0.041	0.086
<i>p</i> -Dichlorobenzene	75	N/A	1304.301	1213.000	1783.109	3772.429
1,2-Dichloroethane	5	73.9	86.953	80.867	118.874	251.495
1,1-Dichloroethylene	1.63	5.84	28.347	26.363	38.753	81.987
Dicofol	0.215	0.217	3.739	3.477	5.112	10.814
Dioxins/Furans (TCDD Equivalentents)	1.34e-07	1.40e-07	2.33e-06	2.17e-06	3.19e-06	6.74e-06
Endrin	1.27	1.34	22.086	20.540	30.194	63.880
Fluoride	4000	N/A	69562.701	64693.312	95099.168	201196.200
Heptachlor	0.00260	0.00265	0.045	0.042	0.062	0.131
Heptachlor Epoxide	0.159	1.1	2.765	2.572	3.780	7.998
Hexachlorobenzene	0.0194	0.0198	0.337	0.314	0.461	0.976
Hexachlorobutadiene	2.99	3.6	51.998	48.358	71.087	150.394
Hexachlorocyclohexane (alpha)	0.163	0.413	2.835	2.636	3.875	8.199
Hexachlorocyclohexane (beta)	0.570	1.45	9.913	9.219	13.552	28.670
Hexachlorocyclohexane (gamma) (Lindane)	0.2	2.00	3.478	3.235	4.755	10.060
Hexachloroethane	84.2	278	1464.295	1361.794	2001.837	4235.180
Hexachlorophene	0.0531	0.053	0.923	0.859	1.262	2.671
Lead <sup>d</sup>	4.98	25.3	500.387	465.360	684.080	1447.270
Mercury	0.0122	0.0122	0.212	0.197	0.290	0.614
Methoxychlor	2.21	2.22	38.433	35.743	52.542	111.161
Methyl Ethyl Ketone	5.29e+04	9.94e+06	9.20e+05	8.56e+05	1.26e+06	2.66e+06
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	173906.752	161733.279	237747.921	502990.499
Nitrobenzene	37.3	233	648.672	603.265	886.800	1876.155
<i>N</i> -Nitrosodiethylamine	0.0382	7.68	0.664	0.618	0.908	1.921
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	1.84	13.5	31.999	29.759	43.746	92.550
PCB's (Polychlorinated Biphenyls)	0.0013	0.0013	0.023	0.021	0.031	0.065
Pentachlorobenzene	6.10	6.68	106.083	98.657	145.026	306.824
Pentachlorophenol	1.0	135	17.391	16.173	23.775	50.299
Pyridine	88.10	13333	1532.118	1424.870	2094.559	4431.346
Selenium	50	N/A	869.534	808.666	1188.740	2514.952
1,2,4,5-Tetrachlorobenzene	0.241	0.243	4.191	3.898	5.730	12.122

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Tetrachloroethylene	5	323	86.953	80.867	118.874	251.495
Toxaphene	0.005	0.014	0.087	0.081	0.119	0.252
2,4,5-TP (Silvex)	47.0	50.3	817.362	760.146	1117.415	2364.055
2,4,5-Trichlorophenol	953	1069	16573.313	15413.182	22657.377	47934.995
Trichloroethylene	5	612	86.953	80.867	118.874	251.495
1,1,1-Trichloroethane	200	12586	3478.135	3234.666	4754.958	10059.810
TTHM (Sum of Trihalomethanes)	100	N/A	1739.068	1617.333	2377.479	5029.905
Vinyl Chloride	2	415	34.781	32.347	47.550	100.598

## CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS

Parameter	70%	85%
<u>Aquatic Life</u>		
Aldrin	1.769	2.148
Aluminum <sup>d</sup>	584.310	709.520
Arsenic <sup>d</sup>	419.432	509.311
Cadmium <sup>d</sup>	71.156	86.404
Carbaryl	1.179	1.432
Chlordane	0.051	0.062
Chlorpyrifos	0.049	0.059
Chromium (+3) <sup>d</sup>	7.19e+03	8.73e+03
Chromium (+6) <sup>d</sup>	9.434	11.455
Copper <sup>d</sup>	51.709	62.790
Cyanide (free)	26.993	32.777
4,4'-DDT	0.012	0.014
Dementon	1.181	1.434
Dicofol	34.964	42.457
Dieldrin	0.022	0.027
Diuron	123.820	150.352
Endosulfan (alpha)	0.130	0.158
Endosulfan (beta)	0.130	0.158
Endosulfan sulfate	0.130	0.158
Endrin	0.027	0.033
Guthion	0.118	0.143
Hptachlor	0.045	0.054
Hexachlorocyclohexane (Lindane)	0.944	1.147
Lead <sup>d</sup>	369.819	449.067
Malathion	0.118	0.143
Mercury	1.415	1.718
Methoxychlor	0.354	0.430
Mirex	0.012	0.014
Nickel <sup>d</sup>	3007.178	3651.573
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	0.153	0.186
Phenanthrene	17.689	21.479
Polychlorinated Biphenyls (PCBs)	1.179	1.432
Selenium	11.792	14.319
Silver (free ion)	18.245	22.155
Toxaphene	0.0024	0.0029
Tributyltin (TBT)	0.077	0.093
2,4,5-Trichlorophenol	80.188	97.371
Zinc <sup>d</sup>	371.752	451.413

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Human Health

Acrylonitrile	21.302	25.867
Aldrin	0.068	0.082
Arsenic <sup>d</sup>	1644.274	1996.618
Barium <sup>d</sup>	33284.709	40417.147
Benzene	83.212	101.043
Benzidine	0.018	0.021
Benzo(a)anthracene	1.648	2.001
Benzo(a)pyrene	1.648	2.001
Bis(chloromethyl)ether	0.077	0.093
Cadmium <sup>d</sup>	318.277	386.479
Carbon Tetrachloride	62.575	75.984
Chlordane	0.349	0.424
Chlorobenzene	12914.467	15681.853
Chloroform	1664.235	2020.857
Chromium	8293.170	10070.278
Chrysene	6.940	8.427
Cresols	55136.120	66951.003
Cyanide (free)	3328.471	4041.715
4,4'-DDD	0.171	0.208
4,4'-DDE	0.121	0.148
4,4'-DDT	0.121	0.148
2,4'-D	1164.965	1414.600
Danitol	11.799	14.328
Dibromochloromethane	153.110	185.919
1,2-Dibromoethane	0.233	0.283
1,3-Dichloropropene (1,3-Dichloropropylene)	379.446	460.755
Dieldrin	0.028	0.035
<i>p</i> -Dichlorobenzene	1248.177	1515.643
1,2-Dichloroethane	83.212	101.043
1,1-Dichloroethylene	27.127	32.940
Dicofol	3.578	4.345
Dioxins/Furans (TCDD Equivalents)	2.23e-06	2.71e-06
Endrin	21.136	25.665
Fluoride	66569.418	80834.293
Heptachlor	0.043	0.053
Heptachlor Epoxide	2.646	3.213
Hexachlorobenzene	0.323	0.392
Hexachlorobutadiene	49.761	60.424
Hexachlorocyclohexane (alpha)	2.713	3.294
Hexachlorocyclohexane (beta)	9.486	11.519
Hexachlorocyclohexane (gamma) (Lindane)	3.328	4.042
Hexachloroethane	1401.286	1701.562
Hexachlorophene	0.884	1.073
Lead <sup>d</sup>	478.856	581.468
Mercury	0.203	0.247
Methoxychlor	36.780	44.661
Methyl Ethyl Ketone	8.81e+05	1.07e+06
Nitrate-Nitrogen (as Total Nitrogen)	166423.544	202085.733
Nitrobenzene	620.760	753.780
<i>N</i> -Nitrosodiethylamine	0.636	0.772
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	30.622	37.184

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

PCB's (Polychlorinated Biphenyls)	0.022	0.026
Pentachlorobenzene	101.518	123.272
Pentachlorophenol	16.642	20.209
Pyridine	1466.191	1780.375
Selenium	832.118	1010.429
1,2,4,5-Tetrachlorobenzene	4.011	4.870
Tetrachloroethylene	83.212	101.043
Toxaphene	0.083	0.101
2,4,5-TP (Silvex)	782.191	949.803
2,4,5-Trichlorophenol	15860.164	19258.770
Trichloroethylene	83.212	101.043
1,1,1-Trichloroethane	3328.471	4041.715
TTHM (Sum of Trihalomethanes)	1664.235	2020.857
Vinyl Chloride	33.285	40.417

Mass limitations for select parameters were calculated as follows:

$$([\text{limit ug/l}]/1000) * (1.5 \text{ MGD}) * (8.345) = \text{limit lbs/day}$$

<u>POLLUTANT</u>	<u>D-Avg</u> <u>ug/l</u>	<u>D-Max</u> <u>ug/l</u>	<u>D-Avg</u> <u>lbs/day</u>	<u>D-Max</u> <u>lbs/day</u>
Hexavalent Chromium	13.477	28.512	0.169	0.357
Total Chromium	11847.386	25064.877	148.3	313.7
Total Copper	0.073871	0.156284	0.925	1.96
Total Mercury	0.290	0.614	0.0036	0.0077
Total Zinc	531.07	1123.56	6.65	14.1

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

## APPENDIX C

CALCULATION & SCREENING OF EFFLUENT LIMITATIONS FOR  
TOTAL DISSOLVED SOLIDS, CHLORIDES, AND SULFATES

The following procedures are used to evaluate total dissolved solids, chloride, and sulfate loadings in discharges to perennial streams and rivers. Screening procedures and effluent limitations are calculated using the methodology in the document "Procedures to Implement The Texas Water Surface Water Quality Standards" (January 2003) and criteria in the Texas Surface Water Quality Standards (30 TAC §307).

Effluent concentrations are screened using the following formula:

$$C_C \geq (Q_S C_A + Q_E C_{E1}) \div (Q_E + Q_S)$$

Where:

- $C_C$  = Segment criterion
- $Q_S$  = Harmonic mean flow of the first perennial downstream waterbody
- $C_A$  = Ambient concentration
- $Q_E$  = Effluent flow
- $C_{E1}$  = Effluent concentration
- $C_{E2}$  = Waste Load Allocation

If the  $C_C$  is greater than or equal to the results of the equation, no further action is required. If the  $C_C$  is less than the result of the equation, effluent limits are calculated and the effluent concentration is compared to the calculated daily average permit limitation. Effluent limitations are required when results of analysis submitted with the permit application exceed 85% of the calculated daily average effluent limitation. Monitoring and reporting requirements are required when results of analysis submitted with the permit application equal to or exceed 70% of the calculated daily average effluent limitation.

Effluent limitations are calculated in the following way:

$$C_{E2} = [C_C(Q_E + Q_S) - (Q_S)(C_A)] \div Q_E$$

Daily Average	=	$[(C_{E2})(0.93)(1.47)] * [\text{Permitted Flow (MGD)}] * [1.57] * [8.345]$
Daily Maximum	=	$[(C_{E2})(0.93))(3.11)] * [\text{Permitted Flow (CFS)}] * [1.57] * [8.345]$

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

***Total Dissolved Solids - aquatic life water quality standard [30 TAC §307.10 Appendix A]***

$C_C =$	500.00	mg/L
$Q_S =$	38.04	cfs
$C_A =$	436.00	mg/L
$Q_E =$	2.32	cfs
$C_{E1} =$	2188.00	mg/L
$C_{E2} =$	1549.38	mg/L

Screening Calculation

Is the  $C_C \geq$  536.71

Effluent Limitations

Daily Average:	2118.16	mg/L	26504.52	lbs/day
Daily Maximum:	4481.27	mg/L	56074.19	lbs/day

The above calculated mass limitations are included in the draft TPDES permit for the protection of the aquatic life water quality standard for total dissolved solids.

Due to the intermittent discharge pattern at the facility, concentration limitations were calculated based on the secondary drinking water standard of 1000 mg/l [30 TAC §290.105(b)] for total dissolved solids, the 7Q2 flow of the receiving water, and the daily maximum permitted flow.

***Total Dissolved Solids - secondary drinking water standard [30 TAC §290.105(b)]***

$C_C =$	1000.00	mg/L
$Q_S =$	32.26	cfs
$C_A =$	436.00	mg/L
$Q_E =$	4.64	cfs
$C_{E1} =$	3562.00	mg/L
$C_{E2} =$	4921.26	mg/L

Screening Calculation

Is the  $C_C \geq$  829.08

Effluent Limitations

Daily Average:	6727.85	mg/L
Daily Maximum:	14233.76	mg/L

The current daily average concentration limitation of 3562 mg/l is more stringent than the above calculated concentration limitations for the protection of the secondary drinking water standard and is continued into the draft permit along with the previously recalculated mass limitations for the protection of the aquatic life water quality standard for total dissolved solids. The current single grab limitation of 5600 mg/l was used as the basis for developing the proposed daily maximum concentration limitation.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**Chlorides**

$C_C = 250.00 \text{ mg/L}$   
 $Q_S = 38.04 \text{ cfs}$   
 $C_A = 130.00 \text{ mg/L}$   
 $Q_B = 2.32 \text{ cfs}$   
 $C_{B1} = 665.00 \text{ mg/L}$   
 $C_{B2} = 2217.59 \text{ mg/L}$

Screening Calculation

Is the  $C_C \geq 160.75$

Effluent Limitations

Daily Average: 3031.66 mg/L      37935.23 lbs/day  
Daily Maximum: 6413.92 mg/L      80257.53 lbs/day

**Sulfate**

$C_C = 250.00 \text{ mg/L}$   
 $Q_S = 38.04 \text{ cfs}$   
 $C_A = 70.00 \text{ mg/L}$   
 $Q_B = 2.32 \text{ cfs}$   
 $C_{B1} = 569.00 \text{ mg/L}$   
 $C_{B2} = 3201.38 \text{ mg/L}$

Screening Calculation

Is the  $C_C \geq 98.68$

Effluent Limitations

Daily Average: 4376.61 mg/L      54764.53 lbs/day  
Daily Maximum: 9259.35 mg/L      115862.37 lbs/day

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX D

IRRIGATION WATER BALANCE CALCULATIONS

Facility Name: Diamond Shamrock - Three Rivers

Month	Avg Prec	Avg Runoff	Avg Infiltration Rainfall	Evapo trans	Req Leach	Total Water Needs	Effl Needed Root Zn	Net Evap Res. Ft.	Net Evap. Res. Surf	Effluent Needed Based on Irrigation Efficiency	Consump. from Reserv. (Including Res. Evap.)
January	1.37	0.22	1.15	1.17	0.02	1.19	0.05	0.06	0.01	0.06	0.07
February	1.62	0.35	1.27	1.53	0.26	1.79	0.51	0.08	0.02	0.60	0.62
March	1.19	0.15	1.04	2.88	1.84	4.72	3.68	0.24	0.06	4.33	4.38
April	1.97	0.54	1.43	3.42	1.99	5.41	3.99	0.24	0.06	4.69	4.75
May	3.20	1.40	1.80	6.39	4.59	10.98	9.18	0.17	0.04	10.80	10.84
June	2.77	1.08	1.69	6.03	4.34	10.37	8.68	0.32	0.08	10.21	10.29
July	1.47	0.27	1.20	6.75	5.55	12.30	11.10	0.53	0.13	13.06	13.19
August	2.36	0.79	1.57	4.68	3.11	7.79	6.23	0.41	0.10	7.33	7.42
September	3.27	1.46	1.81	4.68	2.87	7.55	5.73	0.20	0.05	6.74	6.79
October	2.91	1.18	1.73	4.14	2.41	6.55	4.83	0.13	0.03	5.68	5.71
November	1.59	0.33	1.26	2.07	0.81	2.88	1.62	0.11	0.03	1.91	1.93
December	1.39	0.23	1.16	0.99	0.00	0.99	0.00	0.07	0.02	0.00	0.02
<b>Total</b>	<b>25.11</b>	<b>8.01</b>	<b>17.10</b>	<b>44.73</b>	<b>27.80</b>	<b>72.53</b>	<b>55.60</b>	<b>2.56</b>	<b>0.61</b>	<b>65.41</b>	<b>66.02</b>

Crop is	Bermuda	
CN	80.00	
Ce	5.00	
CL	10.00	
POND AREA	9.40	ACRES
POND CAPACITY	211	AC-FEET
IRR. AREA	474.00	ACRES
Irr. Eff., K	0.85	
Design Flow	1.500	MGD
Effluent Avail. Application =	3.54	IN/AC/MONTH
Max. Application Rate =	5.50	Ac-in/ac/month

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX E

PROPOSED CHANGES TO DRAFT PERMIT FOLLOWING PUBLIC NOTICE

CHANGES MADE IN RESPONSE TO PUBLIC COMMENTS

In response to public comment, the Executive Director has changed certain provisions of the draft permit. These changes and the reasons for these changes are more fully described above.

1. The following sentence has been added to Other Requirements Provision No. 8:

"The permittee shall submit the results of the annual vegetative analysis for selenium contained by the proposed crop with copies of the laboratory reports to the TCEQ Water Quality Assessment (WQA) Team of the Water Quality Division (MC-150); Region 14 Office (MC-R14); and the Enforcement Division (MC-224)."

OTHER CHANGES MADE TO DRAFT PERMIT

In addition to the changes above the Executive Director has changed certain provisions of the draft permit based on the request of the applicant in a letter dated June 8, 2007. The following changes make the proposed draft permit more stringent than the draft permit that on file at the time of public notice:

1. The total dissolved solids (TDS) daily average effluent limitation of 26,504 lbs/day is changed to 23,400 lbs/day.
2. The following new provision is added to the proposed draft permit as "Other Requirements" Provision No. 10:

"The permittee shall sample Outfall 002 under the following conditions:

- A. Once during every calendar quarter that a discharge event occurs via Outfall 002, and
- B. During any discharge event at Outfall 002 following any overtopping of containment areas.

Samples shall be analyzed for the following constituents: Benzene, Toluene, Ethylbenzene, and Xylene (BTEX); Total Chromium; Hexavalent Chromium; Total Mercury; Total Zinc; Total Copper; Total Selenium; and Total Silver. The monitoring results shall be reported to the TCEQ, Industrial Permits Team (MC-148) of the Water Quality Division, Region 14 Office, and to the Enforcement Division (MC 224) by the 25th day of the month following the end of each calendar quarter. This requirement is effective upon date of permit issuance and lasting until April 30, 2010."

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 001

1. During the period beginning upon date of issuance and lasting until plant production rate is increased (\*1), the permittee is authorized to discharge treated process wastewater, utility wastewater (cooling tower blowdown, boiler blowdown, reverse osmosis reject, etc.), miscellaneous waste streams (air pollution control wastewater, deep well backflush, etc.), storm water, and treated ground water subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1.5 million gallons per day (MGD). The daily maximum flow of effluent shall not exceed 3.0 million gallons.

Effluent Characteristic	Discharge Limitations		Minimum Self-Monitoring Requirements	
	Daily Avg lbs/day	Daily Max lbs/day	Report Daily Avg. & Daily Max. mg/l	Measurement Frequency Sample Type
Flow	1.5 MGD	3.0 MGD	N/A	1/operating shift Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	588	1177	100	2/week (*2) Composite
Chemical Oxygen Demand	4605	94 mg/l	100	2/week (*2) Composite
Total Suspended Solids	684	8967	750	2/week (*2) Composite
Oil and Grease	255	1137	75	2/week (*2) Composite
Ammonia as Nitrogen	200	456	19	2/week (*2) Grab
Phenols	16 mg/l	400	43	2/week (*2) Composite
Sulfides	4.1	32 mg/l	43	2/week (*2) Composite
Chromium, Total	3.8	8.5	0.30	2/week (*2) Grab
Chromium, Hexavalent	9.9	8.4	0.30	2/week (*2) Grab
Total Dissolved Solids	0.169	24	1.5	1/month (*2) Composite
Total Dissolved Solids Chlorides	23,400	0.357	0.04	2/week (*2) Composite
Mercury, Total	3562 mg/l	56,074	5600	2/week (*2) Composite
Zinc, Total	37,935	5600 mg/l	5600	2/week (*2) Composite
Copper, Total (*3)	0.0036	80,257	6414	2/week (*2) Composite
Copper, Total (*4)	6.65	0.0077	0.006	2/week (*2) Composite
Selenium, Total	(Report - mg/l)	14.1	1.0	2/week (*2) Composite
Silver, Total	0.925	(Report - mg/l)	N/A	1/week (*2) Grab
	(Report - mg/l)	1.96	0.30	1/week (*2) Grab
	(Report - mg/l)	(Report - mg/l)	N/A	1/week (*2) Grab
	(Report - mg/l)	(Report - mg/l)	N/A	1/week (*2) Grab

- (\*1) See Other Requirements No. 3.
  - (\*2) When discharge occurs.
  - (\*3) Beginning upon date of permit issuance and lasting for a period of three (3) years. See "Other Requirements" Provision No. 9 on Page No. 15 of this permit.
  - (\*4) Beginning three (3) years after permit issuance and lasting until permit expiration.
2. The dissolved oxygen shall not be less than 4.0 mg/l and shall be monitored 1/week (\*2), by grab sample.
  3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day (\*2), 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(s): At Outfall 001, at the discharge pipe from the polishing sand filters on the west side of company property. During periods of flood conditions, routine and non-routine maintenance, and other emergency events, the levee gates may be closed and the effluent may be pumped over and discharged on the other side of the levee to the unnamed ditch.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 001

1. During the period beginning at the increase of plant production rate (\*1) and lasting through date of expiration, the permittee is authorized to discharge treated process wastewater, utility wastewater (cooling tower blowdown, boiler blowdown, reverse osmosis reject, etc.), miscellaneous waste streams (air pollution control wastewater, deep well backflush, etc.), storm water, and treated ground water subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1.5 million gallons per day (MGD). The daily maximum flow of effluent shall not exceed 3.0 million gallons.

Effluent Characteristic	Discharge Limitations		Minimum Self-Monitoring Requirements	
	Daily Avg lbs/day	Daily Max lbs/day	Single Grab mg/l	Report Daily Avg. & Daily Max. Measurement Frequency Sample Type
Flow	1.5 MGD	3.0 MGD	N/A	1/operating shift Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	588	1177	100	2/week (*2) Composite
Chemical Oxygen Demand	47 mg/l	94 mg/l	100	2/week (*2) Composite
Total Suspended Solids	5995	11668	750	2/week (*2) Composite
Oil and Grease	851	1396	75	2/week (*2) Composite
Ammonia as Nitrogen	319	575	19	2/week (*2) Grab
	200	400	43	2/week (*2) Composite
Phenols	16 mg/l	32 mg/l	43	2/week (*2) Composite
Sulfides	5.5	11	0.30	2/week (*2) Grab
Chromium, Total	5.0	11	0.30	2/week (*2) Grab
Chromium, Hexavalent	12	29	1.5	2/week (*2) Composite
Total Dissolved Solids	0.169	0.357	0.04	2/week (*2) Composite
Total Dissolved Solids Chlorides	23,400	56,074	5600	2/week (*2) Composite
Mercury, Total	3562 mg/l	5600 mg/l	5600	2/week (*2) Composite
Zinc, Total	37,935	80,257	6414	2/week (*2) Composite
Copper, Total (*3)	0.0038	0.0080	0.006	2/week (*2) Composite
Copper, Total (*4)	6.65	14.1	1.0	2/week (*2) Composite
Selenium, Total	(Report - mg/l)	(Report - mg/l)	N/A	1/week (*2) Grab
Silver, Total	0.925	1.96	0.30	1/week (*2) Grab
	(Report - mg/l)	(Report - mg/l)	N/A	1/week (*2) Grab
	(Report - mg/l)	(Report - mg/l)	N/A	1/week (*2) Grab

(\*1) See Other Requirements No. 3.

(\*2) When discharge occurs.

(\*3) Beginning upon date of permit issuance and lasting for a period of three (3) years. See "Other Requirements" Provision No. 9 on Page No. 15 of this permit.

(\*4) Beginning three (3) years after permit issuance and lasting until permit expiration.

2. The daily average concentration for dissolved oxygen shall not be less than 4.0 mg/l and shall be monitored 1/week (\*2), by grab sample.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day (\*2), 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(s): At Outfall 001, at the discharge pipe from the polishing sand filters on the west side of company property. During periods of flood conditions, routine and non-routine maintenance, and other emergency events, the levee gates may be closed and the effluent may be pumped over and discharged on the other side of the levee to the unnamed ditch.

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge storm water runoff, hydrostatic test water, fire water runoff and plant washwater subject to the following effluent limitations:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Minimum Self-Monitoring Requirements</u>	
	Daily Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Daily Max. Measurement Frequency Sample Type
Chemical Oxygen Demand	N/A	150	150	1/day *
Oil and Grease	N/A	15	15	1/day *

\* When discharge occurs. A grab sample shall be collected immediately following the start of each discharge and analyzed. Monitoring shall continue 1/day for the duration of each discharge.

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. 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, the flood levee gate area at the edge of plant property. During periods of flood conditions, routine and non-routine maintenance, and other emergency events, the levee gates may be closed and the effluent may be pumped over and discharged on the other side of the levee to the unnamed ditch.

**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 §§ 5.103 and 5.105, and the Texas Health and Safety Code §§ 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 Section 26.001 of the Texas Water Code 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 1 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. Fecal coliform bacteria concentration - the number of colonies of fecal coliform bacteria per 100 milliliters effluent. The daily average fecal coliform 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 fecal coliform bacteria equaling zero, a substituted value of one shall be made for input into either computation method. The 7-day average for fecal coliform 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 which 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 which 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, the Texas Water Code, Chapters 26, 27, and 28, and Texas Health and Safety Code, 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

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.

## 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 maybe 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 which 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 which 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 which 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 which 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) which 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 which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which 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 which would be subject to section 301 or 306 of the CWA 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 which 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 Texas Water Code Section 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 which 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 Clean Water Act, §§ 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 Texas Water Code Chapters 26, 27, and 28, and Texas Health and Safety Code 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 Texas Water Code Section 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 which 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 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 which are not described in the permit application or which 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 Texas Water Code § 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 Section 307(a) of the Clean Water Act for a toxic pollutant which 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 Section 307(a) of the Clean Water Act 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 Water Quality Applications Team (MC 161) of the Registration, Review, and Reporting 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 which 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 Chapter 11 of the Texas Water Code.

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(14)) 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 Agriculture and Sludge 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 Texas Water Code § 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 which 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 percent 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 percent 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 which reaches 75 percent 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 judgement 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 percent, unless otherwise authorized by this permit.
11. Facilities which 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 Registration, Review, and Reporting 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 Chapter 361 of the Texas Health and Safety Code.

TCEQ Revision 05/2004

OTHER REQUIREMENTS

- Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 14 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 14 and the Enforcement Division (MC 224).

<u>Pollutant</u>	<u>Pollutant</u>
Total Chromium	Total Mercury
Hexavalent Chromium	Phenols
Total Copper	Total Zinc

- There is no mixing zone established for this discharge to an intermittent stream. Acute toxic criteria apply at the point of discharge. Chronic toxic criteria apply at the point where the discharge reaches the Nueces/Lower Frio River.
- The permittee shall notify the TCEQ Region 14 office, the TCEQ Industrial Permits Team (MC-148) of the Water Quality Division, and the Applications Review and Processing Team (MC-148) of the Water Quality Division at least 30 days prior to the facility's expansion of production to 110,000 barrels of throughput. Final effluent limitations for Outfall 001 shall become effective immediately following expansion.
- Test methods utilized to determine compliance with the permit limitations and requirements shall be sensitive enough to detect the following parameters at the defined minimum analytical level (MAL).

<u>Parameter</u>	<u>MAL (mg/l)</u>	<u>Parameter</u>	<u>MAL (mg/l)</u>
Chromium (Total)	0.020	Selenium (Total)	0.010
Chromium (Hexavalent)	0.010	Silver (Total)	0.002
Copper (Total)	0.010	Zinc (Total)	0.005
Mercury (Total)	0.0002		

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 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.

5. TOTAL SELENIUM TESTING

Within the term of the permit, the permittee shall perform analytical tests for total selenium on the influent of wastewater into the irrigation pond and on the effluent in the irrigation pond. The sampling frequency shall be once per quarter. Samples obtained shall be a grab type as defined in the permit under "Definitions and Standard Permit Conditions". Testing shall be conducted according to any EPA methodology which is approved and test methods shall be sensitive enough to detect the constituent at the Minimum Analytical Level (MAL). A summary of results with original laboratory reports shall be submitted as an attachment with the renewal application.

6. IRRIGATION REQUIREMENTS

- A. The permittee is authorized to utilize effluent from the process wastewater treatment facilities for irrigation of an approximately 1438 acre company-owned tract. The tract maintains a minimum of a 474 acre zone that is utilized for irrigation with wastewater. The irrigation site is located three miles north-northeast of the City of Three Rivers.
- B. The permittee shall provide adequate storage volume for treated wastewater. At a minimum, the permittee shall maintain and utilize the existing storage pond, located at the irrigation tract, that has a maximum storage capacity of 224 acre-feet. The pond shall be managed so as to maintain 2 feet of freeboard. Existing holding ponds, Ponds 5, 6, and 7, may be utilized for additional storage of treated effluent, utility wastewater, storm water, sandfilter backflush, and/or deep well backflush.
- C. Wastewater\* utilized for irrigation shall be subject to the following limitations:

<u>Parameter</u>	<u>Daily Max mg/l</u>	<u>Annual Rate</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow (MGD)	Report**	N/A	1/day	Record
Hydraulic Application (acre-ft/acre/yr)	N/A	3.54	1/year	Calculate
Nitrogen Application*** (lb/acre/year)	Report	600	1/quarter	Calculate
Chemical Oxygen Demand	510	N/A	1/week	Composite
Biochemical Oxygen Demand (5-day)	50	N/A	1/week	Composite
Oil and Grease	19	N/A	1/week	Grab
Ammonia-Nitrogen	100	N/A	1/week	Composite
Phenols	0.3	N/A	1/week	Grab
Sulfides	0.3	N/A	1/week	Grab
Total Chromium	0.7	N/A	1/week	Composite
Hexavalent Chromium	0.06	N/A	1/week	Composite
pH (standard units)	6.0 - 9.0****	N/A	1/week	Grab

\* Includes, but is not limited to, wastewater (treated, partially treated, and untreated), supplements (fertilizers, maintenance chemicals, pesticides, treatment chemicals, etc.), off-spec product, and any other material and/or substance applied to the irrigation tract.

\*\* Report irrigation rates.

\*\*\* Defined for the purposes of this permit as consisting of ammonia-nitrogen and nitrate-nitrogen.

\*\*\*\* pH shall be within a range of 6.0 - 9.0 standard units.

Records of analyses shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ. Complete records shall be maintained for a minimum of at least three years. A summary of a minimum of three years of records shall be submitted as an attachment to any application for amendment or renewal of this permit.

- D. The permittee shall maintain an operating log which records the daily volume of wastewater irrigated, hours that wastewater is applied, and the surface area of the irrigation site which is wetted. The log shall be maintained at the plant site and be available for inspection by authorized representatives of the TCEQ.
- E. Surficial samples of irrigated soil shall be collected quarterly from the most heavily irrigated areas. The exchangeable sodium percentage (ESP) of each sample shall be analyzed. If the average of the value exceeds 20%, a program of calcium amendments shall be immediately implemented to reduce the ESP to approximately 10% or less. Results of the quarterly ESP testing shall be reported to the TCEQ, Water Quality Assessment Team (MC -150) and Industrial Permits Team (MC-148) of the Water Quality Division during September, December, March, and June of each year.
- F. The permittee shall develop a written plan for investigation of elevated soil salinity and sodium adsorption ratios within the irrigation tract. The plan shall include detailed information regarding past, present and future management of soils, wastewater quality, and crops. Analytical results of historical wastewater and soil monitoring shall be incorporated in the investigation as is appropriate. The plan shall be submitted to the Water Quality Assessment Team (MC -150) of the Water Quality Division and a copy forwarded to the Industrial Permits Team (MC-148) of the Water Quality Division within 90 days following date of permit issuance. Approval for implementation of the plan shall be obtained from the Water Quality Assessment Team and the plan shall be initiated within 60 days of receiving the approval. This permit may be reopened to include additional requirements or limitations based upon a review of the information that is submitted.

Annual soil sampling from the root zone of the irrigated site is required. Sampling procedures shall employ accepted techniques of soil science for obtaining representative analytical results. Analyses shall be performed for oil and grease, pH, total and nitrate nitrogen, potassium, phosphorus, and conductivity. The results of the annual sampling shall be reported to the TCEQ, Water Quality Assessment Team (MC -150) of the Water Quality Division during September of each year.

- G. The permittee shall maintain a crop of coastal bermuda and winter rye grasses over the irrigation site. Winter rye grass shall be over seeded during those portions of the year when coastal bermuda grass is normally dormant. A minimum of four hay cuttings per year is required at a nitrogen application rate of 600 lb/acre/year. One hay cutting per year may be eliminated for every 100 lb/acre/year reduction in actual nitrogen loading, but in no case will there be less than two hay cuttings per year. All resulting hay shall be removed from the fields following cutting.
- H. Irrigation practices shall be managed so as to prevent contamination of ground water and surface water. Practices shall prevent the occurrence of nuisance conditions. Wastewater shall be applied evenly so that potential for runoff of irrigation water is minimized or prevented. Tailwater control facilities shall be provided, as necessary, to insure that there is no discharge of wastewater or commingled process wastewater from the irrigation site. Commingled process wastewater includes applied wastewater that has not soaked into the ground and that comes into contact with storm water runoff.
- I. No irrigation may be conducted within 24 hours following a measured rainfall of one-half inch or greater. No irrigation may be conducted on any zone that contains standing water.
7. The permittee shall develop an updated management plan that illustrates monitoring/management of nutrient salinity and sodic constituents within the effluent, soils, and crops. This plan shall address the loading rates of constituents contained within the effluent and long term management goals to address potential buildup of these constituents. Specifically, this plan shall include:
- A. An annual effluent analyses as required by the current permit provisions.

- B. Prior to land application of treated effluent, and annually thereafter, the permittee shall obtain representative soil samples from the root zone of each individual field of land application. Composite sampling techniques shall be used. Each composite sample shall represent no more than each individual field with no less than 15 sub-samples representing each composite sample. Sub-samples shall be composited by like sampling depth and soil type for analysis and reporting. Soil types are soils that have like topsoil or plow layer textures. These soils shall be sampled individually from 0 to 12 inches annually. Soils shall be sampled at depth increments of 0-12, 12-24, and 24-36 inches every third year or triennium. The permittee shall sample and analyze soils in September-October of each year. Samples shall be taken within the same 45 day time-frame each year.

The permittee shall provide annual and triennial soil analysis of the land application area for pH [2:1 (v/v) water/soil mixture], conductivity [2:1 (v/v) water/soil mixture]; total kjeldahl nitrogen (TKN); nitrate-nitrogen; and plant-available potassium, calcium, magnesium, sodium, sulfur, and phosphorus. The plant nutrient parameters shall be analyzed on a plant available or extractable basis. Phosphorus shall be analyzed according to the Mehlich III procedure; potassium, calcium, magnesium, sodium, and sulfur may also be analyzed in the Mehlich III extract. Plant-available phosphorus, potassium, calcium, magnesium, sodium, and sulfur shall be reported on a dry weight basis in mg/kg; conductivity shall be reported in mmho/cm; and pH shall be reported in standard units. TKN procedures that use methods that rely on mercury as a catalyst are not acceptable.

The permittee shall submit the results of the annual and triennial soil sample analyses with copies of the laboratory reports to the TCEQ Water Quality Assessment (WQA) Team of the Water Quality Division (MC-150); Region 14 Office (MC-R14); and the Enforcement Division (MC-224) no later than the end of December of each sampling year. If wastewater is not applied in a particular year, the permittee shall notify the same TCEQ offices and indicate that wastewater has not been applied on the approved land disposal site during that year.

- 8. An annual vegetative analysis for selenium contained by the proposed crop shall be conducted each May. The analysis performed by the laboratory shall be submitted annually in the month of July after the May vegetative sampling event. The permittee shall submit the results of the annual vegetative analysis for selenium contained by the proposed crop with copies of the laboratory reports to the TCEQ Water Quality Assessment (WQA) Team of the Water Quality Division (MC-150); Region 14 Office (MC-R14); and the Enforcement Division (MC-224).

9. 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 copper at Outfall 001:

- 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 the date of permit issuance.

The permittee shall submit quarterly progress reports in accordance with the following schedule. The first report is due on the first report date occurring at least 60 days after permit issuance. The requirement to submit quarterly progress reports shall expire three years from the date of permit issuance.

PROGRESS REPORT DATE

- 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 copper 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 14 Office and to the Enforcement Division (MC 224), of the TCEQ.

10. The permittee shall sample Outfall 002 under the following conditions:

- A. Once during every calendar quarter that a discharge event occurs via Outfall 002, and
- B. During any discharge event at Outfall 002 following any overtopping of containment areas.

Samples shall be analyzed for the following constituents: Benzene, Toluene, Ethylbenzene, and Xylene (BTEX); Total Chromium; Hexavalent Chromium; Total Mercury; Total Zinc; Total Copper; Total Selenium; and Total Silver. The monitoring results shall be reported to the TCEQ, Industrial Permits Team (MC-148) of the Water Quality Division, Region 14 Office, and to the Enforcement Division (MC 224) by the 25th day of the month following the end of each calendar quarter. This requirement is effective upon date of permit issuance and lasting until April 30, 2010.

48-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply to Outfall 001 for whole effluent toxicity testing (biomonitoring).

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 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 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 static renewal 48-hour definitive 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. This test shall be conducted once per month.
  - 2) Acute static renewal 48-hour definitive 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. 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. All test results, valid or invalid, must be submitted as described below.

- c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100% effluent. The critical dilution, defined as 100% 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 Whole Effluent Toxicity (WET) limit, a Chemical-Specific (CS) limit, a Best Management Practice (BMP), additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.

2. Required Toxicity Testing Conditions

- a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:
  - 1) a control mean survival of 90% or greater;
  - 2) a Coefficient of Variation percent (CV%) of 40 or less for both the control and critical dilution. However, if significant lethality is demonstrated, a CV% greater than 40 shall not invalidate the test. The CV% requirement does not apply when significant lethality occurs.

## b. Statistical Interpretation

- 1) For the water flea and fathead minnow 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 "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.
- 2) 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.
- 3) 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 90% 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.
- 4) The NOEC is defined as the greatest effluent dilution at which no significant lethality is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which significant lethality is demonstrated. Significant lethality is herein defined as a statistically significant difference at the 95% confidence level between the survival of the test organism(s) in a specified effluent dilution compared to the survival of the test organism(s) in the control (0% effluent).
- 5) 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 and a full report will be submitted to the Water Quality Standards Team.
- 6) 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.
- 7) The Water Quality Standards Team will review test results (i.e., Table 1 and Table 2 forms) for consistency with established TCEQ rules, procedures, and permit requirements.

## 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 preexisting 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;
  - c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3 of this Section.

The synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or a natural water in the drainage basin that is unaffected by the discharge, provided the magnitude of these parameters will not cause toxicity in a synthetic dilution water control that has been formulated to match the pH, hardness, and alkalinity naturally found in the receiving 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 two flow-weighted 24-hour composite samples from Outfall 001. The second 24-hour composite sample will be used for the renewal of the dilution concentrations for each toxicity test. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportionally to flow, or a sample continuously collected proportionally to flow over a 24-hour operating day.
- 2) The permittee shall collect the 24-hour 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 24-hour composite sample. The holding time for any subsequent 24-hour composite sample shall not exceed 36 hours. Samples shall be maintained at a temperature of 4 degrees Centigrade during collection, shipping, and storage.
- 4) If flow from the outfall being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number 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 daily 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 effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Part 3.

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 Water Quality Standards Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Water Quality Compliance Monitoring Team of the Enforcement Division (MC-224).

- 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 "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, for every valid and invalid toxicity test initiated whether carried to completion or not. All The full reports shall be retained for 3 years at the plant site and shall be available for inspection by TCEQ personnel.
- b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit. All Table 1 reports must include the information specified in the Table 1 form attached to 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 on the DMR for the appropriate parameters for valid tests only:
  - 1) For the water flea, Parameter TEM3D, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
  - 2) For the water flea, Parameter TOM3D, report the NOEC for survival.
  - 3) For the water flea, Parameter TXM3D, report the LOEC for survival.
  - 4) For the fathead minnow, Parameter TEM6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
  - 5) For the fathead minnow, Parameter TOM6C, report the NOEC for survival.
  - 6) For the fathead minnow, Parameter TXM6C, report the LOEC for survival.
- d. Enter the following codes on the DMR for 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."

#### 4. Persistent Lethality

The requirements of this Part apply only when a toxicity test demonstrates significant lethality. Significant lethality is defined as a statistically significant difference, at the 95% confidence level, between the survival of the test organism in a specified effluent dilution when compared to the survival of the test organism in the control.

- a. The permittee shall conduct a total of two additional tests (retests) for any species that demonstrates significant lethality. 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. Test completion is defined as the last day of the test. The retests shall also be reported on the DMRs as specified in Part 3.d.
- 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.
- c. The provisions of item 4.a. are suspended upon completion of the two retests and submittal of the TRE Action Plan and Schedule defined in Part 5 of this Section.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the last test day of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a 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/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the last test day 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 Toxicity Reduction Evaluation 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 lethal effects at the critical dilution 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/or 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/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or 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/or 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/or substantiating documentation which identifies the pollutant(s) and/or 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 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 months with at least monthly testing. At the end of the 12 months, 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 accommodate 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/or 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/or an appropriate control measure.

- g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-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 provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality 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.
- h. 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/or to specify CS limits.

TABLE 1 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

Dates and Times No. 1 FROM: \_\_\_\_\_ Date Time TO: \_\_\_\_\_ Date Time  
 Composites  
 Collected No. 2 FROM: \_\_\_\_\_ Date Time TO: \_\_\_\_\_ Date Time

Test initiated: \_\_\_\_\_ am/pm \_\_\_\_\_ date

Dilution water used: \_\_\_\_\_ Receiving water \_\_\_\_\_ Synthetic Dilution water

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	32%	42%	56%	75%	100%
24h	A						
	B						
	C						
	D						
	E						
48h	A						
	B						
	C						
	D						
	E						
Mean at test end							
CV%*							

\*Coefficient of Variation = Standard Deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less (p = 0.05) than the control survival?

CRITICAL DILUTION (100%): \_\_\_\_\_ YES \_\_\_\_\_ NO

Enter percent effluent corresponding to the NOEC\LOEC below:

- 1) NOEC survival = \_\_\_\_\_ % effluent
- 2) LOEC survival = \_\_\_\_\_ % effluent

TABLE 1 (SHEET 2 OF 2)  
FATHEAD MINNOW SURVIVAL

Dates and Times                      Date              Time                      Date              Time  
 Composites                      No. 1 FROM: \_\_\_\_\_ TO: \_\_\_\_\_  
 Collected                      No. 2 FROM: \_\_\_\_\_ TO: \_\_\_\_\_

Test initiated: \_\_\_\_\_ am/pm \_\_\_\_\_ date

Dilution water used: \_\_\_\_\_ Receiving water      \_\_\_\_\_ Synthetic Dilution water

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	32%	42%	56%	75%	100%
24h	A						
	B						
	C						
	D						
	E						
48h	A						
	B						
	C						
	D						
	E						
Mean at test end							
CV%*							

\*Coefficient of Variation = Standard Deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less (p = 0.05) than the control survival?

CRITICAL DILUTION (100%): \_\_\_\_\_ YES \_\_\_\_\_ NO

Enter percent effluent corresponding to the NOEC\LOEC below:

- 1) NOEC survival = \_\_\_\_\_ % effluent
- 2) LOEC survival = \_\_\_\_\_ % effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply individually and separately to Outfall(s) 001 for whole effluent toxicity testing (biomonitoring). No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall.

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, 30 TAC §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. All test results, valid or invalid, must be submitted as described below.

- c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. Except as discussed in item 2.b., the control and/or dilution water shall consist of a standard, synthetic, moderately hard, reconstituted water.
- d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, a Best Management Practice (BMP), Chemical-Specific (CS) limits, additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity 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/or dilution water shall normally consist of a standard, synthetic, moderately hard, reconstituted water. If the permittee utilizes the results of a 48-Hour Acute test or a Chronic test to satisfy the 24-Hour Acute Biomonitoring requirements in accordance with item 1.e., the permittee may use the receiving water or dilution water that meets the requirements of item 2.a. as the control and dilution water.

## c. Samples and Composites

- 1) The permittee shall collect one flow-weighted 24-hour composite sample from Outfall 001. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a 24-hour operating day.
- 2) The permittee shall collect the 24-hour 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 24-hour composite sample. Samples shall be maintained at a temperature of 4 degrees Centigrade during collection, shipping, and storage.
- 4) If the Outfall 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 required in Part 3 of this Section.

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 Water Quality Standards Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Water Quality Compliance Monitoring Team of the Enforcement Division (MC-224).

- 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 "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, for every valid and invalid toxicity test initiated. All full reports shall be retained for three years at the plant site and shall be available for inspection by TCEQ personnel.
- b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit. All Table 2 reports must include the information specified in the Table 2 form attached to 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 on the DMR 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 a "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 a "1."

d. Enter the following codes on the DMR 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 a "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 a "1."

#### 4. Persistent Mortality

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 two additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for two weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These additional effluent concentrations shall be 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. The retests shall also be reported on the DMRs as specified in Part 3.d.
- 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. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a 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/or 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 Toxicity Reduction Evaluation 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/or 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/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or 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 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/or 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/or substantiating documentation which identifies the pollutant(s) and/or 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 accommodate 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/or 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/or 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 30 TAC 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 30 TAC 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/or to specify a CS limit.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	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

95% confidence limits: \_\_\_\_\_

Method of LC50 calculation: \_\_\_\_\_

TABLE 2 (SHEET 2 OF 2)  
 FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	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

95% confidence limits: \_\_\_\_\_

Method of LC50 calculation: \_\_\_\_\_

Attachment C  
Compliance History

## Compliance History

Customer/Respondent/Owner-Operator:	CN600124861	Diamond Shamrock Refining Company, L.P.	Classification: AVERAGE	Rating: 2.81
Regulated Entity:	RN100542802	DIAMOND SHAMROCK REFINING VALERO	Classification: AVERAGE	Site Rating: 5.35
ID Number(s):	AIR OPERATING PERMITS	ACCOUNT NUMBER	LK0009T	
	AIR OPERATING PERMITS	PERMIT	1450	
	WASTEWATER	PERMIT	WQ0001353000	
	WASTEWATER	PERMIT	TPDES0088331	
	WASTEWATER	PERMIT	TX0088331	
	INDUSTRIAL AND HAZARDOUS WASTE GENERATION	EPA ID	TXD990709966	
	INDUSTRIAL AND HAZARDOUS WASTE GENERATION	SOLID WASTE REGISTRATION # (SWR)	31553	
	AIR NEW SOURCE PERMITS	AFS NUM	4829700006	
	AIR NEW SOURCE PERMITS	PERMIT	50607	
	AIR NEW SOURCE PERMITS	ACCOUNT NUMBER	LK0009T	
	AIR NEW SOURCE PERMITS	PERMIT	9968	
	AIR NEW SOURCE PERMITS	PERMIT	2362B	
	AIR NEW SOURCE PERMITS	PERMIT	5139A	
	AIR NEW SOURCE PERMITS	PERMIT	6328	
	AIR NEW SOURCE PERMITS	PERMIT	9190	
	AIR NEW SOURCE PERMITS	PERMIT	10815	
	AIR NEW SOURCE PERMITS	PERMIT	15000	
	AIR NEW SOURCE PERMITS	PERMIT	15404	
	AIR NEW SOURCE PERMITS	PERMIT	16020	
	AIR NEW SOURCE PERMITS	PERMIT	16103	
	AIR NEW SOURCE PERMITS	PERMIT	27201	
	AIR NEW SOURCE PERMITS	PERMIT	30363	
	AIR NEW SOURCE PERMITS	PERMIT	40102	
	AIR NEW SOURCE PERMITS	PERMIT	45790	
	AIR NEW SOURCE PERMITS	PERMIT	49756	
	AIR NEW SOURCE PERMITS	PERMIT	49489	
	AIR NEW SOURCE PERMITS	PERMIT	49486	
	AIR NEW SOURCE PERMITS	PERMIT	49488	
	AIR NEW SOURCE PERMITS	REGISTRATION	54729	
	AIR NEW SOURCE PERMITS	REGISTRATION	55285	
	AIR NEW SOURCE PERMITS	REGISTRATION	55896	
	AIR NEW SOURCE PERMITS	REGISTRATION	75517	
	AIR NEW SOURCE PERMITS	REGISTRATION	70536	
	AIR NEW SOURCE PERMITS	PERMIT	PSDTX1017	
	AIR NEW SOURCE PERMITS	PERMIT	55728	
	AIR NEW SOURCE PERMITS	EPA ID	PSDTX331M5	
	AIR NEW SOURCE PERMITS	EPA ID	PSDTX804	
	AIR NEW SOURCE PERMITS	EPA ID	PSDTX331	
	AIR NEW SOURCE PERMITS	EPA ID	PSDTX331M1	
	AIR NEW SOURCE PERMITS	REGISTRATION	71415	
	AIR NEW SOURCE PERMITS	PERMIT	50835	
	AIR NEW SOURCE PERMITS	REGISTRATION	71663	
	AIR NEW SOURCE PERMITS	REGISTRATION	76733	
	AIR NEW SOURCE PERMITS	EPA ID	PSDTX1017	
	AIR NEW SOURCE PERMITS	REGISTRATION	78562	
	AIR NEW SOURCE PERMITS	REGISTRATION	79137	
	AIR NEW SOURCE PERMITS	REGISTRATION	78872	
	AIR NEW SOURCE PERMITS	REGISTRATION	79862	
	AIR NEW SOURCE PERMITS	REGISTRATION	81078	
	AIR NEW SOURCE PERMITS	REGISTRATION	82209	
	AIR NEW SOURCE PERMITS	REGISTRATION	81730	
	AIR NEW SOURCE PERMITS	REGISTRATION	81540	
	AIR NEW SOURCE PERMITS	REGISTRATION	83511	
	AIR NEW SOURCE PERMITS	REGISTRATION	82663	
	AIR NEW SOURCE PERMITS	REGISTRATION	84592	
	STORMWATER	PERMIT	TXR05L552	
	UNDERGROUND INJECTION CONTROL	PERMIT	WDW404	
	UNDERGROUND INJECTION CONTROL	PERMIT	WDW405	

UNDERGROUND INJECTION CONTROL	PERMIT	WDW406
INDUSTRIAL AND HAZARDOUS WASTE STORAGE	PERMIT	50100
INDUSTRIAL AND HAZARDOUS WASTE STORAGE	PERMIT	50100
IHW CORRECTIVE ACTION	SOLID WASTE REGISTRATION # (SWR)	31553
INDUSTRIAL AND HAZARDOUS WASTE DISPOSAL	PERMIT	50100
WASTE WATER GENERAL PERMIT	PERMIT	TXG670020
INDUSTRIAL AND HAZARDOUS WASTE COMPLIANCE PLANS	PERMIT	50100

Location: 301 LE ROY ST, THREE RIVERS, TX, 78071 Rating Date: 9/1/2007 Repeat Violator: NO

TCEQ Region: REGION 14 - CORPUS CHRISTI

Date Compliance History Prepared: August 20, 2008

Agency Decision Requiring Compliance History: Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.

Compliance Period: December 31, 1999 to August 20, 2008

TCEQ Staff Member to Contact for Additional Information Regarding this Compliance History

Name: Michael Sunderlin Phone: (512) 239-4523

### Site Compliance History Components

1. Has the site been in existence and/or operation for the full five year compliance period? Yes
2. Has there been a (known) change in ownership of the site during the compliance period? Yes
3. If Yes, who is the current owner? Diamond Shamrock Refining Company, L.P.  
Valero Refining-Texas, L.P.
4. If Yes, who was/were the prior owner(s)? DIAMOND SHAMROCK REFINING
5. When did the change(s) in ownership occur? 07/21/2000

### Components (Multimedia) for the Site :

A. Final Enforcement Orders, court judgements, and consent decrees of the state of Texas and the federal government.

Effective Date: 12/09/2000

ADMINORDER 2000-0708-IHW-E

Classification: Major

Citation: 30 TAC Chapter 335, SubChapter A 335.2(a)  
30 TAC Chapter 335, SubChapter B 335.43  
40 CFR Chapter 270, SubChapter I, PT 270, SubPT A 270.1

Description: Allowed the storage of hazardous waste in excess of 90 days without first having obtained a permit.

Classification: Minor

Citation: 30 TAC Chapter 335, SubChapter C 335.69(a)(2)  
40 CFR Chapter 262, SubChapter I, PT 262, SubPT C 262.34(a)(2)

Description: Failed to label drums of hazardous waste with a correct accumulation start date.

Classification: Minor

Citation: 30 TAC Chapter 335, SubChapter C 335.69(a)(3)  
40 CFR Chapter 262, SubChapter I, PT 262, SubPT C 262.34(a)(3)

Description: Failed to label drums of hazardous waste with the words "Hazardous Waste".

Classification: Moderate

Citation: 30 TAC Chapter 335, SubChapter E 335.112(a)(8)  
40 CFR Chapter 265, SubChapter I, PT 265, SubPT I 265.171

Description: Stored hazardous waste in open and leaking containers.

Classification: Moderate

Citation: 30 TAC Chapter 335, SubChapter E 335.112(a)(9)  
40 CFR Chapter 265, SubChapter I, PT 265, SubPT J 265.196

Description: Failed to adequately respond to an apparent leak in Tank 6805(b).

Classification: Moderate

Citation: 30 TAC Chapter 335, SubChapter A 335.4  
TWC Chapter 26 26.121

Description: Diamond Shamrock has caused, suffered, allowed, or permitted the disposal of industrial

and hazardous waste in such a manner so as to cause the discharge or imminent threat of discharge of such waste into or adjacent to waters of the state without obtaining specific authorization for such a discharge.

Classification: Moderate

Citation: TWC Chapter 26 26.039

Description: Failed to notify the Commission concerning the unauthorized discharge of contaminants within 24 hours of the discharge.

Effective Date: 07/21/2003

ADMINORDER 2002-1233-AIR-E

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)  
30 TAC Chapter 116, SubChapter B 116.115(c)  
5C THC Chapter 382, SubChapter A 382.085(b)

Rqmt Prov: SC 19F PERMIT

Description: Failure to test the utility boiler associated with EPN B-009 w/in 180 days of start up.

Effective Date: 11/23/2005

COURTORDER

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.6(b)  
30 TAC Chapter 101, SubChapter A 101.6(c)

Description: Failure to create and report a final record which sufficiently identified rule-required criteria.

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)  
30 TAC Chapter 116, SubChapter B 116.115(b)(2)(G)

Description: Failure to obtain regulatory authority for upset and shutdown emissions from the Akylation Unit.

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)  
30 TAC Chapter 116, SubChapter B 116.115(b)(2)(G)  
30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: SC1 PERMIT

Description: Failure to obtain regulatory authority for upset, shutdown, maintenance and start-up emissions.

Classification: Moderate

Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(4)

Description: Failure to limit visible emissions to no more than five minutes in any two-hour period from flare FL-003.

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)  
30 TAC Chapter 116, SubChapter B 116.110(a)  
30 TAC Chapter 116, SubChapter B 116.115(c)  
30 TAC Chapter 116, SubChapter B 116.116(a)

Rqmt Prov: SC1 PERMIT

Description: Failure to obtain regulatory authority for continuous emissions from the HCU Flare.

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)  
30 TAC Chapter 116, SubChapter B 116.110(a)  
30 TAC Chapter 116, SubChapter B 116.115(b)(2)(G)  
30 TAC Chapter 116, SubChapter B 116.116(a)

Rqmt Prov: Not specified PERMIT

Description: Failure to obtain regulatory authority for continuous emissions from the FCCU Flare.

Classification: Moderate

Citation: TWC Chapter 26 26.121

Description: Failure to prevent the unauthorized discharge of fire suppression water containing phase separated hydrocarbons into and adjacent to waters of the state.

Effective Date: 10/04/2007

ADMINORDER 2005-1948-AIR-E

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)  
30 TAC Chapter 116, SubChapter B 116.115(c)  
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: Special Condition 1 PERMIT

Description: Failed to comply with permitted emissions limits (TCEQ Incident Nos. 57793, 57796, and 57800), documented during an investigation conducted July 29, 2005 through August 2, 2005. Specifically, an emissions event that occurred May 3 - 6, 2005 had the following quantities: 5,959.15 pounds carbon monoxide, 56.51 pounds nitrogen dioxide, 1,073.76 pounds nitrogen monoxide, 35,534.85 pounds sulfur dioxide, 2,350.87 pounds butane, 179.25 pounds hydrogen sulfide, and 5,936.53 pounds

propane.

Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)

5C THC Chapter 382, SubChapter D 382.085(b)

Description: Failure to submit a complete and accurate final report for Incident No. 57800.

B. Any criminal convictions of the state of Texas and the federal government.

N/A

C. Chronic excessive emissions events.

N/A

D. The approval dates of investigations. (CCEDS Inv. Track. No.)

1	01/13/2000	(210642)
2	02/02/2000	(30863)
3	02/18/2000	(210598)
4	03/07/2000	(107694)
5	03/17/2000	(210605)
6	03/24/2000	(30864)
7	04/03/2000	(107695)
8	04/17/2000	(210606)
9	04/25/2000	(107696)
10	05/09/2000	(210610)
11	06/15/2000	(210614)
12	07/18/2000	(210618)
13	08/11/2000	(281424)
14	08/14/2000	(210621)
15	08/29/2000	(107698)
16	08/29/2000	(107697)
17	09/15/2000	(210624)
18	09/20/2000	(107699)
19	10/14/2000	(210627)
20	10/18/2000	(107700)
21	11/14/2000	(210631)
22	12/12/2000	(210635)
23	01/12/2001	(210639)
24	01/24/2001	(38526)
25	01/24/2001	(263172)
26	02/15/2001	(210599)
27	02/27/2001	(107706)
28	02/27/2001	(107705)
29	02/27/2001	(107704)
30	02/27/2001	(107703)
31	02/27/2001	(107702)
32	02/27/2001	(107701)
33	03/12/2001	(210602)
34	04/10/2001	(210607)
35	04/25/2001	(107707)
36	05/02/2001	(107713)
37	05/02/2001	(107712)
38	05/02/2001	(107711)
39	05/02/2001	(107710)
40	05/02/2001	(107709)
41	05/02/2001	(107708)
42	05/14/2001	(210611)
43	05/31/2001	(107714)
44	06/11/2001	(210615)
45	07/16/2001	(210619)
46	08/07/2001	(107715)
47	08/10/2001	(263170)
48	08/17/2001	(210622)
49	08/31/2001	(107716)
50	09/07/2001	(263511)
51	09/13/2001	(210625)
52	10/15/2001	(210628)
53	10/29/2001	(107717)
54	11/20/2001	(210632)

55	11/21/2001	(107718)
56	12/04/2001	(107719)
57	12/12/2001	(210636)
58	01/10/2002	(107720)
59	01/14/2002	(210640)
60	01/30/2002	(107723)
61	01/30/2002	(107722)
62	01/30/2002	(107721)
63	02/01/2002	(107724)
64	02/19/2002	(210597)
65	02/19/2002	(210600)
66	02/24/2002	(263244)
67	03/11/2002	(210603)
68	03/26/2002	(107725)
69	04/08/2002	(210608)
70	05/13/2002	(107726)
71	05/13/2002	(210612)
72	06/13/2002	(210616)
73	07/16/2002	(210620)
74	07/30/2002	(5019)
75	07/31/2002	(4581)
76	08/13/2002	(210623)
77	08/23/2002	(8584)
78	08/23/2002	(8624)
79	08/30/2002	(263167)
80	09/04/2002	(6401)
81	09/16/2002	(210626)
82	11/15/2002	(210629)
83	11/16/2002	(210633)
84	12/16/2002	(210637)
85	01/21/2003	(210641)
86	02/19/2003	(24343)
87	02/19/2003	(24355)
88	02/20/2003	(210596)
89	02/20/2003	(210601)
90	03/14/2003	(22981)
91	03/18/2003	(210604)
92	03/19/2003	(28075)
93	03/28/2003	(263548)
94	04/21/2003	(210609)
95	05/20/2003	(210613)
96	06/17/2003	(210617)
97	07/03/2003	(112482)
98	07/09/2003	(140811)
99	08/18/2003	(317590)
100	08/19/2003	(149919)
101	09/12/2003	(317588)
102	09/19/2003	(317592)
103	09/26/2003	(153044)
104	10/16/2003	(317594)
105	11/20/2003	(317595)
106	12/23/2003	(317596)
107	01/16/2004	(259884)
108	02/02/2004	(261494)
109	02/02/2004	(261547)
110	02/17/2004	(263224)
111	02/18/2004	(317580)
112	02/26/2004	(317597)
113	03/16/2004	(261988)
114	03/17/2004	(317582)
115	04/15/2004	(264142)
116	04/20/2004	(317583)
117	06/21/2004	(361454)
118	06/21/2004	(361455)
119	06/25/2004	(272078)
120	07/08/2004	(317585)
121	07/19/2004	(274249)
122	07/28/2004	(284551)

123	08/20/2004	(361456)
124	09/20/2004	(361457)
125	10/15/2004	(361458)
126	11/15/2004	(361459)
127	12/17/2004	(361460)
128	01/19/2005	(387174)
129	02/11/2005	(387172)
130	02/17/2005	(344711)
131	02/17/2005	(344732)
132	03/14/2005	(387173)
133	03/30/2005	(334416)
134	04/01/2005	(375671)
135	04/20/2005	(586813)
136	05/20/2005	(586815)
137	05/25/2005	(335530)
138	06/17/2005	(586818)
139	06/20/2005	(396550)
140	06/20/2005	(395663)
141	06/22/2005	(397091)
142	06/24/2005	(395367)
143	06/28/2005	(397649)
144	06/29/2005	(380012)
145	07/19/2005	(586821)
146	08/18/2005	(404621)
147	08/19/2005	(404722)
148	08/22/2005	(586824)
149	08/22/2005	(404888)
150	08/22/2005	(401088)
151	08/29/2005	(404949)
152	08/30/2005	(405011)
153	08/30/2005	(404952)
154	08/31/2005	(418747)
155	08/31/2005	(418864)
156	09/21/2005	(586826)
157	10/08/2005	(432627)
158	10/20/2005	(406740)
159	11/16/2005	(435723)
160	11/17/2005	(586830)
161	12/01/2005	(438319)
162	12/19/2005	(586832)
163	12/22/2005	(449864)
164	01/02/2006	(449804)
165	01/19/2006	(586834)
166	02/12/2006	(452941)
167	02/22/2006	(455828)
168	03/10/2006	(458400)
169	03/14/2006	(457720)
170	03/17/2006	(586828)
171	03/17/2006	(586811)
172	03/28/2006	(452750)
173	04/06/2006	(586809)
174	04/17/2006	(586814)
175	04/20/2006	(463009)
176	05/18/2006	(586816)
177	06/15/2006	(586819)
178	06/30/2006	(483518)
179	07/24/2006	(586822)
180	08/17/2006	(586825)
181	08/17/2006	(486707)
182	09/18/2006	(586827)
183	10/16/2006	(586829)
184	11/15/2006	(586831)
185	11/15/2006	(519601)
186	11/17/2006	(531209)
187	12/18/2006	(586833)
188	01/17/2007	(586835)
189	01/29/2007	(538086)
190	02/02/2007	(536186)

191 02/16/2007 (539013)  
 192 02/20/2007 (539328)  
 193 02/22/2007 (586810)  
 194 02/23/2007 (540422)  
 195 03/19/2007 (543755)  
 196 03/20/2007 (586812)  
 197 03/22/2007 (541719)  
 198 03/23/2007 (540495)  
 199 04/05/2007 (534570)  
 200 05/02/2007 (556217)  
 201 05/08/2007 (555030)  
 202 05/21/2007 (586817)  
 203 06/22/2007 (586820)  
 204 07/11/2007 (566548)  
 205 07/23/2007 (586823)  
 206 08/20/2007 (608555)  
 207 08/31/2007 (573673)  
 208 09/05/2007 (574266)  
 209 12/17/2007 (609417)  
 210 01/14/2008 (595864)  
 211 01/16/2008 (614747)  
 212 01/28/2008 (540527)  
 213 03/12/2008 (636452)  
 214 03/20/2008 (619180)  
 215 04/29/2008 (639525)  
 216 05/23/2008 (654332)  
 217 05/27/2008 (680195)  
 218 06/20/2008 (680240)  
 219 08/12/2008 (684817)

E. Written notices of violations (NOV). (CCEDS Inv. Track. No.)

Date: 01/24/2001 (263172)  
 Self Report? NO Classification: Moderate  
 Rqmt Prov: PERMIT TNRCC ID NO WQ001353-001  
 Description: During the inspection of the irrigation disposal site, evidence was observed of surface water run-off entering non-permitted acreage owned by Diamond Shamrock, thence entering private property.

Date: 08/10/2001 (263170)  
 Self Report? NO Classification: Moderate  
 Citation: 30 TAC Chapter 335, SubChapter E 335.112(a)(10)  
 40 CFR Chapter 265, SubChapter I, PT 265, SubPT K 265.228(b)(1)  
 Description: Failure to prevent erosion on the asphalt cover of interim status closed ponds 2, 3, and 4a. Significant erosion was present on the west, south, and top portions of the asphalt cap.

Date: 08/31/2001 (107716)  
 Self Report? NO Classification: Moderate  
 Citation: 30 TAC Chapter 101, SubChapter A 101.6  
 Description: FAILED TO MAINT. RECOR

Self Report? NO Classification: Moderate  
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)  
 Rqmt Prov: OP PPGC  
 Description: FAIL TO MAINT RCRDS

Self Report? NO Classification: Moderate  
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)  
 Description: FAIL TO MAINT RCRDS

Self Report? NO Classification: Moderate  
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)  
 Description: FAIL TO MAINT RECDS

Self Report? NO Classification: Minor  
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)  
 Rqmt Prov: OP PPSC1  
 Description: FAIL TO MAINT RECRDS

Self Report? NO Classification: Minor  
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)  
 Rqmt Prov: OP PPSC1  
 Description: FAIL OBTAIN REGUL AUTH

Self Report?	NO	Classification:	Minor
Citation:	30 TAC Chapter 116, SubChapter B 116.115(c)		
Rqmt Prov:	OP PPSC1		
Description:	FAIL OBTAIN REGUL AUTH		
Self Report?	NO	Classification:	Minor
Citation:	30 TAC Chapter 116, SubChapter B 116.115(c)		
Rqmt Prov:	OP PPSC1		
Description:	FAIL OBTAIN REGUL AUTH		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 101, SubChapter A 101.11		
Description:	FAIL OBTAIN REGUL AUTH		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 111, SubChapter A 111.111(a)(1)(A)		
Description:	FAIL LIMIT VISIB FLARE		
Date:	01/24/2002 (263244)		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 305, SubChapter F 305.125(4)		
	30 TAC Chapter 305, SubChapter F 305.125(5)		
Rqmt Prov:	PERMIT TNRCC ID No. WQ0001353-000		
Description:	Failure to prevent unauthorized discharges of irrigation effluent.		
Date:	01/30/2002 (107724)		
Self Report?	NO	Classification:	Minor
Citation:	30 TAC Chapter 101, SubChapter A 101.6		
Description:	Failure to Comply		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 116, SubChapter B 116.115(b)(1)		
Rqmt Prov:	OP PPGC7		
Description:	Failure to Comply		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 116, SubChapter B 116.115(c)		
Rqmt Prov:	OP PPSC1		
Description:	Failure to Comply		
Date:	01/30/2002 (107723)		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 111, SubChapter A 111.111(a)(1)(A)		
Description:	Failure to Comply		
Date:	01/30/2002 (107722)		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 116, SubChapter B 116.115(c)		
Rqmt Prov:	OP PP1		
Description:	Failure to Comply		
Self Report?	NO	Classification:	Major
Citation:	30 TAC Chapter 116, SubChapter B 116.110(a)		
Description:	Failure to Comply		
Self Report?	NO	Classification:	Major
Citation:	30 TAC Chapter 116, SubChapter B 116.110(a)		
Rqmt Prov:	OP PP1		
Description:	Failure to Comply		
Date:	01/30/2002 (107721)		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 111, SubChapter A 111.111(a)(1)(A)		
Description:	Failure to Comply		
Date:	08/30/2002 (263167)		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 111, SubChapter A 111.111(a)(4)(A)(ii)		
Description:	Failure to maintain a flare operation log of daily flare observation for the API flare, EPN FL-005.		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 113, SubChapter C 113.120		
	40 CFR Part 63, Subpart G 63.151(a)(1)		
Description:	Failure to provide a complete Initial Notification.		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 113, SubChapter C 113.120		
	40 CFR Chapter 63, SubChapter C, PT 63, SubPT G 63.151(c)		

Description: Failure to submit a complete Implementation Plan.  
 Self Report? NO Classification: Moderate  
 Citation: 30 TAC Chapter 113, SubChapter C 113.130  
 40 CFR Part 63, Subpart H 63.181(c)

Description: Failure to document that visual inspections of equipment subject to the provisions of subpart H were conducted.  
 Self Report? NO Classification: Minor  
 Citation: 30 TAC Chapter 113, SubChapter C 113.130  
 40 CFR Part 63, Subpart H 63.182(d)

Description: Failure to include all required information in the semi-annual periodic reports.  
 Self Report? NO Classification: Moderate  
 Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)  
 30 TAC Chapter 111, SubChapter A 111.111(a)(2)(C)  
 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT 9279  
 Description: Failure to obtain regulatory authority or meet the demonstration requirements of 30 Tex Admin. Code §§ 101.11 for emissions released to the atmosphere during 82 events regarding the fluidized catalytic cracking unit electrostatic precipitator between October 27, 2001 and August 19, 2002.  
 Self Report? NO Classification: Moderate  
 Citation: 30 TAC Chapter 101, SubChapter A 101.20(1)  
 30 TAC Chapter 101, SubChapter A 101.20(3)  
 40 CFR Part 60, Subpart QQQ 60.697(f)(3)

Rqmt Prov: PERMIT 19108  
 Description: Failure to document that the control device, the API flare (EPN FL-005), will achieve the required control efficiency during maximum loading conditions.  
 Date: 01/23/2003 (210596)  
 Self Report? YES Classification: Moderate  
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
 TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
 Date: 01/31/2003 (210601)  
 Self Report? YES Classification: Moderate  
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
 TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
 Date: 02/28/2003 (210604)  
 Self Report? YES Classification: Moderate  
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
 TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
 Date: 03/31/2003 (210609)  
 Self Report? YES Classification: Moderate  
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
 TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
 Date: 11/30/2003 (317596)  
 Self Report? YES Classification: Moderate  
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
 TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
 Date: 01/31/2004 (317580)  
 Self Report? YES Classification: Moderate  
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
 TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
 Date: 02/29/2004 (317582)  
 Self Report? YES Classification: Moderate  
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
 TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
 Date: 04/30/2004 (317585)  
 Self Report? YES Classification: Moderate  
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)

TWC Chapter 26 26.121(a)  
Description: Failure to meet the limit for one or more permit parameter  
Date: 05/31/2004 (361454)  
Self Report? YES Classification: Moderate  
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
Date: 06/30/2004 (361455)  
Self Report? YES Classification: Moderate  
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
TWC Chapter 26 26.121(a)

Description: Failure to meet the limit for one or more permit parameter  
Date: 02/18/2005 (344732)  
Self Report? NO Classification: Minor  
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
Rqmt Prov: PERMIT TPDES Permit No. WQ0001353-000  
Description: Failure to comply with self monitored effluent limitations for biochemical oxygen demand (BOD), chemical oxygen demand (COD) and Zinc(Zn)

Self Report? NO Classification: Minor  
Citation: 30 TAC Chapter 319, SubChapter A 319.11(b)  
Rqmt Prov: PERMIT TPDES Permit No. WQ0001353-000  
Description: Failure to comply with proper analytical method and techniques used for total suspended solids (TSS) sample analysis. Duplicate samples for TSS analysis are not being conducted.  
Date: 06/24/2005 (395367)

Self Report? NO Classification: Moderate  
Citation: 40 CFR Chapter 270, SubChapter I, PT 270, SubPT C 270.30(a)  
Rqmt Prov: OP HW-50100 & CP-50100  
Description: Failure to maintain lids/covers on groundwater recovery wells.  
Date: 03/19/2007 (543755)

Self Report? NO Classification: Moderate  
Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)  
Description: Failure to comply with all terms and conditions codified in the permit and any provisional terms and conditions required to be included with the permit. Specifically, the Regulated Entity failed to conduct a quarterly observation for visible emissions for stationary vents for the period of 01/01/06 through 03/31/06.

Self Report? NO Classification: Moderate  
Citation: 30 TAC Chapter 113, SubChapter C 113.120  
Description: Failure to comply with required standards for storage vessels as required by 40 CFR Part 63 (Subpart G). Specifically, the RE failed to inspect storage tank S-119 and submit a 30 day advanced notification per the HON standards prior to filling the tank.  
Date: 05/31/2007 (586820)

Self Report? YES Classification: Moderate  
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
TWC Chapter 26 26.121(a)  
Description: Failure to meet the limit for one or more permit parameter  
Date: 06/30/2007 (586823)

Self Report? YES Classification: Moderate  
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
TWC Chapter 26 26.121(a)  
Description: Failure to meet the limit for one or more permit parameter  
Date: 07/31/2007 (608555)

Self Report? YES Classification: Moderate  
Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)  
30 TAC Chapter 305, SubChapter F 305.125(1)  
Description: Failure to meet the limit for one or more permit parameter  
Date: 08/31/2007 (573673)

Self Report? NO Classification: Minor  
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
Rqmt Prov: PERMIT Interim Effluent Limitations No. 1, Pg.  
Description: Failure to comply with the permitted effluent limitations.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
Rqmt Prov: PERMIT Other Requirements No. 6 (C), Pg. 13  
Description: Failure to comply with the effluents limitations for wastewater used for irrigation.  
Date: 09/05/2007 (574266)

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 113, SubChapter C 113.120  
Description: Failure to comply with required standards for storage vessels as required by 40 CFR Part 63 (Subpart G). Specifically, the RE failed to inspect storage tank S-119 and submit a 30 day advanced notification per the HON standards prior to filling the tank.

F. Environmental audits.

Notice of Intent Date: 03/31/2008 (654049)

No DOV Associated

Notice of Intent Date: 07/07/2008 (687858)

No DOV Associated

G. Type of environmental management systems (EMSs).

N/A

H. Voluntary on-site compliance assessment dates.

N/A

I. Participation in a voluntary pollution reduction program.

N/A

J. Early compliance.

N/A

Sites Outside of Texas

N/A

Attachment D  
Executive Director's Response to Public Comments  
(RTC)



process wastewater, utility wastewater, storm water, and treated ground water via Outfall 001 at a daily average flow not to exceed 800,000 gallons per day; the intermittent flow variable discharge of storm water runoff and plant wash water via Outfall 002; and the disposal of treated process wastewater, utility wastewater, storm water, and treated ground water via irrigation of 1,376 acres. This application was submitted to the TCEQ on December 31, 2004.

The facility is located at 301 Leroy Street in the City of Three Rivers, Live Oak County, Texas; with an irrigation (disposal) site located adjacent to the southwest side of Interstate Highway 37, approximately one mile northwest of the intersection of Interstate Highway 37 and State Highway 72, north of the City of Three Rivers, Live Oak County, Texas. The effluent is discharged to an unnamed ditch, thence to the Nueces/Lower Frio River, in Segment No. 2106 of the Nueces River Basin.

### PROCEDURAL BACKGROUND

The application was received on December 31, 2004 and declared administratively complete on February 24, 2005. The Executive Director completed the technical review of the application on February 23, 2005 and prepared a draft permit. The Notice of Receipt of Application and Intent to Obtain a Water Quality Permit was published on March 16, 2005 in the *Progress*. The Notice of Application and Preliminary Decision was published on April 11, 2007 in the *Progress*. The public comment period ended on May 11, 2007. Because this application was administratively complete after September 1, 1999, it is subject to House Bill 801 (76<sup>th</sup> Legislature, 1999).

### COMMENTS AND RESPONSES

Note that all comments below were submitted by Mary Sahs on behalf of Mr. and Mrs. Lloyd Stewart.

#### **Comment 1:**

The Stewarts are affected persons as defined by law. Ms. Sahs states that as required by 30 TAC § 55.203, they have a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest affected by the application. Because of the wastewater from the refinery and its irrigation operations, the Stewarts would be adversely affected in a way not common to the general public if the draft permit is approved. The interest claimed is one protected under the Texas Water Code and the Federal Clean Water Act. There are not distance restrictions or other limitations imposed by law on the affected interest.

Ms. Sahs further states that The Stewart's own approximately 200 acres in Live Oak County. The property is a little more than 1/4 mile downstream and downhill of the irrigation property. The Stewarts have evidence showing that wastewater from the irrigation operations at times flows across their property.

**Response: 1:** The Executive Director will evaluate all hearing requests submitted for this case in accordance with TCEQ rules set for in 30 Texas Administrative Code Chapter 50. The Executive Director will make a written recommendation to the Commission as to which individuals qualify as affected persons and which hearing request meet the regulatory requirements. Ultimately, the commissioners will decide which individuals are affected persons and whether this case should be referred to the State Office of Administrative Hearings (SOAH) for a contested case hearing.

**Comment 2:**

Ms. Sahs comments that there was not proper notice of the application as required by the Texas Water Code 26.028, and requests that the TCEQ require the Applicant to begin over and re-notice through all of the required steps.

Ms. Sahs believes that the notice is confusing and totally uninformative, and that major, significant changes are being proposed for the discharge of wastewater to the irrigation fields. Ms. Sahs further states that an Applicant in the TCEQ context must provide the public with notice of application adequate to afford individuals who may be affected by the permit action a meaningful opportunity to voice their concerns and to participate in the permit process, including contested case hearing, if they so desire.

**Response: 2:** The notices that were published by the Applicant and mailed by the Chief Clerk's Office in this case meet the requirements of Texas Water Code § 26.028 and TCEQ rules found at 30 TAC § 39.151 and § 39.11. These rules require that the notice include information such as: the name and address of the agency; the name and address of the Applicant and, if different, the location of the facility or activity to be regulated by the permit; a brief description of the business conducted at the facility or activity described in the application or the draft permit; the name, address, and telephone number of an agency contact person from whom interested persons may obtain further information; a brief description of public comment procedures; a statement of procedures by which the public may participate in the final permit decision and, if applicable, how to request a hearing, or a statement that later notice will describe procedures for public participation; the application or permit number; the deadline to file comments and, if applicable, hearing requests; and a statement of whether the Executive Director has prepared a draft permit.

**Comment 3:**

Ms. Sahs states that the Notice is defective because it fails to include critical information related to the discharge to and operation of the irrigation fields, even though over the past 20 years virtually all wastewater has been discharged to the fields and not to the river. As drafted, the permit authorizes unlimited quantities of the refinery's liquid waste and off-spec product to be disposed of on the 1,438-acre irrigation tract. The Notice mentions only the increase in the discharge to the Nueces/Lower Frio River and fails to mention the increase in discharge volume to the irrigation fields.

**Response 3:** The draft permit does not authorize unlimited quantities of the refinery's liquid waste and off-spec product to be disposed of on the 1,438-acre irrigation tract. The draft permit specifically limits the hydraulic application rate of wastewaters to the 1,438-acre irrigation tract to 3.54 acre-feet/acre/year.

The public notice specifically notes the following requested changes in the proposed permit with respect to the irrigation operations:

1. Increase the size of the irrigation tract from 1,376 acres to 1,438 acres.
2. Increase the minimum irrigation area from 341.5 acres to 474 acres
3. Increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year.

**Comment 4:**

Ms. Sahs comments that the Notice is defective because, as drafted, the permit authorizes the expansion of the definition of wastewater. The current permit authorizes using treated effluent and discharge into the River of treated effluent. Nothing in the Notice alerts the public to the fact that the permit as drafted would authorize disposal by irrigation of treated, partially treated, and untreated wastewater; fertilizers, maintenance chemicals, pesticides, treatment chemicals, and other "supplements"; off-spec product; deep well back flush; "and any other materials and /or substances applied to the irrigation tract sized at 1,438 acres."

**Response 4:** The referenced changes in the draft permit were made to better clarify what wastestreams and other materials are authorized to be applied to the irrigation tract. This did not expand the list of authorized wastestreams from what was previously authorized.

The term "partially treated wastewater" refers to wastewaters that are routed through a portion of the wastewater treatment system. This may occur when full treatment is not needed for the specific wastestream or when a treatment unit is temporarily unavailable and the effluent quality is compliant with the required limitations specified in the permit.

The term "untreated wastewater" refers to wastewaters that are not routed through any portion of the wastewater treatment system. This may occur when no treatment is needed for the specific wastestream or when the treatment unit typically used is temporarily unavailable and the effluent quality is compliant with the required limitations specified in the permit.

The term "fertilizers" refers to supplements that are applied to the irrigation tract, to provide nutrients to the vegetative cover.

The term "maintenance chemicals" refers to supplements that are routed through the irrigation system for maintenance purposes of the wastewater distribution system.

The term "pesticides" refers to supplements that are applied to the irrigation tract to provide insect and other pest control for the vegetative cover.

The term "treatment chemicals" refers to supplements that are applied to the irrigation tract to provide treatment/conditioning of the soils and/or vegetative cover.

The term "off-spec product" refers to product that does not meet manufacturer specifications and are applied to the irrigation tract as either a waste or as a supplement substitute.

The term "any other materials and/or substances" refers to any other supplements that may be legitimately applied to the irrigation tract that are not previously described and/or listed.

**Comment 5:**

Ms. Sahs states that the Notice is defective because the Applicant failed to mail notice to all persons required by law. On information and belief, Darlene Bellows owns the eastern corner of the property designated as No. 6 on the Applicant's landowner map and was not provided mailed notice.

**Response 5:** For new permit and major amendment applications, the Applicant must provide a list of affected landowners and a map showing their location(s). Affected landowners are landowners located adjacent to the wastewater treatment plant site and landowners with property on either side of the receiving stream for approximately one mile downstream from the point of discharge. The Applicant is required to certify that the submitted application is accurate. The TCEQ mails notice of the application to the affected landowners and others on

the mailing list for the application, which is maintained by the Office of Chief Clerk.

Additionally, for all applications (new, major amendment and renewal applications), the agency prepares two public notices; the Notice of Receipt and Intent to Obtain a Water Quality Permit (NORJ) and the Notice of Application and Preliminary Decision for a Water Quality Permit (NAPD). The Applicant is required to publish these notices in a local newspaper and to provide a copy of the application, proposed draft permit and Executive Director's Preliminary Decision in a public place for viewing and copying.

In this case, the adjacent landowners map submitted by the Applicant does identify a Mildred Bellows as an adjacent landowner and TCEQ records indicate that notices were sent to this individual.

**Comment 6:**

Ms. Sahs states that the Notice is defective because the Applicant failed to publish notice within the 45-day period required by 30 TAC 39.405(a). The Stewarts urge the Executive Director to return the application and instruct the Applicant to resubmit it, as authorized by 30 TAC § 39.405(a)(2).

**Response 6:** 30 TAC § 39.405 (a) gives the Executive Director the discretion to suspend further processing of an application if a notice is not published within 45 days of receiving the notice from the Chief Clerk. In this case, the Executive Director did not suspend processing of the application and the notice was published by the Applicant as required by rule.

**Comment 7:**

Ms. Sahs comments that the Notice is defective because the Amended Notice, which was published after expiration of the 45-day period, contains several typographical errors. The most serious is the failure to include the proposed hydraulic application rate. Even if the Executive Director does not return the application as requested above, at a minimum, the Applicant should be required to re-publish an accurate notice.

**Response 7:** It is not clear which typographical errors Ms. Sahs is referencing. However, the Notice does include appropriate references to the Applicant's amendment requests with respect to the requested increase in the hydraulic application rate. Specifically, in the first paragraph it is stated "Diamond Shamrock Refining Company, L.P., ... has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to TPDES Permit No. WQ0001353000 to ... increase the hydraulic application rate from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year."

**Comment 8:**

Ms. Sahs states that under 30 TAC § 60.1, the Applicant's history of poor compliance at this and other facilities requires denial of the amendment. In the alternative, the Applicant's poor compliance record requires additional conditions and terms in the proposed permit to minimize the likelihood of future violations.

**Response 8:** During the technical review, a compliance history review is conducted on the company and the site based on the criteria in Title 30, Chapter 60 of the Texas Administrative Code (TAC). The compliance history is reviewed for the company and site for the five-year period prior to the date the permit application was received by the Executive Director. The compliance history includes multimedia compliance-related components about the site under review. These components include the following: enforcement orders, consent decrees, court judgments, criminal convictions, chronic excessive emissions events, investigations, notices of violations, audits and violations disclosed under the Audit Act, environmental management systems, voluntary on-site compliance assessments, voluntary pollution reduction programs and early compliance.

This permit application was received after September 1, 2002, and the company and site have been rated and classified pursuant to Title 30, Chapter 60 of the Texas Administrative Code (TAC). A company and site may have one of the following classifications and ratings:

High:	rating < 0.10 (above-average compliance record)
Average by Default:	rating = 3.01 (these are for sites which have never been investigated)
Average:	0.10 < rating < 45 (generally complies with environmental regulations)
Poor:	45 < rating (performs below average)

This site has a rating of (5.35) and a classification of AVERAGE. The company rating and classification, which is the average of the ratings for all sites the company owns, is 2.85 and AVERAGE. Based on this rating and classification, the Executive Director has determined that the company is operating in compliance with rules and regulations, and this permit should be issued.

**Comment 9:**

The conditions of the permit fail to provide clear and enforceable terms, as required by Texas Water Code § 26.029. Additionally, the proposed permit fails to prescribe adequate monitoring and reporting, in violation of Texas Water Code § 26.042.

**Response 9:** The conditions of the permit and the monitoring requirements are standard requirements which are contained in TCEQ issued water quality permits. If the Applicant fails to comply with all requirements of the permit, they are subject to administrative enforcement action, fines, and penalties.

Suspected incidents of noncompliance with the permit or TCEQ rules may be reported by calling toll-free, 1-888-777-3186 or calling the TCEQ, Region 14 Corpus Christi Office at (361) 825-3101. Citizen complaints may also be filed on-line at <http://www.tnrcc.state.tx.us/cgi-bin/enforcement/complaints>.

**Comment 10:**

Ms. Sahs states that the proposed amendment must be denied because it does not comply with agency rules; would allow contamination of groundwater and surface water; and would cause health hazards.

**Response 10:** The proposed permit complies with all applicable agency rules. Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of aquatic life and human health. In cases where a pollutant is monitored as a requirement of the current permit, historical self report data was also considered in the screening against calculated water quality-based effluent limitations for the protection of aquatic life and human health.

All effluent limitations in the draft permit comply with applicable EPA categorical guidelines for required technology-based effluent limitations and with Texas Surface Water Quality Standards (TSWQS) for water quality-based effluent limitations for aquatic life and human health protection.

Specific conditions are included in the draft permit to protect ground water and surface water from any adverse impact from the irrigation activities. These conditions include hydraulic application rate limitations, effluent quality limitations, prohibition on the land application of effluent during specific situations (within 24 hours following a measured rainfall of one-half inch or greater and/or on any zone that contains standing water), and soil monitoring requirements. The draft permit also requires irrigation practices be managed to prevent contamination of ground water and surface water.

**Comment 11:**

The proposed permit would authorize the discharge of treated, partially treated, and untreated wastewater, fertilizers, maintenance chemicals, pesticides, treatment chemicals, off-spec product, and any other materials and/or substances to the irrigation tract. The current permit authorizes irrigation of effluent from the process wastewater treatment facility only. The proposed permit wastewater definition including "and any other material and/or substance applied to the irrigation tract" would authorize irrigation of any material meeting a limited set of effluent criteria. Examples of the types of materials that could be irrigated without violating permit terms include contaminated and untreated groundwater, brines, radioactive materials, materials with high concentrations of petroleum hydrocarbons, solvents, and materials containing toxic metals other than chromium.

**Response 11:** Please refer to the Response to Comment No. 4.

**Comment 12:**

The monitoring frequency and parameters proposed in the permit would not protect downstream soil and water resources. Proposed monitoring fails to effectively limit the type and amount of waste because no regular monitoring frequency will effectively capture potentially erratic and sporadic material applications. There is no requirement that monitoring adequately represent the range, frequency, and character of materials applied. The specific monitoring frequency would only be appropriate if irrigated wastewater were limited to effluent from a reasonably stable treatment process. It is not appropriate for the range of materials that could be applied to the irrigation fields under the proposed permit conditions.

**Response 12:** The monitoring requirements (required parameters and frequencies) proposed in the draft permit are protective of aquatic life, human health, and the environment (downstream soils and water resources).

The required parameters were selected based on required categorical guidelines for petroleum refineries (40 CFR Part 419) and water quality screening of the effluent in accordance with approved TSWQS rules and implementation procedures. The required parameters are representative of the types of wastes and materials that are generated and processed at the facility.

The monitoring frequencies specified in the draft permit are consistent with "TCEQ Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits," TCEQ Document No. 98-001.000-OWR-WQ, May 1998. The selection of the proposed monitoring frequencies takes into account the potential for effluent quality and composition variability.

Provision No. 3.a. on Page No. 5 of the draft permit states "Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity." The permittee's compliance with this requirement should insure that samples taken for effluent self reporting are representative of the type of the effluent that is land applied for irrigation.

**Comment 13:**

Given the broad authorization of materials that could be applied to the irrigation tract, there is no single location from which samples could be collected to represent the range of materials applied.

**Response 13:** Sampling of the wastewater land applied to the irrigation tract is after it is pumped from the effluent storage pond on its way to the irrigation sprinklers. The current sampling procedure does capture a representative composite of everything that has been sent to the storage pond.

Provision No. 3.a. on Page No. 5 of the draft permit states "Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity." The permittee's compliance with this requirement should insure that samples taken for effluent self reporting are representative of the quality of the effluent land applied for irrigation.

**Comment 14:**

The proposed set of effluent parameters is significantly limited given the wide range of materials that can be applied to the irrigation tract. The self-reporting data for wastewater effluent presented in the application for this permit renewal does not represent materials that may be discharged to the irrigation fields other than wastewater.

**Response 14:** The proposed permit contains technology-based effluent limits reflecting the best controls available for parameters that are expected to be found in the wastewater. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity data bases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

The proposed permit includes technology-based effluent limitations for chemical oxygen demand, total suspended solids, oil and grease, phenols, sulfides, total chromium, and pH at

Outfall 001 that are based on EPA categorical guidelines for Petroleum Refining Point Source Category (40 CFR Part 419).

In addition to the technology-based effluent limitations discussed above, the proposed draft permit includes water quality-based effluent limitations (for aquatic life protection) for carbonaceous biochemical oxygen demand (5-day), ammonia (as Nitrogen), and hexavalent chromium at Outfall 001 that are more stringent than the required calculated technology-based effluent limitations.

With the exception of total suspended solids, all of the parameters above have also been designated with effluent limitations and monitoring requirements for the wastewaters applied to the irrigation tract. The selection of limited parameters for the irrigation tract, and their respective limitations, are consistent with the types (character and sources) of wastewaters associated with petroleum refinery operations.

**Comment 15:**

The permit proposes no limit on total dissolved solids, sulfate, chlorides, or sodium concentrations in effluent discharged to the irrigation area. These substances have been detected in downstream water samples at concentrations substantially higher than in a sample from a similar local stream outside of the irrigated effluent area. These substances are also measured at significantly elevated concentrations in shallow groundwater samples from the vicinity of the irrigation fields compared to shallow groundwater elsewhere within the Live Oak Underground Water Conservation District.

**Response 15:** The irrigation tract is to be designed, managed, and operated in a manner to prevent adverse impact to local groundwater resources and local surface waters. Specifically, the draft permit contains Other Requirements Provision No. 6.H. to address this issue. Other Requirements Provision No. 6.H. states:

"Irrigation practices shall be managed so as to prevent contamination of ground water and surface water. Practices shall prevent the occurrence of nuisance conditions. Wastewater shall be applied evenly so that potential for runoff of irrigation water is minimized or prevented. Tailwater control facilities shall be provided, as necessary, to insure that there is no discharge of wastewater or commingled process wastewater from the irrigation site. Commingled process wastewater includes applied wastewater that has not soaked into the ground and that comes into contact with storm water runoff."

Compliance with this requirement should suitably protect local groundwater and surface waters from any adverse impacts from the irrigation operations.

**Comment 16:**

On August 5, 2004 Valero Three Rivers Refinery notified TCEQ of an additional 50 gallon per minute wastewater stream from the refinery sulfate scrubber. The letter identified sodium sulfate as the primary component of the waste stream, but provided no information regarding sodium sulfate concentrations or total mass load. There is no limit to either sulfate or sodium in wastewater used for irrigation. Both of these chemical will impair water and soils for ranching operations.

**Response 16:** With respect to potential impacts of sodium, sulfate, and/or other salts, the draft permit contains the following provisions:

Other Requirements Provision No. 6.E.:

Surficial samples of irrigated soil shall be collected quarterly from the most heavily irrigated areas. The exchangeable sodium percentage (ESP) of each sample shall be analyzed. If the average of the value exceeds 20%, a program of calcium amendments shall be immediately implemented to reduce the ESP to approximately 10% or less. Results of the quarterly ESP testing shall be reported to the TCEQ, Water Quality Assessment Team (MC-150) and Industrial Permits Team (MC-148) of the Water Quality Division during September, December, March, and June of each year.

Other Requirements Provision No. 6.F.:

The permittee shall develop a written plan for investigation of elevated soil salinity and sodium adsorption ratios within the irrigation tract. The plan shall include detailed information regarding past, present and future management of soils, wastewater quality, and crops. Analytical results of historical wastewater and soil monitoring shall be incorporated in the investigation as is appropriate. The plan shall be submitted to the Water Quality Assessment Team (MC-150) of the Water Quality Division and a copy forwarded to the Industrial Permits Team (MC-148) of the Water Quality Division within 90 days following date of permit issuance. Approval for implementation of the plan shall be obtained from the Water Quality Assessment Team and the plan shall be initiated within 60 days of receiving the approval. This permit may be reopened to include additional requirements or limitations based upon a review of the information that is submitted.

Annual soil sampling from the root zone of the irrigated site is required. Sampling procedures shall employ accepted techniques of soil science for

obtaining representative analytical results. Analyses shall be performed for oil and grease, pH, total and nitrate nitrogen, potassium, phosphorus, and conductivity. The results of the annual sampling shall be reported to the TCEQ, Water Quality Assessment Team (MC-150) of the Water Quality Division during September of each year.

Other Requirements Provision No. 7:

The permittee shall develop an updated management plan that illustrates monitoring/management of nutrient salinity and sodic constituents within the effluent, soils, and crops. This plan shall address the loading rates of constituents contained within the effluent and long term management goals to address potential buildup of these constituents. Specifically, this plan shall include:

- A. An annual effluent analyses as required by the current permit provisions.
- B. Prior to land application of treated effluent, and annually thereafter, the permittee shall obtain representative soil samples from the root zone of each individual field of land application. Composite sampling techniques shall be used. Each composite sample shall represent no more than each individual field with no less than 15 sub-samples representing each composite sample. Sub-samples shall be composited by like sampling depth and soil type for analysis and reporting. Soil types are soils that have like topsoil or plow layer textures. These soils shall be sampled individually from 0 to 12 inches annually. Soils shall be sampled at depth increments of 0-12, 12-24, and 24-36 inches every third year or triennium. The permittee shall sample and analyze soils in September-October of each year. Samples shall be taken within the same 45 day time-frame each year.

The permittee shall provide annual and triennial soil analysis of the land application area for pH [2:1 (v/v) water/soil mixture], conductivity [2:1 (v/v) water/soil mixture]; total kjeldahl nitrogen (TKN); nitrate-nitrogen; and plant-available potassium, calcium, magnesium, sodium, sulfur, and phosphorus. The plant nutrient parameters shall be analyzed on a plant available or extractable basis. Phosphorus shall be analyzed according to the Mehlich III procedure; potassium, calcium, magnesium, sodium, and sulfur

may also be analyzed in the Mehlich III extract. Plant-available phosphorus, potassium, calcium, magnesium, sodium, and sulfur shall be reported on a dry weight basis in mg/kg; conductivity shall be reported in mmho/cm; and pH shall be reported in standard units. TKN procedures that use methods that rely on mercury as a catalyst are not acceptable.

The permittee shall submit the results of the annual and triennial soil sample analyses with copies of the laboratory reports to the TCEQ Water Quality Assessment (WQA) Team of the Water Quality Division (MC-150); Region 14 Office (MC-R14); and the Enforcement Division (MC-224) no later than the end of December of each sampling year. If wastewater is not applied in a particular year, the permittee shall notify the same TCEQ offices and indicate that wastewater has not been applied on the approved land disposal site during that year.

**Comment 17:**

Ms. Sah's comments that the draft permit proposes no limit on selenium concentrations. Existing wastewater quality data for the refinery show significant variability in the concentrations, and all but four results were above screening values. Because effluent from the irrigation fields migrates onto Mr. Stewart's property used for livestock, and because selenium can bioaccumulate in plants, the permit limit should be 0.02 mg/l, which is the maximum recommended concentration for irrigation.

**Response 17:** The Applicant requested that selenium monitoring requirements be removed from the current permit. After review of the application analytical data for total selenium, it was noted that there was significant variability in the individual results submitted but all four results were above the screening values to continue monitoring requirements and/or impose new effluent limitations.

A review of the historical self report data indicates that of the 26 months that reported discharges in the reporting period of August 2002-September 2005, the reported monthly average values for no months exceed either of the screening values for effluent monitoring requirements or effluent limitations. The reported daily maximum values for 7 months exceeded the effluent monitoring requirement screening value, and the reported daily maximum values for 4 months exceeded the effluent limitation requirement screening value.

Typical screening procedures require the average effluent value be screened against the respective water quality screening values. The screening values to require effluent monitoring requirements and to require effluent limitations are 0.0118 ug/l and 0.0143 ug/l, respectively. The average of the monthly average values for the reporting period of August 2002-September 2005 is 0.004 ug/l and the highest of the monthly average values for that reporting period is 0.0107

It was determined that effluent limitations are not necessary at this time because the historical self reporting values are below the screening values. It has also been recommended that the Applicant's request to remove monitoring requirements for total selenium not be processed at this time due to the variability observed in the submitted application data. Therefore, monitoring requirements for total selenium are continued in the draft permit.

**Comment 18:**

The draft permit fails to limit the volume of material that could be irrigated, except that the hydraulic loading must be not more than 3.54 acre-feet per acre per year. If the Applicant were to convert the entire 1,438 acres of the existing irrigation tract to irrigation fields, an average daily irrigation volume of 4.5 million gallons per day could be irrigated.

The draft permit would allow the refinery to increase the hydraulic loading rates on the irrigation area from the currently allowed 2.95 acre-feet per acre per year to 3.54 acre-feet per acre per year. Two separate water balance calculations have been conducted, one by the TCEQ and one by the Applicant, to justify the requested increase in hydraulic loading. Both water balances are significantly flawed because they are based on average monthly precipitation and evapotranspiration amounts. The TCEQ water balance calculations show an effluent irrigation capacity of 65.41 inches, equivalent to 5.45 acre-feet per acre per year. The Applicant's water balance proposes that 9.8 acre-feet per acre per year be applied to the tract.

Both water balances fail to consider conditions wetter than average. They are demonstrated to be false and unprotective by historical and on-going inundation of low-lying property downstream from the irrigation tract in the Old Slough watershed. These problems occurred at irrigation rates lower than the rate proposed in the draft permit and significantly lower than the five-to-ten foot hydraulic loading rate purportedly demonstrated to be acceptable by the water balances.

The commentator's water balance calculations are based on actual rainfall, evapotranspiration, and irrigation amounts for 849 days from January 1, 2003 through April 28, 2005. These calculations predict that an average of 11% of the irrigated volume migrated below the soil root zone through deep percolation during simulated period. The proposed permit would allow conditions in which the volume of wastewater escaping below the root zone would increase to

an average of about 21% of the volume applied. The proposed permit change to increase the hydraulic loading would exacerbate existing problems associated with effluent seepage, saturated soil and wet conditions on adjacent property.

**Response 18:** Hydraulic loading for land application (irrigation) permits is calculated based on the site-specific climatic conditions for the previous 25-year period due to the climatic variability that can occur year to year.

In addition to the hydraulic loading rate that is specified in the permit, the permit contains provisions impose appropriate controls to prevent over application of water on the irrigation fields, especially during wetter climate periods

Other Requirement Provision No. 6.H. states as follows: "Irrigation practices shall be managed so as to prevent contamination of ground water and surface water. Practices shall prevent the occurrence of nuisance conditions. Wastewater shall be applied evenly so that potential for runoff of irrigation water is minimized or prevented. Tailwater control facilities shall be provided, as necessary, to insure that there is no discharge of wastewater or co-mingled process wastewater from the irrigation site. Co-mingled process wastewater includes applied wastewater that has not soaked into the ground and that comes into contact with storm water runoff."

Other Requirement Provision No. 6.I. states as follows: No irrigation may be conducted within 24 hours following a measured rainfall of one-half inch or greater. No irrigation may be conducted on any zone that contains standing water.

**Comment 19:**

All of the water balances assume Coastal Bermuda hay production from the irrigated tracts. The water balances also assume that plant growth is unimpaired by wastewater irrigation. Coastal Bermuda grass consumes relatively high quantities of both water and nitrogen. If fields are irrigated with materials that are toxic to Coastal Bermuda, any reduction in the field productivity will increase water and effluent discharge to shallow groundwater and downstream properties.

**Response 19:** The irrigation water balance utilizes crop/site-specific input data for the variable assumptions associated with the wastewater irrigation activity. This data includes crop water consumption rates, crop salt tolerances, effluent conductivity, and historical local climatic data (evaporation and precipitation). The data utilized is from the more conservative portion of the acceptable range for a specific input. The final hydraulic loading application rate was calculated using these more conservative input values and is itself considered to be a conservative hydraulic loading application rate.

In addition to the conservative hydraulic loading application rate, the permit includes specific provisions (Other Requirements 6.H. and 6.I., discussed in the response to Comment No. 8 above) that minimize the potential of over application of wastewater to the irrigation tract. All of these requirements protect against the off-site (surface and subsurface) migration of wastewater from the irrigation activities.

**Comment 20:**

The draft permit would increase the minimum irrigation area from 341.5 acres to 474 acres. The refinery currently irrigates approximately 471.5 acres. This permit change will not reduce the hydraulic loads on the irrigation fields or reduce downstream property inundation. An irrigation area of about 884 acres would be required to achieve the same hydraulic loading as the current permit with an increase in average daily flow from 0.8 to 1.5 million gallons per day. Even with a larger irrigation area and no change in effluent application rates, however, there would continue to be effluent migration onto downstream properties.

**Response 20:** The increased authorized irrigation application rate and increased minimum irrigation area do represent a potential increased hydraulic loading of effluent on the irrigation tract. The increased daily average permitted flow at Outfall 001 is an entirely independent issue that has no direct correlation on the hydraulic loading of the irrigation tract.

The only requirements of the permit that relate to the allowable quantity of wastewater that can be applied to the irrigation tract are the hydraulic loading application rate, the minimum application area, and the total application area.

The hydraulic application rate has been increased from 2.95 acre-feet/acre/year to 3.54 acre-feet/acre/year; the minimum irrigation area has been increased from 341.5 acres to 474 acres; and the size of the irrigation tract has increased from 1,376 acres to 1,438 acres. Based on these changes, the annual volume of wastewater that can be disposed of via irrigation at this facility has increased from 1,322.69 million gallons per year to 1,658.75 million gallons per year. As discussed in the responses to Comments Nos. 5, 6, and 8 above, the permit includes specific provisions to minimize the potential of surface and subsurface migration of wastewater from the irrigation tract.

**Comment 21:**

The current draft permit overstates available effluent storage by 20 acre-feet, or 10 percent. The proposed permit requires the Applicant to maintain and use the existing storage pond with a

maximum storage capacity of 224 acre-feet. The permit also requires, however, that the pond be managed to maintain at least two feet of freeboard. With two feet of freeboard the storage capacity is only 204 acre-feet. Furthermore, the permit specifies no maximum volume of water to the irrigation fields, in terms of daily average flow. It allows Ponds 5, 6, and 7 to be used to store storm water, sandfilter backflush, or deep well backflush. There is no limitation on the volume of these materials and therefore no requirement that storage be available for wastewater effluent during conditions when there is insufficient soil moisture capacity for irrigation.

**Response 21:** Storage requirements are only specified when irrigation is the only authorized method of wastewater disposal. Storage requirements are not necessary in this permit because the permit authorizes the same wastewaters to be discharged via Outfall 001.

**Comment 22:**

The proposed permit eliminates monitoring and reporting requirements at Outfall 001 for antimony, arsenic, barium, cadmium, cyanide, lead, and fecal coliform.

**Response 22:** A review of the historical self report data indicated the average concentration reported for these parameters do not cause any water quality concerns with respect to water quality screening against the Texas Surface Water Quality Standards.

**Comment 23:**

The Water Quality Summary describes flow routes and water quality impacts of discharges through Outfalls 001 and 002. The permit fails, however, to describe effluent migration routes and water quality effects from irrigation of the soil and vegetative system at loading rates higher than plant uptake capacities. Samples from wells, seeps, and storage basins demonstrate an increase in total dissolved solids, sodium, sulfate, and chloride associated with the existing effluent irrigation operation. The lack of a description of potential irrigated effluent migration routes ignores potential impacts from the permitted irrigation. Without migration pathways and consideration of the potential impacts, there is no scientific basis for establishing protective irrigated effluent limits.

**Response 23:** The permit does not describe "potential irrigated effluent migration routes" because the requirements of the permit should prevent the migration of irrigated effluent to off-site water (surface and subsurface) sources. As discussed in the responses to Comments Nos. 5, 6, and 8 above, the requirements of the permit minimize the potential migration of irrigation effluent from the root zone of the land application site.

**Comment 24:**

The Applicant submitted four results for cyanide, one at 159 ug/l and three non-detect results (<20 ug/l). The aquatic life acute standard is 45.78 ug/l and the chronic standard is 10.69 ug/l of free cyanide. TCEQ has determined that the measured value is either an analytical anomaly or a statistical outlier and has deleted monitoring requirements for cyanide.

**Response 24:** In addition to the effluent quality analytical data submitted with the application the TCEQ reviewed historical effluent self-report data for cyanide at Outfall 001. All data for cyanide during the reporting period of July 2004 through February 2006 was non-detectable. Based on this review, the detectable result appears to be either an analytical anomaly or a statistical outlier. Based on this additional review, no limitations are recommended at this time for cyanide at Outfall 001. The amendment application includes a request to remove the monitoring requirements for cyanide at Outfall 001; based on the review above, it is recommended that monitoring requirements be removed from the draft permit.

**Comment 25:**

The permit would require the permittee to prepare a written plan for investigating elevated soil salinity, and an irrigation management plan. There are, however, no deadlines for submittal, no submittal process, and no provision for agency or public review of the plans. Furthermore, there is no requirement that the written plan address problems resulting from leaching refinery wastewater salts through irrigated soils to underlying groundwater and downstream water users.

The current permit required the permittee to develop a written plan for investigation of elevated soil salinity and sodium adsorption ratios within the irrigation tract and detailed information regarding past, present, and future management of soils, wastewater quality and crops. The plan was to be submitted to the TCEQ within 90 days of June 7, 2004. No plan was submitted until August 22, 2005.

These plans are critical to operating the effluent irrigation fields in a manner that is protective of affected ground and surface water and soil resources. These written plans must be submitted prior to permit approval and included in the permit to protect downstream water and soil.

**Response 25:** The proposed permit requires that the written plan for investigation of elevated soil salinity and sodium adsorption ratios within the irrigation tract be submitted within 90 days following the date of permit issuance. Approval for implementation of the plan shall be obtained from the Water Quality Assessment Team and the plan shall be initiated within 60 days of receiving the approval. This requirement is included as "Other Requirements" Provision No. 6.F., and states as follows:

"The permittee shall develop a written plan for investigation of elevated soil salinity and sodium adsorption ratios within the irrigation tract. The plan shall include detailed information regarding past, present and future management of soils, wastewater quality, and crops. Analytical results of historical wastewater and soil monitoring shall be incorporated in the investigation as is appropriate. The plan shall be submitted to the Water Quality Assessment Team (MC -150) of the Water Quality Division and a copy forwarded to the Industrial Permits Team (MC-148) of the Water Quality Division within 90 days following date of permit issuance. Approval for implementation of the plan shall be obtained from the Water Quality Assessment Team and the plan shall be initiated within 60 days of receiving the approval. This permit may be reopened to include additional requirements or limitations based upon a review of the information that is submitted."

**Comment 26:**

The Fact Sheet and Executive Director's Preliminary Decision presents a quantitative description of the refinery discharge based on Monthly Effluent Report data from August 2002 through September 2005. The data describes the average of the daily average hexavalent chromium measurements as 0.032 lbs/day and the average of the daily average total chromium as 0.0116 lbs/day. Since hexavalent chromium is one component of total chromium, the mass of total chromium must be at least as high as the mass of hexavalent chromium.

**Response 26:** TCEQ personnel agree that scientifically the total chromium value must be equal to or greater than the corresponding hexavalent chromium value. It was observed that the reported values for both species of chromium were normally around the minimum analytical level specified. At this low level of detection it is not abnormal for some values for the hexavalent to be reported as higher than the total. When this occurs, the permittee is required to report the data based on the actual analytical results obtained. The permittee is not allowed to substitute the higher hexavalent chromium value for the lower total chromium value for reporting purposes.

**Comment 27:**

Under the proposed permit terms, significant information regarding operation of the irrigation area would be kept by the operator onsite and would only be available for inspection to authorized TCEQ personnel. The interests of potentially affected persons would be better served by requiring the information to be sent to the TCEQ and made available for public review.

**Response 27:** If a third party (adjacent landowner, member of the general public, other government official, etc.) believes that the facility is violating the irrigation conditions of the permit, the third party may contact the Corpus Christi Region 14 office and request an inspector

to visit the site and copy the requested significant information that the permittee must retain on-site for 3 years.

**Comment 28:**

Other Requirements Provision No. 8 requires an annual vegetative analysis for selenium. The permit does not specify to whom the results must be submitted.

**Response 28:** The following sentence has been added to "Other Requirements" Provision No. 8:

"The permittee shall submit the results of the annual vegetative analysis for selenium contained by the proposed crop with copies of the laboratory reports to the TCEQ Water Quality Assessment (WQA) Team of the Water Quality Division (MC-150); Region 14 Office (MC-R14); and the Enforcement Division (MC-224)."

**Comment 29:**

The TCEQ interoffice memorandum (Chadwick/Reynolds dated 11/08/2005) states "*the lower TDS content of the wastewater would no be expected to increase the TDS of the existing moderate saline shallow groundwater in the region.*" Regional shallow groundwater quality, in the memorandum, is based on wells monitoring the irrigation site and surface water that "is probably in hydrologic connection" with shallow groundwater beneath the irrigation site. All of the locations analyzed as a basis for the characteristics of shallow groundwater in the region are impacted by refinery waste irrigation. Data from shallow wells and surface water that are not impacted by waste irrigation show significantly lower concentrations of total dissolved solids, chlorides, sodium, and sulfate. The lower total dissolved solids concentration in the effluent storage pond compared to concentrations observed in the groundwater is attributable to evapotranspiration.

The TCEQ interoffice memorandum (Chadwick/Reynolds dated 11/08/2005) states "*The additional information submitted for the pond liner construction lends support that the ponds do not contribute to the elevated TDS content of the shallow groundwater.*" Even if the pond liners have perfect integrity, irrigation of the wastewater in the ponds onto unlined areas has contributed to the elevated total dissolved solids content of shallow groundwater.

**Response 29:** Shallow groundwater in the area, out of the influence by the facility irrigation, also show saline water quality. Water well 7831802 was also reviewed for shallow groundwater quality from 60 feet below ground level. The well is located west of Hwy 281 near the irrigation area but not influenced from irrigation practices. The water quality was tested 3/25/2005 and showed 3,250 total dissolved solids which is characterized as moderately saline. The

groundwater impact evaluation dated 1997 and 2005 found that the information submitted with the permit application and TWDB groundwater quality data together indicated that this facility as proposed should provide adequate protection of existing (existing as of 1997) groundwater in the area.

In response to public comment, the Executive Director has changed certain provisions of the draft permit. These changes and the reasons for these changes are more fully described above.

1. The following sentence has been added to Other Requirements Provision No. 8:

"The permittee shall submit the results of the annual vegetative analysis for selenium contained by the proposed crop with copies of the laboratory reports to the TCEQ Water Quality Assessment (WQA) Team of the Water Quality Division (MC-150); Region 14 Office (MC-R14); and the Enforcement Division (MC-224)."

In addition to the changes above the Executive Director has changed certain provisions of the draft permit based on the request of the Applicant in a letter dated June 8, 2007. The following changes make the proposed draft permit more stringent than the draft permit that on file at the time of public notice:

1. The total dissolved solids (TDS) daily average effluent limitation of 26,504 lbs/day is changed to 23,400 lbs/day on pages 2 and 2b of the proposed draft permit.
2. The following new provision is added to the proposed draft permit as "Other Requirements" Provision No. 10:

"The permittee shall sample Outfall 002 under the following conditions:

- A. Once during every calendar quarter that a discharge event occurs via Outfall 002, and
- B. During any discharge event at Outfall 002 following any overtopping of containment areas.

Samples shall be analyzed for the following constituents: Benzene, Toluene, Ethylbenzene, and Xylene (BTEX); Total Chromium; Hexavalent Chromium; Total Mercury; Total Zinc; Total Copper; Total Selenium; and Total Silver. The monitoring results shall be reported to the TCEQ, Industrial Permits Team (MC-148) of the Water Quality Division, Region 14 Office, and to the Enforcement Division (MC 224) by the 25th day of the month following the end of each

calendar quarter. This requirement is effective upon date of permit issuance and lasting until April 30, 2010."

In addition to the changes above the Executive Director has made corrections with respect to TCEQ team name references in the proposed draft permit:

1. The team reference of "TCEQ, Applications Review and Processing Team (MC-148)" in Other Requirements Provision No. 6.E. has been replaced with the team reference of "Water Quality Assessment Team (MC-150)."
2. The team reference of "TCEQ, Applications Review and Processing Team (MC-148) of the Water Quality Division" in the second paragraph of Other Requirements Provision No. 6.F. has been replaced with the team reference of "Water Quality Assessment Team (MC-150) of the Water Quality Division."

Inclusion of these changes does not require notice to be republished.

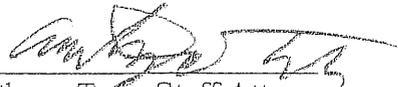
Respectfully submitted,

TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

Glenn Shankle, Executive Director

Stephanie Bergeron Perdue, Director  
Environmental Law Division

By:

  
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REPRESENTING THE  
EXECUTIVE DIRECTOR OF THE  
TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

CERTIFICATE OF SERVICE

I certify that on March 28, 2008, the foregoing was sent by first-class mail, agency mail, e-mail or facsimile to all persons on the attached mailing list.

  
\_\_\_\_\_  
Anthony Tatu, Staff Attorney  
Environmental Law Division, MC 173

Buddy Garcia, *Chairman*  
Larry R. Soward, *Commissioner*  
Bryan W. Shaw, Ph.D., *Commissioner*  
Glenn Shankle, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

April 4, 2008

TO: Persons on the attached mailing list.

RE: Diamond Shamrock Refining Company, L.P.  
TPDES Permit No. WQ0001353000

### **Decision of the Executive Director.**

The executive director has made a decision that the above-referenced permit application meets the requirements of applicable law. **This decision does not authorize construction or operation of any proposed facilities.** Unless a timely request for contested case hearing or reconsideration is received (see below), the TCEQ executive director will act on the application and issue the permit.

Enclosed with this letter is a copy of the Executive Director's Response to Comments. A copy of the complete application, draft permit and related documents, including public comments, is available for review at the TCEQ Central office. A copy of the complete application, the draft permit, and executive director's preliminary decision are available for viewing and copying at the Live Oak County Branch Library, 102 East Leroy Street, Three Rivers, Texas.

If you disagree with the executive director's decision, and you believe you are an "affected person" as defined below, you may request a contested case hearing. In addition, anyone may request reconsideration of the executive director's decision. A brief description of the procedures for these two requests follows.

### **How To Request a Contested Case Hearing.**

It is important that your request include all the information that supports your right to a contested case hearing. You must demonstrate that you meet the applicable legal requirements to have your hearing request granted. The commission's consideration of your request will be based on the information you provide.

The request must include the following:

- (1) Your name, address, daytime telephone number, and, if possible, a fax number.
- (2) If the request is made by a group or association, the request must identify:
  - (A) one person by name, address, daytime telephone number, and, if possible, the fax number, of the person who will be responsible for receiving all communications and documents for the group; and
  - (B) one or more members of the group that would otherwise have standing to request a hearing in their own right. The interests the group seeks to protect must relate to the organization's purpose. Neither the claim asserted nor the relief requested must require the participation of the individual members in the case.
- (3) The name of the applicant, the permit number and other numbers listed above so that your request may be processed properly.
- (4) A statement clearly expressing that you are requesting a contested case hearing. For example, the following statement would be sufficient: "I request a contested case hearing."

Your request must demonstrate that you are an **"affected person."** An affected person is one who has a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest affected by the application. Your request must describe how and why you would be adversely affected by the proposed facility or activity in a manner not common to the general public. For example, to the extent your request is based on these concerns, you should describe the likely impact on your health, safety, or uses of your property which may be adversely affected by the proposed facility or activities. To demonstrate that you have a personal justiciable interest, you must state, as specifically as you are able, your location and the distance between your location and the proposed facility or activities.

Your request must raise disputed issues of fact that are relevant and material to the commission's decision on this application. The request must be based on issues that were raised during the comment period. The request cannot be based solely on issues raised in comments that have been withdrawn. The enclosed Response to Comments will allow you to determine the issues that were raised during the comment period and whether all comments raising an issue have been withdrawn. The public comments filed for this application are available for review and copying at the Chief Clerk's office at the address below.

To facilitate the commission's determination of the number and scope of issues to be referred to hearing, you should: 1) specify any of the executive director's responses to comments that you dispute; and 2) the factual basis of the dispute. In addition, you should list, to the extent possible, any disputed issues of law or policy.

### **How To Request Reconsideration of the Executive Director's Decision.**

Unlike a request for a contested case hearing, anyone may request reconsideration of the executive director's decision. A request for reconsideration should contain your name, address, daytime phone number, and, if possible, your fax number. The request must state that you are requesting reconsideration of the executive director's decision, and must explain why you believe the decision should be reconsidered.

### **Deadline for Submitting Requests.**

A request for a contested case hearing or reconsideration of the executive director's decision must be in writing and must be **received by** the Chief Clerk's office no later than **30 calendar days** after the date of this letter: You should submit your request to the following address:

LaDonna Castañuela, Chief Clerk  
TCEQ, MC-105  
P.O. Box 13087  
Austin, Texas 78711-3087

### **Processing of Requests.**

Timely requests for a contested case hearing or for reconsideration of the executive director's decision will be referred to the alternative dispute resolution director and set on the agenda of one of the commission's regularly scheduled meetings. Additional instructions explaining these procedures will be sent to the attached mailing list when this meeting has been scheduled.

### **How to Obtain Additional Information.**

If you have any questions or need additional information about the procedures described in this letter, please call the Office of Public Assistance, Toll Free, at 1-800-687-4040.

Sincerely,



LaDonna Castañuela  
Chief Clerk

LDC/er

Enclosures

MAILING LIST  
for  
Diamond Shamrock Refining Company, L.P.  
TPDES-Permit No. WQ0001353000

FOR THE APPLICANT:

Lisa Trowbridge  
Diamond Shamrock Refining Company, L.P.  
P.O. Box 490  
Three Rivers, Texas 78071-0490

James Miertschin, P.E.  
P.O. Box 162305  
Austin, Texas 78716

PROTESTANTS/INTERESTED PERSONS:

Mary K. Sahs  
Carls McDonald & Dalrymple, LLP  
901 South Mopac Expressway  
Barton Oaks Plaza 2, Suite 500  
Austin, Texas 78746

Lloyd Stewart, Jr.  
1299 Highway 72  
Three Rivers, Texas 78071-2609

FOR THE EXECUTIVE DIRECTOR:

Anthony Tatu, Staff Attorney  
Texas Commission on Environmental Quality  
Environmental Law Division MC-173  
P.O. Box 13087  
Austin, Texas 78711-3087

Michael Sunderlin, Technical Staff  
Texas Commission on Environmental Quality  
Water Quality Division MC-148  
P.O. Box 13087  
Austin, Texas 78711-3087

FOR OFFICE OF PUBLIC ASSISTANCE:

Bridget Bohac, Director  
Texas Commission on Environmental Quality  
Office of Public Assistance MC-108  
P.O. Box 13087  
Austin, Texas 78711-3087

FOR PUBLIC INTEREST COUNSEL:

Blas J. Coy, Jr., Attorney  
Texas Commission on Environmental Quality  
Public Interest Counsel MC-103  
P.O. Box 13087  
Austin, Texas 78711-3087

FOR THE CHIEF CLERK:

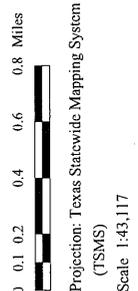
LaDonna Castañuela  
Texas Commission on Environmental Quality  
Office of Chief Clerk MC-105  
P.O. Box 13087  
Austin, Texas 78711-3087

Attachment E  
Map

**Diamond Shamrock Refining Company, LP**  
**TPDES Permit No. WQ00013530**  
**Map Requested by TCEQ Office of Legal Services**  
**for Commissioners Agenda**



Texas Commission on Environmental Quality  
 GIS Team (Mail Code 197)  
 P.O. Box 13087  
 Austin, Texas 78711-3087  
 June 30, 2008

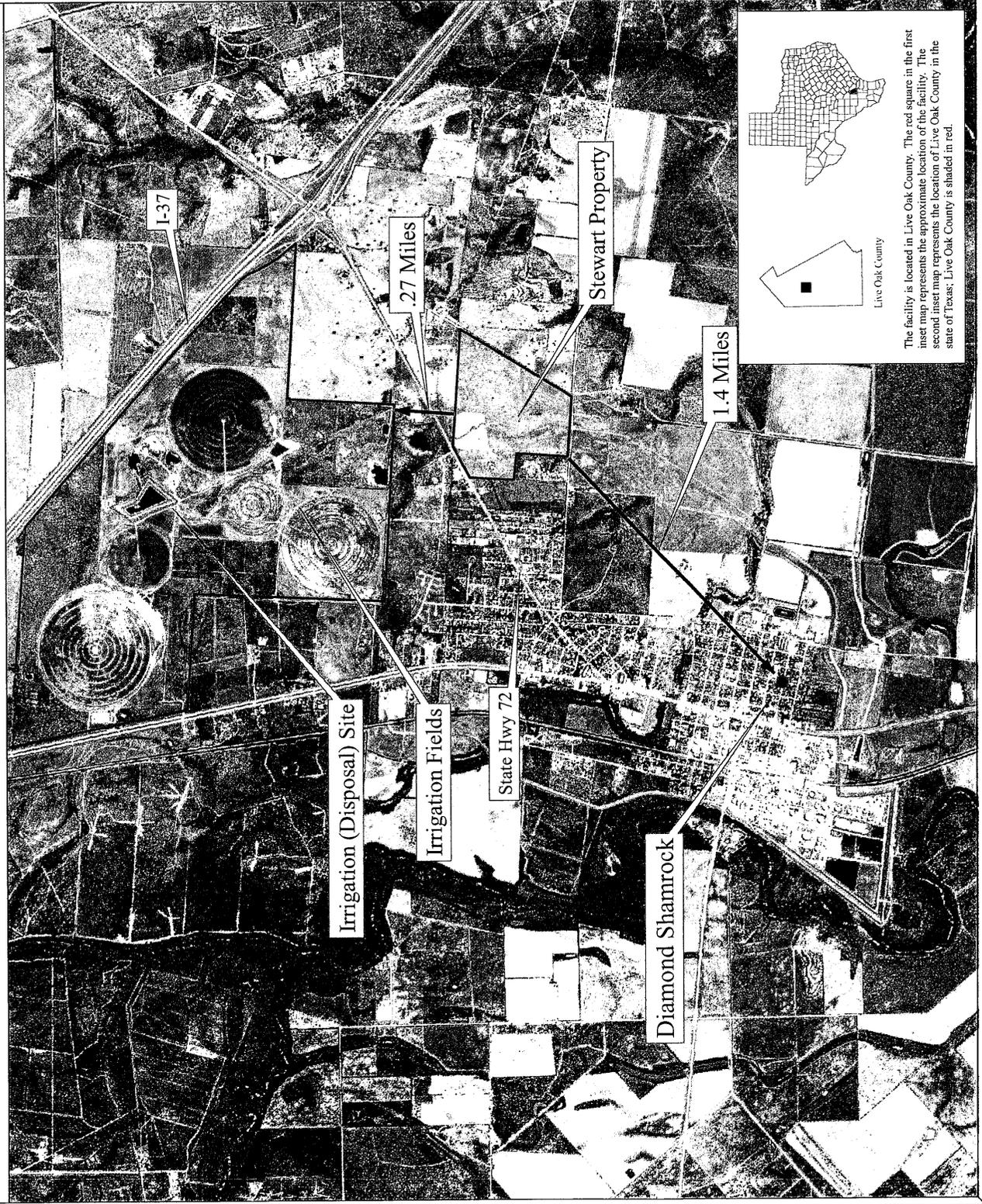


Source: The location of the facility was provided by the TCEQ Office of Legal Services (OLS). OLS obtained the site location information and the requestor information from the applicant. The counties are U.S. Census Bureau 1992 TIGER/Line Data (1:100,000). The background of this map is a source photograph from the 2004 U.S. Department of Agriculture Imagery Program. The imagery is one-meter Color-Infrared (CIR). The image classification number is b297\_1-1.

- This map depicts the following:
- (1) The approximate location of the facility. This is labeled "Diamond Shamrock".
  - (2) The approximate location of the irrigation (disposal) site. This is labeled "Irrigation (Disposal) Site".
  - (3) The approximate location of the Irrigation Fields. This is labeled "Irrigation Fields".
  - (4) The approximate location of the Stewart Property. This is labeled "Stewart Property".

This map was generated by the Information Resources Division of the Texas Commission on Environmental Quality. This map was not generated by a licensed surveyor, and is intended for illustrative purposes only. No claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information concerning this map, contact the Information Resource Division at (512) 239-0800.

McDonough, CNF-080624037



**Diamond Shamrock Refining Company, LP**  
**TPDES Permit No. WQ00013530**  
**Map Requested by TCEQ Office of Legal Services**  
**for Commissioners Agenda**



Texas Commission on Environmental Quality  
 GIS Team (Mail Code 197)  
 P.O. Box 13087  
 Austin, Texas 78711-3087  
 June 30, 2008



Projection: Texas Statewide Mapping System (TSMS)  
 Scale: 1:43,117

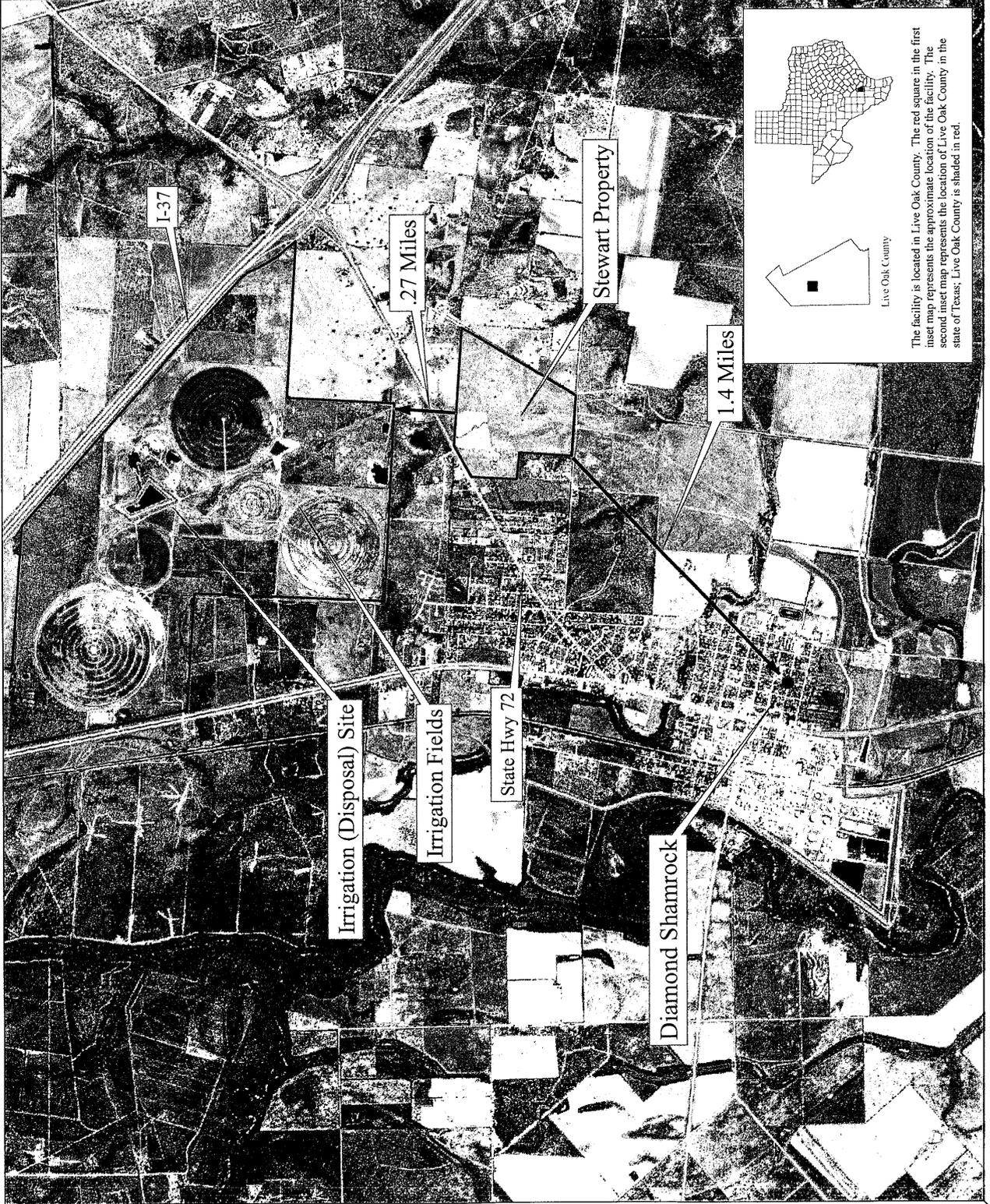
Source: The location of the facility was provided by the TCEQ Office of Legal Services (OLS). OLS obtained the site location information and the requestor information from the applicant. The counties are U.S. Census Bureau 1992 TIGER/Line Data (1:100,000). The background of this map is a source photograph from the 2004 U.S. Department of Agriculture Imagery Program. The imagery is one-meter Color-Infrared (CIR). The image classification number is tx297\_1-1.

This map depicts the following:

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The facility is located in Live Oak County. The red square in the first inset map represents the approximate location of the facility. The second inset map represents the location of Live Oak County in the state of Texas. Live Oak County is shaded in red.