Abesha Michael

From: Julie Podbielski <Julie.Podbielski@LCRA.ORG>
Sent: Thursday, June 27, 2024 2:10 PM
To: Abesha Michael
Cc: Bill Steinhauser
Subject: LCRA Response to NOD for Lost Pines 1 (WQ0004155000)
Attachments: LP1_Signature_Page_GenTex.pdf; LP1_ADMIN_3_Plain_Lang_Summary-revised.docx; LP1_Affected_Landowners_labels.docx; LP1_NORI_Spanish.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Ms. Michael,
Thank you for your email on June 14, 2024 with the attached Notice of Deficiency letter. After my conversation with you on June 17, LCRA has prepared the responses below for the items listed 1 through 7. Please note that Andrew Valencia, Senior Vice President, Generation at the Lower Colorado River Authority (LCRA) has authority to sign for the GenTex Power Corporation.

Item 1: A document titled Attachment LP1-Admin-3 was submitted with the original LCRA application on June 6 and included the Plain Language Summary (PS) in both English and Spanish. In our discussion, you asked that LCRA and GenTex Power Corporation and their CN numbers be included in the first sentence of the PLS. LCRA has edited the PLS and has revised the English and Spanish versions to reflect this change. The new versions are attached as a Microsoft Word document to this email.

Item 2: A document titled Attachment LP1-Admin-4 was submitted with the original LCRA application on June 6 and included the complete Public Involvement Plan. During our discussion, you said I did not need to resubmit the document.

Item 3: The Signature Page (Section 13 on page 11 of the Administrative Report) for the GenTex Power Corporation is provided as an attachment to this email.

Item 4: A document titled Attachment LP1-Admin-6 was submitted with the original LCRA application on June 6 and included the Affected Landowner Map. In an email on June 18, 2024, you said I did not need to resubmit the map.

Item 5: Per the TCEQ instructions, LCRA submitted four sets of landowner labels with the original application on June 6. TCEQ has requested LCRA email the labels in Avery 5160 format. The labels are attached to this email as a Microsoft Word document in the requested format.

Item 6: As requested, LCRA reviewed the NORI. The NORI is correct with the exception of the longitude and latitude for the facility, which were not correct. You sent me an email with the corrected coordinates. LCRA did not find any other errors or omissions in the NORI.

Item 7: The portion of the NORI unique to this application has been translated to Spanish and is attached as a Microsoft Word document.

Please do not hesitate to contact me if you have further questions.

Thank you, Julie

Julie Podbielski
Lower Colorado River Authority | Environmental Advisor

O 512-730-5633 **C** 512-461-4294
Julie.Podbielski@lcra.org

Item 13. SIGNATURE PAGE (Instructions, Pages 32-33)

Permit No: WQ0004155000

Applicant Name: GenTex Power Corporation

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

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document and can provide documentation in proof of such authorization upon request.

Signatory name (typed or printed): Andrew Valencia, PE

Signatory title: Senior Vice President, Generation, LCRA

Signature: _____ Date: 6/18/2024
(Use blue ink)

Subscribed and Sworn to before me by the said Andrew Valencia

on this 18 day of June, 2024.

My commission expires on the 13 day of April, 2028.

_____
Notary Public

TARA LISNOW
Notary Public, State of Texas
Comm. Expires 04-13-2028
Notary ID 132435881

[SEAL]

Travis
_____
County, Texas

Note: *If co-applicants are necessary, each entity must submit an original, separate signature page.*

LP1-ADMIN-3 Plain Language Summary

English:

The Lower Colorado River Authority (LCRA) (CN600253637) and the GenTex Power Corporation (CN600411581) own the Lost Pines 1 Power Plant (LP1) (RN100723915), which is a combined-cycle electric power generation facility that consists of two combustion turbine generators and two unfired Heat Recovery Steam Generators (HRSG) with an approximate gross generating capacity of 540 megawatts (MW). The facility, which is operated by LCRA, is located at 256 Power Plant Road, Bastrop County, Bastrop, Texas 78602.

LCRA and the GenTex Power Corporation have applied to TCEQ for a major amendment and renewal of the LP1's Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004155000. This permit authorizes the plant to discharge wastewaters from internal outfalls that are monitored by LP1 prior to discharge. These internal outfalls are authorized to discharge low volume wastewater, stormwater, heat recovery generator wash water, and boiler cleaning wastewater into a discharge canal shared by the Sim Gideon Power Plant (SGP), which is located adjacent to LP1. LP1 also discharges once-through and auxiliary cooling water into the discharge canal, and SGP is authorized to monitor and discharge this LP1 wastewater through its Outfall 001 under TPDES Permit No. WQ0002052000. LCRA and the GenTex Power Corporation are requesting a major amendment to add a new internal Outfall 201 to authorize the discharge of treated domestic wastewater. Other requested changes include modification of the existing Outfall 401 to include authorization to discharge any "metal cleaning wastes" generated at the plant in addition to heat recovery generator wash water and boiler cleaning wastewaters, and an update to the off-site wastewater sources to be discharged via the LP1 outfalls.

The discharge of low volume waste and metal cleaning waste via internal outfalls from the LP1 facility are subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: total suspended solids, oil and grease, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total iron, total copper, and pH. Sanitary domestic wastewater from LP1 is treated in an on-site aerobic treatment system. The proposed discharge of treated domestic wastewater from Outfall 201 is subject to requirements from 30 TAC Chapter 309 (Domestic Wastewater Treatment Limitations). The pollutants expected from domestic wastewater discharges are: total residual chlorine, total suspended solids, Biochemical Oxygen Demand 5-day (BOD5), and pH.

Spanish:

La Lower Colorado River Authority (LCRA) (CN600253637) y la GenTex Power Corporation (CN600411581) son propietarias de la Planta Eléctrica Lost Pines 1 (LP1) (RN100723915), que es una instalación de generación de energía eléctrica de ciclo combinado que consta de dos generadores de turbina de combustión y dos generadores de vapor de recuperación de calor sin combustión (HRSG) con una capacidad de generación bruta aproximada de 540 megavatios (MW). La instalación, que opera la LCRA, está ubicada en el 256 Power Plant Road, Condado de Bastrop, Bastrop, Texas 78602.

LCRA y GenTex Power Corporation han solicitado a TCEQ una enmienda importante y renovación del Permiso No. WQ0004155000 del Sistema de eliminación de descargas contaminantes de Texas (TPDES) de LP1. Este permiso autoriza a la planta a descargar aguas residuales de desagües internos que son monitoreados por LP1 antes de la descarga. Estos desagües internos están autorizados para descargar aguas residuales de bajo volumen, aguas pluviales, agua de lavado del generador de

recuperación de calor y aguas residuales de limpieza de calderas en un canal de descarga compartido por la planta de energía Sim Gideon (SGP), que se encuentra adyacente a LP1. LP1 también descarga agua de enfriamiento auxiliar y de un solo paso en el canal de descarga, y SGP está autorizada a monitorear y descargar estas aguas residuales de LP1 a través de su desagüe 001 de conformidad con el Permiso TPDES No. WQ0002052000. LCRA y GenTex Power Corporation solicitan una enmienda importante para agregar un nuevo desagüe interno 201 para autorizar la descarga de aguas residuales domésticas tratadas. Otros cambios solicitados incluyen la modificación del desagüe 401 existente para incluir la autorización para descargar cualquier "desecho de limpieza de metales" generado en la planta, además del agua de lavado del generador de recuperación de calor y las aguas residuales de limpieza de calderas, y una actualización de las fuentes de aguas residuales fuera del sitio que se descargarán a través de los desagües de LP1.

La descarga de desechos de bajo volumen y desechos de limpieza de metales a través de desagües internos de la instalación de LP1 está sujeta a las pautas federales de limitación de vertidos del 40 CFR Parte 423. Los contaminantes que se esperan de estas descargas según el 40 CFR Parte 423 son: sólidos suspendidos totales, aceite y grasa, demanda bioquímica de oxígeno (DBO), demanda química de oxígeno (DQO), hierro total, cobre total y pH. Las aguas residuales sanitarias domésticas de LP1 se tratan en un sistema de tratamiento aeróbico en el sitio. La descarga propuesta de aguas residuales domésticas tratadas del desagüe 201 está sujeta a los requisitos del Capítulo 309 del TAC 30 (Limitaciones del tratamiento de aguas residuales domésticas). Los contaminantes esperados de las descargas de aguas residuales domésticas son: cloro residual total, sólidos suspendidos totales, demanda bioquímica de oxígeno de 5 días (DBO5) y pH.

LP1-NORI:
Spanish

SOLICITUD. Autoridad del Bajo Río Colorado y GenTex Power Corporation, P.O. Box 220, Austin, Texas 78767, que poseen una instalación de generación de energía eléctrica de ciclo combinado, han solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) que enmiende el Permiso N.º WQ0004155000 (I.D. de la EPA N.º TX0119661) para autorizar el añadido de la Desembocadura 201 interna propuesta para autorizar la descarga de aguas residuales domésticas tratadas, la modificación de la Desembocadura 401 existente de modo que incluya la autorización para descargar cualquier "desecho de limpieza de metales" generado en la planta, además del agua de lavado del generador de recuperación de calor y las aguas residuales de limpieza de calderas, así como el reconocimiento de que Lost Pines 1 puede descargar fuentes de desechos de bajo volumen fuera del sitio desde la planta eléctrica Sim Gideon y la planta eléctrica de Winchester a través de la Desembocadura 101 existente. La planta está ubicada en 256 Power Plant Road, Bastrop, en el condado de Bastrop, Texas 78602. La ruta de descarga es desde el sitio de la planta a través del canal de descarga de la planta eléctrica Sim Gideon (Permiso TPDES N.º WQ0002052000) hasta el lago Bastrop; de allí a Spicer Creek; de allí a Piney Creek; luego al río Colorado por encima de La Grange. TCEQ recibió esta solicitud el 6 de junio de 2024. La solicitud de permiso estará disponible para verse y copiarse en la Biblioteca Pública de Bastrop, 1100 Church Street, Bastrop, en el condado de Bastrop, Texas antes de la fecha en que se publique este aviso en el periódico. La solicitud, incluidas las puestas al día y los avisos relacionados con ella están disponibles electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdesapplications. Este enlace a un mapa electrónico de la ubicación general del sitio o instalación se proporciona como cortesía pública y no es parte de la solicitud ni del aviso. Para conocer la ubicación exacta, consulte la solicitud. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.271388,30.147777&level=18

También se puede obtener más información de la Lower Colorado River Authority y GenTex Power Corporation en la dirección indicada anteriormente o llamando a la Sra. Wendy Schreiber, Gerente de Apoyo Ambiental de la Planta, al 512-767-3560.

BDR GREEN VALLEY DRIVE LLC
PO BOX 29298
AUSTIN TX 78755

ROY LYNN MCCRARY
302 GREEN VALLEY DR
BASTROP TX 78602

TRUSTEE BARBARA S CARROLL
THE CARROLL FAMILY TRUST
6425 ZINN DR
OAKLAND CA 94611

JAVIER SOLORZANO AND MARIA PEREZ
292 GREEN VALLEY DR
BASTROP TX 78602

DANIEL AND ROSA BENITEZ
286 GREEN VALLEY DR
BASTROP TX 78602

JOSE LUIS SOLORZANO
270 GREEN VALLEY DR UNIT B
BASTROP TX 78602

MARIA PEREZ
FELIPE DE JESUS PONCE LOREDO
270 GREEN VALLEY DR
BASTROP TX 78602

HARRY AND CONNIE SCHROEDER
268 GREEN VALLEY DR
BASTROP TX 78602

VERNETTA AND JOE WILLIAMS
260 GREEN VALLEY DR
BASTROP TX 78602

BASTROP CHURCH OF NEW BEGINNINGS
256 GREEN VALLEY DR
BASTROP TX 78602

JUDY SMITH
255 GREEN VALLEY DR
BASTROP TX 78602

MARGARET ELIZABETH BORHO
12404 LAKEWOOD DR
BUDA TX 78610

THE REAL WILLIAMS LLC
112 LAKE DRIVE SERIES
7140 SUSSEX LN
MANSFIELD TX 76063

THE REAL WILLIAMS LLC
114 LAKE DRIVE SERIES
7140 SUSSEX LN
MANSFIELD TX 76063

TEXAS RURAL INVESTING FUND NO 1 LLC
PO BOX 151
GROESBECK TX 76642

COY AND BRITNEY WILLIAMS
113 LAKE DR
BASTROP TX 78602

WILLIAM BOWLES
640 FM 1441
BASTROP TX 78602

MATTHEW JOHN STANGER
12508 LIMERICK AVE
AUSTIN TX 78727

JOSE ESVIN HERNANDEZ RAMIREZ AND
CARMEN JULIETA MOLINA MESA
199 GREEN VALLEY DR
BASTROP TX 78602

JIM ROBERT BLACKWELL
120 BLACKWELL LN
BASTROP TX 78602

WILLIE SCHLICKEISEN
1714 ROOSEVELT ST
BASTROP TX 78602

ARTURO JAIMES JARAMILLO
8918 BURKLUND FARMS RD
DEL VALLE TX 78617

RAY SMITH
CAPITOL AREA COUNCIL BOY SCOUTS
12500 N INTERSTATE 35
AUSTIN TX 78753

CELIA MERRICK
449 PORTER RD
BASTROP TX 78602

STEVE AND SUSAN LAPORTE
457 PORTER RD
BASTROP TX 78602

DONALD WEEKS JR
463 PORTER RD
BASTROP TX 78602

JAMES SHEFFIELD
362 PINE TREE LOOP
BASTROP TX 78602

JENS AND KIMBERLY JENSEN
330 PINE TREE LOOP
BASTROP TX 78602

ELIZABETH CLEMENTSON AND DANIEL
MCKINNEY
316 PINE TREE LOOP
BASTROP TX 78602

ORLANDA VALKA
314 PINE TREE LOOP
BASTROP TX 78602

BRANDON HIGGINS
6704 MENCHACA RD UNIT 28
AUSTIN TX 78745

JON SEITZ
260 PINE TREE LOOP
BASTROP TX 78602

TIM AND MARY BICKERSTAFF
244 PINE TREE LOOP
BASTROP TX 78602

COITT AND KRISTI KESSLER
PO BOX 1269
BASTROP TX 78602

MATTHEW TURNER
411 LEXINGTON RD
ELGIN TX 78621

RICK AND PATRICIA SHELLY
PO BOX 1276
BASTROP TX 78602

SHAWN AND STACEY HARRIS
190 PINE TREE LOOP
BASTROP TX 78602

LINDA PENA AND MATTHEW PETERSON
305 GARWOOD ST
SMITHVILLE TX 78957

VEERA KUMAR AND USHA RANI SURAPANENI
12510 EMERALD SPRINGS DR
PEARLAND TX 77584

CHARLIE AND KELLY PAROBEK
329 HOFFMAN RD
BASTROP TX 78602

SARAH MARIE GUENTHER
122 PINE TREE LOOP #A
BASTROP TX 78602

LOST ACRES LLC
5900 BALCONES DR SUITE 100
AUSTIN TX 78731

MICHAEL PICCIANDRA
119 POWER PLANT RD
BASTROP TX 78602

ETC TEXAS PIPELINE LTD
800 E SONTERRA BLVD SUITE 400
SAN ANTONIO TX 78258

BLUEBONNET ELECT COOP INC
PO BOX 240
GIDDINGS TX 78942

JAMES AND MARIE BAIN
130 GNOME HOLLOW DR
BASTROP TX 78602

LISA NORMAN AND PATRICK GAYLOR
101 GNOME HOLLOW DR
BASTROP TX 78602

JIMMY NASSOUR
3839 BEE CAVES RD SUITE 200
WEST LAKE HILLS TX 78746

MICHELLE AND RYAN BANTA
321 S SHORE RD
BASTROP TX 78602

DANIEL SMITH
PO BOX 433
BASTROP TX 78602

KENNETH RAY AND NAJIA NOORI DAVISON
362 S SHORE RD
BASTROP TX 78602

SYLVIA DEL BOSQUE (CONN)
2400 JACKS PASS
AUSTIN TX 78734

JILL BRACKIN AND JUDD ROUSH
374 S SHORE RD
BASTROP TX 78602

CASSIE KEETON GRIFFIN
103 LAKE LEAF DR
BASTROP TX 78602

THREE LABS HOLDINGS LLC
6140 HIGHWAY 6 SUITE 92
MISSOURI CITY TX 77459

JASON MONTGOMERY AND MARITZA RODRIGUES
117 LAKE LEAF DR
BASTROP TX 78602

LUIS ORTEGA AND VANESSA LOLKUS
127 LAKE LEAF DR
BASTROP TX 78602

CHRISTOPHER GRENON
135 LAKE LEAF DR
BASTROP TX 78602

DONALD AND GLORIA BAKER
RT 5 BOX 671
BASTROP TX 78602

MARY ELIZABETH ASHTON
139 LAKE LEAF DR
BASTROP TX 78602

CURTIS AND SALLY HODGE
143 LAKE LEAF DR
BASTROP TX 78602

GALE AND GAYE LEE
153 LAKE LEAF DR
BASTROP TX 78602

VIRGIL AND JEANNIE KENNEDY
159 LAKE LEAF DR
BASTROP TX 78602

JOHN PROSKE
143 LAKE MIST DR
BASTROP TX 78602

PAITA CUSTOM HOMES LLC
123 ALTA VISTA DR
BASTROP TX 78602

GREG HAHN AND BRUCE HAHN
8111 LYNDON B JOHNSON FWY SUITE 860
DALLAS TX 75251

JUSTIN AND KATHRYN RANKIN
8209 VIA VERDE DR
AUSTIN TX 78739

TRACY KONG AND TRIEU THANH TRAN
9100 TRICKLE TRACE TRL
ROUND ROCK TX 78681

THOMAS JR AND CHRISTY LE FRANCE
200 OSAGE DR
MONTGOMERY TX 77316

JO ANN MILLS
179 CYNTHIA DR
BASTROP TX 78602

JILL ANN LAKE
177 CYNTHIA DR
BASTROP TX 78602

SERGIO AND ERICA RAMIREZ
20960 MANDRAKE DR
PFLUGERVILLE TX 78660

EFRAIN AND DEBRA ANN CANAVA
PO BOX 766
BASTROP TX 78602

DAYNA BECK AND KAREN FARRIER
162 QUINTON ALLEN DR
BASTROP TX 78602

CHARLIE LEE
14431 LIGHT FALLS CT
CYPRESS TX 77429

RUBY AND HUGO BARCENAS
6027 BLUEBELL CIR
AUSTIN TX 78741

HERIBERTO ROSAS MORALES AND PEDRO IVAN ARIAS HUAROTA
113 TERRA DR
ELGIN TX 78621

CHAD DENTON
3904 PALMER DR
ROUND ROCK TX 78664

VANESSA BELMONTES
139 PICKLE AVE
BASTROP TX 78602

MARTIN AND OLGA GALVAN
388 YOUNG SCHOOL HOUSE RD
SMITHVILLE TX 78957

ROBERT IRVING
131 PICKLE AVE
BASTROP TX 78602

DANIEL RAY MIRANDA
127 PICKLE AVE
BASTROP TX 78602

ALEXANDER IVARRA ROMERO
123 PICKLE AVE
BASTROP TX 78602

PATRICIA ANN DAVENPORT
121 PICKLE AVE
BASTROP TX 78602

THOMAS J AND WILMA J FINFROCK IRREVOCABLE TRUST
113 PICKLE AVE
BASTROP TX 78602

ERNESTINA AND HECTOR LUNA
423 FM 1441
BASTROP TX 78602

SHADERIC AND VELMA LUTTRELL
107 ASH ST
BASTROP TX 78602

DONALD DUNCAN
PO BOX 706
BASTROP TX 78602

EDGAR MORALES
305 GREEN VALLEY DR
BASTROP TX 78602

OSCAR ARREDONDO CASTRO
7601 DAFFAN LN
AUSTIN TX 78724

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT AMENDMENT

PERMIT NO. WQ0004155000

APPLICATION. Lower Colorado River Authority and GenTex Power Corporation, P.O. Box 220, Austin, Texas 78767, which own a combined-cycle electric power generating facility, have applied to the Texas Commission on Environmental Quality (TCEQ) to amend Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004155000 (EPA I.D. No. TX0119661) to authorize the addition of proposed internal Outfall 201 to authorize the discharge of treated domestic wastewater, modification of the existing Outfall 401 to include authorization to discharge any "metal cleaning wastes" generated at the plant in addition to heat recovery generator wash water and boiler cleaning wastewaters and the acknowledgement that Lost Pines 1 may discharge off-site low volume waste sources from the Sim Gideon Power Plant and Winchester Power Plant via existing Outfall 101. The facility is located at 256 Power Plant Road, near the city of Bastrop, in Bastrop County, Texas 78602. The discharge route is from the plant site Via Outfalls 001 and 002 to Lake Bastrop, thence to Piney Creek, thence to Colorado River Above La Grange. TCEQ received this application on June 6, 2024. The permit application will be available for viewing and copying at Bastrop Public Library, 1100 Church Street, Bastrop, in Bastrop County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.271388,30.147777&level=18

ALTERNATIVE LANGUAGE NOTICE. Alternative language notice in Spanish is available at: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.
El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.

ADDITIONAL NOTICE. TCEQ's Executive Director has determined the application is administratively complete and will conduct a technical review of the application. After technical review of the application is complete, the Executive Director may prepare a draft permit and will issue a preliminary decision on the application. **Notice of the Application and Preliminary Decision will be published and mailed to those who are on the county-wide mailing list and to those who are on the mailing list for this application. That notice will contain the deadline for submitting public comments.**

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting on this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. 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.

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

TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period and, the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

MAILING LIST. If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

INFORMATION AVAILABLE ONLINE. For details about the status of the application, visit the Commissioners' Integrated Database at www.tceq.texas.gov/goto/cid. Search the database using the permit number for this application, which is provided at the top of this notice.

AGENCY CONTACTS AND INFORMATION. All public comments and requests must be submitted either electronically at **https://www14.tceq.texas.gov/epic/eComment/**, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Lower Colorado River Authority and GenTex Power Corporation at the address stated above or by calling Ms. Wendy Schreiber, Manager, Plant Environmental Support, Lower Colorado River Authority, at 512-767-3560.

Issuance Date: July 17, 2024

Comisión de Calidad Ambiental del Estado de Texas

AVISO DE RECEPCIÓN DE LA SOLICITUD Y LA INTENCIÓN DE OBTENER CALIDAD DEL AGUA PERMISO MODIFICACION

PERMISO NO. WQ0004155000

SOLICITUD. Autoridad del Bajo Río Colorado y GenTex Power Corporation, P.O. Box 220, Austin, Texas 78767, que poseen una instalación de generación de energía eléctrica de ciclo combinado, han solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) que enmiende el Permiso N.º WQ0004155000 (I.D. de la EPA N.º TX0119661) para autorizar el añadido de la Desembocadura 201 interna propuesta para autorizar la descarga de aguas residuales domésticas tratadas, la modificación de la Desembocadura 401 existente de modo que incluya la autorización para descargar cualquier "desecho de limpieza de metales" generado en la planta, además del agua de lavado del generador de recuperación de calor y las aguas residuales de limpieza de calderas, así como el reconocimiento de que Lost Pines 1 puede descargar fuentes de desechos de bajo volumen fuera del sitio desde la planta eléctrica Sim Gideon y la planta eléctrica de Winchester a través de la Desembocadura 101 existente. La planta está ubicada en 256 Power Plant Road, cerca de la ciudad de Bastrop, en el condado de Bastrop, Texas 78602. La ruta de descarga es desde el sitio de la planta a través del canal de descarga de la planta eléctrica Sim Gideon (Permiso TPDES N.º WQ0002052000) hasta el lago Bastrop; de allí a Spicer Creek; de allí a Piney Creek; luego al río Colorado por encima de La Grange. TCEQ recibió esta solicitud el 6 de junio de 2024. La solicitud de permiso estará disponible para verse y copiarse en la Biblioteca Pública de Bastrop, 1100 Church Street, Bastrop, en el condado de Bastrop, Texas antes de la fecha en que se publique este aviso en el periódico. La solicitud, incluidas las puestas al día y los avisos relacionados con ella están disponibles electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdesapplications. Este enlace a un mapa electrónico de la ubicación general del sitio o instalación se proporciona como cortesía pública y no es parte de la solicitud ni del aviso. Para conocer la ubicación exacta, consulte la solicitud. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.271388,30.147777&level=18

El Director Ejecutivo de la TCEQ ha revisado esta medida para ver si está de acuerdo con los objetivos y las regulaciones del Programa de Administración Costero de Texas (CMP) de acuerdo con las regulaciones del Consejo Coordinador de la Costa (CCC) y ha determinado que la acción es conforme con las metas y regulaciones pertinentes del CMP.

AVISO ADICIONAL. El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que están en la lista de correo de las personas a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.**

COMENTARIO PUBLICO / REUNION PUBLICA. Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud. El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO. Después del plazo para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios apropiados y preparará una respuesta a todo los comentarios públicos esenciales, pertinentes, o significativos. **A menos que la solicitud haya sido referida directamente a una audiencia administrativa de lo contencioso, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud serán enviados por correo a todos los que presentaron un comentario público y a las personas que están en la lista para recibir avisos sobre esta solicitud. Si se reciben comentarios, el aviso también proveerá instrucciones para pedir una reconsideración de la decisión del Director Ejecutivo y para pedir una audiencia administrativa de lo contencioso.** Una audiencia administrativa de lo contencioso es un procedimiento legal similar a un procedimiento legal civil en un tribunal de distrito del estado.

PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, USTED DEBE INCLUIR EN SU SOLICITUD LOS SIGUIENTES DATOS: su nombre, dirección, y número de teléfono; el nombre del solicitante y número del permiso; la ubicación y distancia de su propiedad/actividad con respecto a la instalación; una descripción específica de la forma cómo usted sería afectado adversamente por el sitio de una manera no común al público en general; una lista de todas las cuestiones de hecho en disputa que usted presente durante el período de comentarios; y la declaración "[Yo/nosotros] solicito/solicitamos una audiencia de caso impugnado". Si presenta la petición para una audiencia de caso impugnado de parte de un grupo o asociación, debe identificar una persona que representa al grupo para recibir correspondencia en el futuro; identificar el nombre y la dirección de un miembro del grupo que sería afectado adversamente por la

planta o la actividad propuesta; proveer la información indicada anteriormente con respecto a la ubicación del miembro afectado y su distancia de la planta o actividad propuesta; explicar cómo y porqué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la Comisión. La Comisión sólo puede conceder una solicitud de una audiencia de caso impugnado sobre los temas que el solicitante haya presentado en sus comentarios oportunos que no fueron retirados posteriormente. Si se concede una audiencia, el tema de la audiencia estará limitado a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas a intereses pertinentes y materiales de calidad del agua que se hayan presentado durante el período de comentarios.

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Ademas, puede pedir que la TCEQ ponga su nombre en una or mas de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos de el solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado especifico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envia por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

CONTACTOS E INFORMACIÓN A LA AGENCIA. Todos los comentarios públicos y solicitudes deben ser presentadas electrónicamente vía http://www14.tceq.texas.gov/epic/eComment/ o por escrito dirigidos a la Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

También se puede obtener más información de la Lower Colorado River Authority y GenTex Power Corporation en la dirección indicada anteriormente o llamando a la Sra. Wendy Schreiber, Gerente de Apoyo Ambiental de la Planta, Autoridad del Bajo Río Colorado, al 512-767-3560.

Fecha de emisión 17 de julio de 2024

LP1-ADMIN-3 Plain Language Summary

English:

The Lower Colorado River Authority (LCRA) (CN600253637) and the GenTex Power Corporation (CN600411581) own the Lost Pines 1 Power Plant (LP1) (RN100723915), which is a combined-cycle electric power generation facility that consists of two combustion turbine generators and two unfired Heat Recovery Steam Generators (HRSG) with an approximate gross generating capacity of 540 megawatts (MW). The facility, which is operated by LCRA, is located at 256 Power Plant Road, Bastrop County, Bastrop, Texas 78602.

LCRA and the GenTex Power Corporation have applied to TCEQ for a major amendment and renewal of the LP1's Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004155000. This permit authorizes the plant to discharge wastewaters from internal outfalls that are monitored by LP1 prior to discharge. These internal outfalls are authorized to discharge low volume wastewater, stormwater, heat recovery generator wash water, and boiler cleaning wastewater into a discharge canal shared by the Sim Gideon Power Plant (SGP), which is located adjacent to LP1. LP1 also discharges once-through and auxiliary cooling water into the discharge canal, and SGP is authorized to monitor and discharge this LP1 wastewater through its Outfall 001 under TPDES Permit No. WQ0002052000. LCRA and the GenTex Power Corporation are requesting a major amendment to add a new internal Outfall 201 to authorize the discharge of treated domestic wastewater. Other requested changes include modification of the existing Outfall 401 to include authorization to discharge any "metal cleaning wastes" generated at the plant in addition to heat recovery generator wash water and boiler cleaning wastewaters, and an update to the off-site wastewater sources to be discharged via the LP1 outfalls.

The discharge of low volume waste and metal cleaning waste via internal outfalls from the LP1 facility are subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: total suspended solids, oil and grease, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total iron, total copper, and pH. Sanitary domestic wastewater from LP1 is treated in an on-site aerobic treatment system. The proposed discharge of treated domestic wastewater from Outfall 201 is subject to requirements from 30 TAC Chapter 309 (Domestic Wastewater Treatment Limitations). The pollutants expected from domestic wastewater discharges are: total residual chlorine, total suspended solids, Biochemical Oxygen Demand 5-day (BOD5), and pH.

Spanish:

La Lower Colorado River Authority (LCRA) (CN600253637) y la GenTex Power Corporation (CN600411581) son propietarias de la Planta Eléctrica Lost Pines 1 (LP1) (RN100723915), que es una instalación de generación de energía eléctrica de ciclo combinado que consta de dos generadores de turbina de combustión y dos generadores de vapor de recuperación de calor sin combustión (HRSG) con una capacidad de generación bruta aproximada de 540 megavatios (MW). La instalación, que opera la LCRA, está ubicada en el 256 Power Plant Road, Condado de Bastrop, Bastrop, Texas 78602.

LCRA y GenTex Power Corporation han solicitado a TCEQ una enmienda importante y renovación del Permiso No. WQ0004155000 del Sistema de eliminación de descargas contaminantes de Texas (TPDES) de LP1. Este permiso autoriza a la planta a descargar aguas residuales de desagües internos que son monitoreados por LP1 antes de la descarga. Estos desagües internos están autorizados para descargar aguas residuales de bajo volumen, aguas pluviales, agua de lavado del generador de recuperación de calor y aguas residuales de limpieza de calderas en un canal de descarga compartido por la planta de energía Sim Gideon (SGP), que se encuentra adyacente a LP1. LP1 también descarga agua de enfriamiento auxiliar y de un solo paso en el canal de descarga, y SGP está autorizada a monitorear y descargar estas aguas residuales de LP1 a través de su desagüe 001 de conformidad con el Permiso TPDES No. WQ0002052000. LCRA y GenTex Power Corporation solicitan una enmienda importante para agregar un nuevo desagüe interno 201 para autorizar la descarga de aguas residuales domésticas tratadas. Otros cambios solicitados incluyen la modificación del desagüe 401 existente para incluir la autorización para descargar cualquier "desecho de limpieza de metales" generado en la planta, además del agua de lavado del generador de recuperación de calor y las aguas residuales de limpieza de calderas, y una actualización de las fuentes de aguas residuales fuera del sitio que se descargarán a través de los desagües de LP1.

La descarga de desechos de bajo volumen y desechos de limpieza de metales a través de desagües internos de la instalación de LP1 está sujeta a las pautas federales de limitación de vertidos del 40 CFR Parte 423. Los contaminantes que se esperan de estas descargas según el 40 CFR Parte 423 son: sólidos suspendidos totales, aceite y grasa, demanda bioquímica de oxígeno (DBO), demanda química de oxígeno (DQO), hierro total, cobre total y pH. Las aguas residuales sanitarias domésticas de LP1 se tratan en un sistema de tratamiento aeróbico en el sitio. La descarga propuesta de aguas residuales domésticas tratadas del desagüe 201 está sujeta a los requisitos del Capítulo 309 del TAC 30 (Limitaciones del tratamiento de aguas residuales domésticas). Los contaminantes esperados de las descargas de aguas residuales domésticas son: cloro residual total, sólidos suspendidos totales, demanda bioquímica de oxígeno de 5 días (DBO5) y pH.

ENERGY • WATER • COMMUNITY SERVICES

June 6, 2024

Texas Commission on Environmental Quality (TCEQ)
Applications Review and Processing Team
Building F, Room 2101
12100 Park 35 Circle
Austin, Texas 78753

Re: Lower Colorado River Authority (CN600253637)
GenTex Power Corporation (CN600411581)
Lost Pines 1 Power Plant (RN100723915)
TPDES Wastewater Major Amendment and Renewal Application
Permit No. WQ0004155000

Dear Applications Team:

Enclosed with this transmittal letter are an original and two copies of a major amendment and renewal permit application for the Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004155000. If you have any questions regarding this application, please contact me at (512) 730-5633 or via email at Julie.Podbielski@lcra.org. This major amendment requests authorization to discharge treated domestic wastewater effluent via proposed internal Outfall 201. The application has revised descriptions of process and operational information.

Sincerely,

Julie Podbielski
Environmental Advisor

Enclosures

cc: Bill Steinhauser, PE, LCRA
Wendy Schreiber, LCRA

MAJOR AMENDMENT AND RENEWAL APPLICATION
TCEQ INDUSTRIAL WASTEWATER PERMIT

LOST PINES 1 POWER PLANT
PERMIT #WQ0004155000

SUBMITTED TO:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
APPLICATIONS REVIEW AND PROCESSING TEAM
BUILDING F, ROOM 2101
12100 PARK 35 CIRCLE
AUSTIN, TEXAS 78753

SUBMITTED BY:

LOWER COLORADO RIVER AUTHORITY
ENVIRONMENTAL AFFAIRS
P.O. BOX 220
AUSTIN, TEXAS 78767

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TCEQ INDUSTRIAL WASTEWATER PERMIT APPLICATION

INDUSTRIAL ADMINISTRATIVE REPORT 1.0

This report is required for all applications for TPDES permits and TLAPs. Contact the Applications Review and Processing Team at 512-239-4671 with any questions about completing this report

Item 1. Application Information and Fees (Instructions, Page 25)

a. Complete each field with the requested information, if applicable.

Applicant Name: Lower Colorado River Authority EPA ID No.: TX00119661

Permit No.: WQ0004155000 Expiration Date: December 6, 2024

b. Check the box next to the appropriate authorization type.

☒ Industrial Wastewater (wastewater and stormwater)

☐ Industrial Stormwater (stormwater only)

c. Check the box next to the appropriate facility status.

☒ Active ☐ Inactive

d. Check the box next to the appropriate permit type.

☒ TPDES Permit ☐ TLAP

e. Check the box next to the appropriate application type.

☐ New

☐ Renewal with changes ☐ Renewal without changes

☒ Major amendment with renewal ☐ Major amendment without renewal

☐ Minor amendment without renewal ☐ Minor modification without renewal

f. If applying for an amendment or modification, describe the request: Permittee requests: 1) the addition of proposed internal Outfall 201 to authorize the discharge of treated domestic wastewater; 2) modification of the existing Outfall 401 to include authorization to discharge any "metal cleaning wastes" generated at the plant in addition to heat recovery generator wash water and boiler cleaning wastewaters; and 3) the acknowledgement that Lost Pines 1 may discharge off-site low volume waste sources from the Sim Gideon Power Plant and Winchester Power Plant via existing Outfall 101.

g. Application Fee

EPA Classification	New	Major Amend. (with or without renewal)	Renewal (with or without changes)	Minor Amend. / Minor Mod. (without renewal)
Minor facility not subject to EPA categorical effluent guidelines (*40 CFR Parts 400-471*)	☐ $350	☐ $350	☐ $315	☐ $150
Minor facility subject to EPA categorical effluent guidelines (*40 CFR Parts 400-471*)	☐ $1,250	☒ $1,250	☐ $1,215	☐ $150
Major facility	N/A [1]	☐ $2,050	☐ $2,015	☒ $450

[1] All facilities are designated as minors until formally classified as a major by EPA.

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

h. Payment Information

Mailed

Check or money order No.: N/A Check or money order amt.: N/A

Named printed on check or money order: N/A

Epay

Voucher number: 707143 and 707144 Copy of voucher attachment: LP1-ADMIN-1 ePay Vouchers

Item 2. Applicant Information (Instructions, Pages 25)

a. Customer Number, if applicant is an existing customer: CN600253637

Note: Locate the customer number using the TCEQ's Central Registry Customer Search[2].

b. Legal name of the entity (applicant) applying for this permit: Lower Colorado River Authority

Note: The owner of the facility must apply for the permit. The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

☒ Mr. ☐ Ms. First/Last Name: Andrew Valencia

Title: Senior Vice President, Generation, LCRA Credential: PE

d. Will the applicant have overall financial responsibility for the facility?

☒ Yes ☐ No

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 3. Co-applicant Information (Instructions, Page 26)

☐ Check this box if there is no co-applicant.; otherwise, complete the below questions.

a. Legal name of the entity (co-applicant) applying for this permit: GenTex Power Corporation

Note: The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

b. Customer Number (if applicant is an existing customer): CN600411581

Note: Locate the customer number using the TCEQ's Central Registry Customer Search.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

☒ Mr. ☐ Ms. First/Last Name: Andrew Valencia

Title: Senior, Vice President, Generation, LCRA Credential: PE

[2] https://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

d. Will the co-applicant have overall financial responsibility for the facility?

☐ Yes ☒ No

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 4. Core Data Form (Instructions, Pages 26)

a. Complete one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: LP1-ADMIN-2 Core Data Forms

Item 5. Application Contact Information (Instructions, Page 26)

Provide names of two individuals who can be contact for additional information about this application. Indicate if the individual can be contact about administrative or technical information, or both.

a. ☒ Administrative Contact . ☒ Technical Contact

☐ Mr. ☒ Ms. Full Name (First and Last): Julie Podbielski

Title: Environmental Advisor Credential:

Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box 220; Mail Code - H305

City: Austin State: Texas Zip Code: 78767

Phone No: 512-461-4294 Fax No: _____ Email: Julie.Podbielski@lcra.org

b. ☒ Administrative Contact . ☒ Technical Contact

☒ Mr. ☐ Ms. Full Name (First and Last): Bill Steinhauser

Title: Sr. Manager, Env Permitting and Compliance Credential: PE

Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box 220; Mail Code - H305

City: Austin State: Texas Zip Code: 78767

Phone No: 512-730-6749 Fax No: _____ Email: Bill.Steinhauser@lcra.org

Attachment: N/A

Item 6. Permit Contact Information (Instructions, Pages 26)

Provide two names of individuals that can be contacted throughout the permit term.

a. ☐ Mr. ☒ Ms. Full Name (First and Last): Julie Podbielski

Title: Environmental Advisor Credential:

Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box 220; Mail Code - H305

City: Austin State: Texas Zip Code: 78767

Phone No: 512-461-4294 Fax No: _____ Email: Julie.Podbielski@lcra.org

b. ☒ Mr. ☐ Ms. Full Name (First and Last): Bill Steinhauser

Title: Sr. Manager, Env Permitting and Compliance Credential: PE

Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box 220; Mail Code - H305

City: Austin State: Texas Zip Code: 78767

Phone No: 512-730-6749 Fax No: _____ Email: Bill.Steinhauser@lcra.org

Attachment: N/A

Item 7. Billing Contact Information (Instructions, Page 27)

The permittee is responsible for paying the annual fee. The annual fee will be assessed for permits in **effect on September 1 of each year**. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (form TCEQ-20029).

Provide the complete mailing address where the annual fee invoice should be mailed and the name and phone number of the permittee's representative responsible for payment of the invoice.

☐ Mr. ☒ Ms. Full Name (First and Last): Beckie Loeve

Title: Environmental Supervisor Credential:

Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box E

City: Bastrop State: Texas Zip Code: 78602

Phone No: 512-663-4153 Fax No: _____ Email: Beckie.Loeve@lcra.org

Item 8. DMR/MER Contact Information (Instructions, Page 27)

Provide the name and mailing address of the person delegated to receive and submit DMRs or MERs. **Note:** DMR data must be submitted through the NetDMR system. An electronic reporting account can be established once the facility has obtained the permit number.

☐ Mr. ☒ Ms. Full Name (First and Last): Beckie Loeve

Title: Environmental Supervisor Credential:

Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box E

City: Bastrop State: Texas Zip Code: 78602

Phone No: 512-663-4153 Fax No: _____ Email: Beckie.Loeve@lcra.org

Item 9. NOTICE INFORMATION (Instructions, Pages 27

a. Individual Publishing the Notices

☐ Mr. ☒ Ms. Full Name (First and Last): Beckie Loeve

Title: Environmental Supervisor Credential:

Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box E

City: Bastrop State: Texas Zip Code: 78602

Phone No: 512-663-4153 Fax No: _____ Email: Beckie.Loeve@lcra.org

b. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package (only for NORI, NAPD will be sent via regular mail)

☒ E-mail: Beckie.Loeve@lcra.org

☐ Fax:

☒ Regular Mail (USPS)

Mailing Address: Beckie Loeve, P.O. Box E

City: Bastrop State: Texas Zip Code: 78602

c. Contact in the Notice

☐ Mr. ☒ Ms Full Name (First and Last): Wendy Schreiber

Title: Manager, Plant Environmental Support Credential:

Organization Name: Lower Colorado River Authority

Phone No: 512-767-3560 Fax No: _____ Email: Wendy.Schreiber@lcra.org

d. Public Viewing Location Information

Note: If the facility or outfall is located in more than one county, provide a public viewing place for each county.

Public building name: Bastrop Public Library Location within the building: Information Desk

Physical Address of Building: 1100 Church Street

City: Bastrop County: Bastrop

e. Bilingual Notice Requirements

This information is required for new, major amendment, minor amendment or minor modification, and renewal applications.

This section of the application is only used to determine if alternative language notices will be needed. Complete instructions on publishing the alternative language notices will be in your public notice package.

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine whether an alternative language notices are required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

   ☒ Yes ☐ No

   If no, publication of an alternative language notice is not required; skip to Item 8 (Regulated Entity and Permitted Site Information.)

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

   ☒ Yes ☐ No

3. Do the students at these schools attend a bilingual education program at another location?

   ☐ Yes ☒ No

4. Would the school be required to provide a bilingual education program, but the school has waived out of this requirement under 19 TAC §89.1205(g)?

   ☐ Yes ☐ No ☒ N/A

5. If the answer is yes to question 1, 2, 3, or 4, public notices in an alternative language are required. Which language is required by the bilingual program? Spanish

f. Plain Language Summary Template - Complete the Plain Language Summary at the end of this application. Attachment: LP1-ADMIN-3 Plain Language Summary

g. Complete one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment and include as an attachment. Attachment: LP1-ADMIN-4 Public Involvement Plan (PIP)

Item 10. Regulated Entity and Permitted Site Information (Instructions Pages 28-30)

a. TCEQ issued Regulated Entity Number (RN), if available: RN100723915

Note: If your business site is part of a larger business site, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search the TCEQ's Central Registry to determine the RN or to see if the larger site may already be registered as a Regulated Entity. If the site is found, provide the assigned RN.

b. Name of project or site (the name known by the community where located): Lost Pines 1 Power Plant

c. Is the location address of the facility in the existing permit the same?

☒ Yes ☐ No ☐ N/A (new permit)

Note: If the facility is located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County, additional information concerning protection of the Edwards Aquifer may be required.

d. Owner of treatment facility:

☐ Mr. ☐ Ms. Full Name (First and Last): N/A

or Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box 220

City: Austin State: Texas Zip Code: 78767

Phone No: 512-473-3200 Fax No: _____ Email: N/A

e. Ownership of facility: ☒ Public ☐ Private ☐ Both ☐ Federal

f. Owner of land where treatment facility is or will be: Lower Colorado River Authority

☐ Mr. ☐ Ms. Full Name (First and Last): N/A

or Organization Name: Lower Colorado River Authority

Mailing Address: P.O. Box 220

City: Austin State: Texas Zip Code: 78767

Phone No: 512-473-3200 Fax No: _____ Email: N/A

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years (In some cases, a lease may not suffice - see instructions). Attachment: N/A

g. Owner of effluent TLAP disposal site (if applicable): N/A

☐ Mr. ☐ Ms. Full Name (First and Last): Click to enter text.

or Organization Name: Click to enter text.

Mailing Address: Click to enter text.

City: Click to enter text. State: Click to enter text. Zip Code: Click to enter text.

Phone No: Click to enter text. Fax No: Click to enter text. Email: Click to enter text.

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: Click to enter text.

h. Owner of sewage sludge disposal site (if applicable):

☐ Mr. ☐ Ms. Full Name (First and Last): N/A

or Organization Name: Click to enter text.

Mailing Address: Click to enter text.

City: Click to enter text. State: Click to enter text. Zip Code: Click to enter text.

Phone No: Click to enter text. Fax No: Click to enter text. Email: Click to enter text.

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: Click to enter text.

Item 11. TPDES Discharge/TLAP Disposal Information (Instructions, Pages 30-32)

a. Is the facility located on or does the treated effluent cross Native American Land?

☐ Yes ☒ No

b. Attach an original full size USGS Topographic Map (or an 8.5"×11" reproduced portion for renewal or amendment applications) with all required information. Check the box next to each item below to confirm it has been included on the map.

☒ One-mile radius

☒ Applicant's property boundaries

☒ Labeled point(s) of discharge

☐ Effluent disposal site boundaries

☐ Sewage sludge disposal site

☒ Three-miles downstream information

☒ Treatment facility boundaries

☒ Highlighted discharge route(s)

☐ All wastewater ponds

☐ New and future construction

Attachment: LP1-ADMIN-5 USGS Topographic Map

c. Is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☐ No or New Permit N/A

If no, or a new application, provide an accurate location description: N/A

d. Are the point(s) of discharge in the existing permit correct?

☒ Yes ☐ No or New Permit

If no, or a new application, provide an accurate location description: N/A

e. Are the discharge route(s) in the existing permit correct?

☒ Yes ☐ No or New Permit

If no, or a new permit, provide an accurate description of the discharge route: N/A

f. City nearest the outfall(s): Bastrop

g. County in which the outfalls(s) is/are located: Bastrop

h. Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

☐ Yes ☒ No

If yes, indicate by a check mark if: ☐ Authorization granted ☐ Authorization pending

For new and amendment applications, attach copies of letters that show proof of contact and provide the approval letter upon receipt. Attachment: N/A

For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge: Bastrop, Fayette, Colorado, Wharton

i. For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☐ Yes ☐ No or New Permit N/A

If no, or a new application, provide an accurate location description: N/A

j. City nearest the disposal site: N/A

k. County in which the disposal site is located: N/A

l. Disposal Site Latitude: N/A Longitude: N/A

m. For TLAPs, describe how effluent is/will be routed from the treatment facility to the disposal site: N/A

n. For TLAPs, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: N/A

Item 12. MISCELLANEOUS INFORMATION (Instructions, Page 32)

a. Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?

☐ Yes ☒ No

If yes, list each person: Click to enter text.

b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the account no.: Click to enter text. and total amount due: Click to enter text.

c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, provide the enforcement order no.: Click to enter text. and amount due: Click to enter text.

Item 13. SIGNATURE PAGE (Instructions, Pages 32-33)

Permit No: WQ0004155000

Applicant Name: Lower Colorado River Authority

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

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document and can provide documentation in proof of such authorization upon request.

Signatory name (typed or printed): Andrew Valencia, PE

Signatory title: Senior Vice President, Generation

Signature: _____ Date: 6/5/2024
(Use blue ink)

Subscribed and Sworn to before me by the said Andrew Valencia

on this 5th day of June, 20 24.

My commission expires on the 11th day of January, 20 26.

_____
Notary Public

TABETHA JASKE
Notary Public, State of Texas
Comm. Expires 01-11-2026
Notary ID 128143668
[SEAL]

Travis
County, Texas

Note: *If co-applicants are necessary, each entity must submit an original, separate signature page.*

INDUSTRIAL ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

Item 1. AFFECTED LANDOWNER INFORMATION (Instructions, Pages 34-35)

a. Attach a landowner map or drawing, with scale, as applicable. Check the box next to each item to confirm it has been provided.

☒ The applicant's property boundaries.

☒ The facility site boundaries within the applicant's property boundaries.

☐ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone.

☒ The property boundaries of all landowners surrounding the applicant's property. (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)

☒ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream.

☐ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge.

☒ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides.

☐ The boundaries of the effluent disposal site (e.g., irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property.

☐ The property boundaries of all landowners surrounding the applicant's property boundaries where the effluent disposal site is located.

☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners within one-quarter mile of the applicant's property boundaries where the sewage sludge land application site is located.

☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (e.g., sludge surface disposal site or sludge monofil) is located.

Attachment: LP1-ADMIN-6 Affected Landowner Map

b. Check the box next to the format of the landowners list:

☐ Readable/Writeable CD ☒ Four sets of labels

Attachment: LP1-ADMIN-7 Affected Landowner Mailing Labels and Landowner List

d. Provide the source of the landowners' names and mailing addresses: White Star Company and Bastrop County Appraisal District website

e. As required by Texas Water Code § 5.115, is any permanent school fund land affected by this application?

☐ Yes ☒ No

If yes, provide the location and foreseeable impacts and effects this application has on the land(s): Click to enter text.

Item 2. Public Involvement Plan Form (Instructions, Page 36)

Complete and attach one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment to a permit.

Item 3. ORIGINAL PHOTOGRAPHS (Instructions, Page 36)

Provide original ground level photographs. Check the box next to each of the following items to indicate it is included.

☒ At least one original photograph of the new or expanded treatment unit location.

☒ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.

☐ At least one photograph of the existing/proposed effluent disposal site.

☒ A plot plan or map showing the location and direction of each photograph.

Attachment: LP1-ADMIN-8 Treatment Unit Location

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

FOR AGENCIES REVIEWING INDUSTRIAL TPDES WASTEWATER PERMIT APPLICATIONS

TCEQ USE ONLY:

Application type: ____Renewal ____Major Amendment ____Minor Amendment ____New

County: _____ Segment Number: _____

Admin Complete Date: _____

Agency Receiving SPIF:

_____ Texas Historical Commission _____ U.S. Fish and Wildlife

_____ Texas Parks and Wildlife Department _____ U.S. Army Corps of Engineers

This form applies to TPDES permit applications only. (Instructions, Page 36)

The SPIF must be completed as a separate document. The TCEQ will mail a copy of the SPIF to each agency as required by the TCEQ agreement with EPA. If any of the items are not completely addressed or further information is needed, you will be contacted to provide the information before the permit is issued. Each item must be completely addressed.

Do not refer to a response of any item in the permit application form. Each attachment must be provided with this form separately from the administrative report of the application. The application will not be declared administratively complete without this form being completed in its entirety including all attachments.

The following applies to all applications:

1. Permittee Name: Lower Colorado River Authority and GenTex Power Corporation

2. Permit No.: WQ0004155000 EPA ID No.: TX0119661

3. Address of the project (location description that includes street/highway, city/vicinity, and county): 256 Power Plant Road, Bastrop, Texas 78602; Bastrop County

4. Provide the name, address, phone and fax number, and email address of an individual that can be contacted to answer specific questions about the property.

   Full Name (First and Last): Wendy Schreiber

   Organization Name: Lower Colorado River Authority Mailing Address: P.O. Box 220

   City: Austin State: Texas Zip Code: 78767

   Phone No: 512-767-3560 Fax No: _____ Email: Wendy.Schreiber@lcra.org

5. List the county in which the facility is located: Bastrop

6. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property: N/A

7. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge

to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the classified segment number: Outfalls 001 and 002 discharge to Lake Bastrop, thence to Spicer Creek, thence to Piney Creek, thence to Colorado River Above La Grange (Classified Segment #1434) of the Colorado River Basin.

8. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report.) Attachment: LP1-SPIF-1 General Location Map and LP1-SPIF-2 USGS Topographic Map
9. Provide original photographs of any structures 50 years or older on the property. Attachment: No buildings over 50 years within the Lost Pines 1 property boundary.
10. Does your project involve any of the following? Check all that apply.

    ☐ Proposed access roads, utility lines, construction easements

    ☐ Visual effects that could damage or detract from a historic property's integrity

    ☐ Vibration effects during construction or as a result of project design

    ☐ Additional phases of development that are planned for the future

    ☐ Sealing caves, fractures, sinkholes, other karst features

    ☐ Disturbance of vegetation or wetlands

11. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features): N/A
12. Describe existing disturbances, vegetation, and land use: Existing site is industrial; an operating power plant

THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

13. List construction dates of all buildings and structures on the property: The Lost Pines 1 Power Plant was built and became operational in 2001.
14. Provide a brief history of the property, and name of the architect/builder, if known: The property surrounding the Lost Pines 1 has been the site of the LCRA Sim Gideon power plant since 1965.

WATER QUALITY PERMIT

PAYMENT SUBMITTAL FORM

Use this form to submit the Application Fee, if mailing the payment. (Instructions, Page 36-37)

- Complete items 1 through 5 below.
- Staple the check or money order in the space provided at the bottom of this document.
- Do not mail this form with the application form.
- Do not mail this form to the same address as the application.
- Do not submit a copy of the application with this form as it could cause duplicate permit entries.

Mail this form and the check or money order to:

BY REGULAR U.S. MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, Texas 78711-3088

BY OVERNIGHT/EXPRESS MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, Texas 78753

Fee Code: WQP **Permit No:** WQ000Click to enter text.

1. Check or Money Order Number: Click to enter text.
2. Check or Money Order Amount: Click to enter text.
3. Date of Check or Money Order: Click to enter text.
4. Name on Check or Money Order: Click to enter text.
5. APPLICATION INFORMATION

   Name of Project or Site: Click to enter text.

   Physical Address of Project or Site: Click to enter text.

   If the check is for more than one application, attach a list which includes the name of each Project or Site (RE) and Physical Address, exactly as provided on the application. Attachment: Click to enter text.

Staple Check or Money Order in This Space

ATTACHMENT 1

INDIVIDUAL INFORMATION

Item 1. Individual information (Instructions, Page 37)

Complete this attachment if the facility applicant or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

Prefix (Mr., Ms., or Miss): Click to enter text.

Full legal name (first, middle, and last): Click to enter text.

Driver's License or State Identification Number: Click to enter text.

Date of Birth: Click to enter text.

Mailing Address: Click to enter text.

City, State, and Zip Code: Click to enter text.

Phone No.: Click to enter text.

Fax No.: Click to enter text.

E-mail Address: Click to enter text.

CN: Click to enter text.

Checklist of Common Deficiencies

Below is a list of common deficiencies found during the administrative review of industrial wastewater permit applications. To ensure the timely processing of this application, please review the items below and indicate each item is complete and in accordance applicable rules at 30 TAC Chapters 21, 281, and 305 by checking the box next to the item. If an item is not required this application, indicate by checking N/A where appropriate. Please do not submit the application until all items below are addressed.

☒ Core Data Form (TCEQ Form No. 10400)
(Required for all applications types. Must be completed in its entirety and signed. Note: Form may be signed by applicant representative.)

☒ Correct and Current Industrial Wastewater Permit Application Forms
(TCEQ Form Nos. 10055 and 10411. Version dated 5/10/2019 or later.)

☐ Water Quality Permit Payment Submittal Form (Page 14)
(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)

☒ 7.5 Minute USGS Quadrangle Topographic Map Attached
(Full-size map if seeking "New" permit. 8 ½ x 11 acceptable for Renewals and Amendments.)

☒ N/A ☐ Current/Non-Expired, Executed Lease Agreement or Easement Attached

☐ N/A ☒ Landowners Map
(See instructions for landowner requirements.)

Things to Know:

- All the items shown on the map must be labeled.
- The applicant's complete property boundaries must be delineated which includes boundaries of contiguous property owned by the applicant.
- The applicant cannot be its own adjacent landowner. You must identify the landowners immediately adjacent to their property, regardless of how far they are from the actual facility.
- If the applicant's property is adjacent to a road, creek, or stream, the landowners on the opposite side must be identified. Although the properties are not adjacent to applicant's property boundary, they are considered potentially affected landowners. If the adjacent road is a divided highway as identified on the USGS topographic map, the applicant does not have to identify the landowners on the opposite side of the highway.

☐ N/A ☒ Landowners Cross Reference List
(See instructions for landowner requirements.)

☐ N/A ☒ Landowners Labels or CD-RW attached
(See instructions for landowner requirements.)

☒ Original signature per 30 TAC § 305.44 – Blue Ink Preferred
(If signature page is not signed by an elected official or principle executive officer, a copy of signature authority/delegation letter must be attached.)

☒ Plain Language Summary

Plain Language Summary Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

This template is a guide to assist applicant's in developing a plain language summary as required by 30 Texas Administrative Code Chapter 39 Subchapter H. Applicant's may modify the template as necessary to accurately describe their facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how the applicant will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements.

If you are subject to the alternative language notice requirements in 30 Texas Administrative Code §39.426, you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package. For your convenience, a Spanish template has been provided below.

ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS INDUSTRIAL WASTEWATER/STORMWATER

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

1. Enter applicant's name here. (2. Enter Customer Number here (i.e., CN6########).) 3. Choose from the drop-down menu. 4. Enter name of facility here. 5. Enter Regulated Entity Number here (i.e., RN1########). 6. Choose from the drop-down menu. 7. Enter facility description here.. The facility 8. Choose from the drop-down menu. located 9. Enter location here. , in 10. Enter city name here., 11. Enter county name here. County, Texas 12. Enter zip code here.. 13. Enter summary of application request here.<<*For TLAP applications include the following sentence, otherwise delete:*>> This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain14. List all expected pollutants here..15. Enter types of wastewater discharged here. 16. Choose from the drop-down menu. treated by 17. Enter a description of wastewater treatment used at the facility here.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE TPDES o TLAP

AGUAS RESIDUALES INDUSTRIALES/AGUAS PLUVIALES

El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no son representaciones federales exigibles de la solicitud de permiso.

1. Introduzca el nombre del solicitante aquí. (2. Introduzca el número de cliente aquí (es decir, CN6 #########).) 3. Elija del menú desplegable. 4. Introduzca el nombre de la instalación aquí. 5. Introduzca el número de entidad regulada aquí (es decir, RN1 #########). 6. Elija del menú desplegable. 7. Introduzca la descripción de la instalación aquí. . La instalación 8. Elija del menú desplegable. ubicado 9. Introduzca la ubicación aquí. , en 10. Introduzca el nombre de la ciudad aquí. , Condado de 11. Introduzca el nombre del condado aquí. , Texas 12. Introduzca el código postal aquí. .
13. Introduzca el resumen de la petición de solicitud aquí. <<*Para las solicitudes de TLAP incluya la siguiente oración, de lo contrario, elimine:*>> Este permiso no autorizará una descarga de contaminantes en el agua en el estado.
Se espera que las descargas de la instalación contengan14. Liste todos los contaminantes esperados aquí. . 15. Introduzca los tipos de aguas residuales descargadas aquí. 16. Elija del menú desplegable. tratado por 17. Introduzca una descripción del tratamiento de aguas residuales utilizado en la instalación aquí. .

INSTRUCTIONS

1. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
2. Enter the Customer Number in this section. Each Individual or Organization is issued a unique 11-digit identification number called a CN (e.g. CN123456789).
3. Choose "operates" in this section for existing facility applications or choose "proposes to operate" for new facility applications.
4. Enter the name of the facility in this section. The facility name should match the name associated with the regulated entity number.
5. Enter the Regulated Entity number in this section. Each site location is issued a unique 11-digit identification number called an RN (e.g. RN123456789).
6. Choose the appropriate article (a or an) to complete the sentence.
7. Enter a description of the facility in this section. For example: steam electric generating facility, nitrogenous fertilizer manufacturing facility, etc.
8. Choose "is" for an existing facility or "will be" for a new facility.
9. Enter the location of the facility in this section.
10. Enter the City nearest the facility in this section.
11. Enter the County nearest the facility in this section.
12. Enter the zip code for the facility address in this section.
13. Enter a summary of the application request in this section. For example: renewal to discharge 25,000 gallons per day of treated domestic wastewater, new application to discharge process wastewater and stormwater on an intermittent and flow-variable basis, or major amendment to reduce monitoring frequency for pH, etc. If more than one outfall is included in the application, provide applicable information for each individual outfall.
14. List all pollutants expected in the discharge from this facility in this section. If applicable, refer to the pollutants from any federal numeric effluent limitations that apply to your facility.

15. Enter the discharge types from your facility in this section (e.g., stormwater, process wastewater, once through cooling water, etc.)
16. Choose the appropriate verb tense to complete the sentence.
17. Enter a description of the wastewater treatment used at your facility. Include a description of each process, starting with initial treatment and finishing with the outfall/point of disposal. Use additional lines for individual discharge types if necessary.

Example

Individual Industrial Wastewater Application

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

ABC Corporation (CN600000000) operates the Starr Power Station (RN10000000000), a two-unit gas fired electric generating facility. Unit 1 has a generating capacity of 393 megawatts (MWs) and Unit 2 has a generating capacity of 528 MWs. The facility is located at 1356 Starr Street, near the City of Austin, Travis County, Texas 78753.

This application is for a renewal to discharge 870,000,000 gallons per day of once through cooling water, auxiliary cooling water, and also authorizes the following waste streams monitored inside the facility (internal outfalls) before it is mixed with the other wastewaters authorized for discharge via main Outfall 001, referred as "previously monitored effluents" (low volume wastewater, metal cleaning waste, and stormwater (from diked oil storage area yards, and storm drains)) via Outfall 001. Low volume waste sources, metal cleaning waste, and stormwater drains on a continuous and flow-variable basis via internal Outfall 101.

The discharge of once through cooling water via Outfall 001 and low volume waste and metal cleaning waste via Outfall 101 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: free available chlorine, total residual chlorine, total suspended solids, oil and grease, total iron, total copper, and pH. Temperature is also expected from these discharges. Additional potential pollutants are included in the Industrial Wastewater Application Technical Report, Worksheet 2.0.

Cooling water and boiler make-up water are supplied by Lake Starr Reservoir. The City of Austin municipal water plant (CN600000000, PWS 00000) supplies the facility's potable water and serves as an alternate source of boiler make-up water. Water from the Lake Starr Reservoir is withdrawn at the intake structure and treated with sodium hypochlorite to prevent biofouling and sodium bromide as a chlorine enhancer to improve efficacy and then passed through condensers and auxiliary equipment on a once-through basis to cool equipment and condense exhaust steam. Low volume wastewater from blowdown of boiler Units 1 and 2 and metal cleaning wastes receive no treatment prior to discharge via Outfall 101. Plant floor and equipment drains and stormwater runoff from diked oil storage areas, yards, and storm drains are routed through an oil and water separator prior to discharge via Outfall 101. Domestic wastewater, blowdown, and backwash water from the service water filter, clarifier, and sand filter are routed to the Starr Creek Domestic Sewage Treatment Plant, TPDES Permit No. WQ0010000001, for treatment and disposal. Metal cleaning waste from equipment cleaning is generally disposed of off-site.

ADMINISTRATIVE REPORT

ATTACHMENTS

1. LP1-ADMIN-1 ePay Vouchers
2. LP1-ADMIN-2 Core Data Forms
3. LP1-ADMIN-3 Plain Language Summary
4. LP1-ADMIN-4 Public Involvement Plan (PIP) Form
5. LP1-ADMIN-5 USGS Topographic Map
6. LP1-ADMIN-6 Affected Landowner Map
7. LP1-ADMIN-7 Affected Landowner Mailing Labels and List
8. LP1-ADMIN-8 Treatment Unit Location
9. LP1-SPIF-1 General Location Map
10. LP1-SPIF-2 USGS Topographic Map

LP1 – ADMIN-1 ePay Vouchers

TCEQ ePay Voucher Receipt

Transaction Information

Voucher Number:	707143
Trace Number:	582EA000611909
Date:	05/28/2024 04:35 PM
Payment Method:	CC - Authorization 0000099029
Voucher Amount:	$1,200.00
Fee Type:	WW PERMIT - MINOR FACILITY SUBJECT TO 40 CFR 400-471 - MAJOR AMENDMENT
ePay Actor:	JULIE PODBIELSKI

Payment Contact Information

Name:	JULIE PODBIELSKI
Company:	LOWER COLORADO RIVER AUTHORITY
Address:	3700 LAKE AUSTIN BLVD, AUSTIN, TX 78703
Phone:	512-473-3200

Site Information

Site Name:	LOST PINES 1 POWER PLANT
Site Address:	256 POWER PLANT ROAD, BASTROP, TX 78602
Site Location:	256 POWER PLANT ROAD BASTROP TEXAS 78602

Customer Information

Customer Name:	LOWER COLORADO RIVER AUTHORITY
Customer Address:	P O BOX 220, AUSTIN, TX 78767

Other Information

Program Area ID:	0004155000

TCEQ ePay Voucher Receipt

Transaction Information

Voucher Number:	707144
Trace Number:	582EA000611909
Date:	05/28/2024 04:35 PM
Payment Method:	CC - Authorization 0000099029
Voucher Amount:	$50.00
Fee Type:	30 TAC 305.53B WQ NOTIFICATION FEE
ePay Actor:	JULIE PODBIELSKI

Payment Contact Information

Name:	JULIE PODBIELSKI
Company:	LOWER COLORADO RIVER AUTHORITY
Address:	3700 LAKE AUSTIN BLVD, AUSTIN, TX 78703
Phone:	512-473-3200

TCEQ ePay Receipt

Transaction Information

Trace Number:	582EA000611909
Date:	05/28/2024 04:35 PM
Payment Method:	CC - Authorization 0000099029
ePay Actor:	JULIE PODBIELSKI
TCEQ Amount:	$1,250.00
Texas.gov Price::	$1,278.38*

* This service is provided by Texas.gov, the official website of Texas. The price of this service includes funds that support the ongoing operations and enhancements of Texas.gov, which is provided by a third party in partnership with the State.

Payment Contact Information

Name:	JULIE PODBIELSKI
Company:	LOWER COLORADO RIVER AUTHORITY
Address:	3700 LAKE AUSTIN BLVD, AUSTIN, TX 78703
Phone:	512-473-3200

Cart Items

Voucher	Fee Description	AR Number	Amount
707143	WW PERMIT - MINOR FACILITY SUBJECT TO 40 CFR 400-471 - MAJOR AMENDMENT		$1,200.00
707144	30 TAC 305.53B WQ NOTIFICATION FEE		$50.00
		TCEQ Amount:	**$1,250.00**

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☐ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☒ Renewal (*Core Data Form should be submitted with the renewal form*) ☒ Other **TPDES Permit Amendment**

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 600253637		RN 100723915

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy): N/A

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name (*If an individual, print last name first: eg: Doe, John*) *If new Customer, enter previous Customer below:*

Lower Colorado River Authority (50% owner)

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
		746002915	

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☒ Other ☐ Sole Proprietorship ☒ Other: River Authority

12. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☒ 501 and higher

13. Independently Owned and Operated?
☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☒ Other: 50% owner; 100% operator

15. Mailing Address:

P.O. Box 220

City	State	ZIP	ZIP + 4
Austin	TX	78767	

16. Country Mailing Information (*if outside USA*)

17. E-Mail Address (*if applicable*)
Andrew.Valencia@lcra.org

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 578-3591		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (*If 'New Regulated Entity" is selected below this form should be accompanied by a permit application*)

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name (*Enter name of the site where the regulated action is taking place.*)

Lost Pines 1 Power Plant

23. Street Address of the Regulated Entity: *(No PO Boxes)*	256 Power Plant Road							
	City	Bastrop	**State**	TX	**ZIP**	78602	**ZIP + 4**	
24. County	Bastrop							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	N/A (see Street address above)

26. Nearest City	**State**	**Nearest ZIP Code**

27. Latitude (N) In Decimal:	30.14778N		**28. Longitude (W) In Decimal:**	97.27139W	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	08	52	97	16	17

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
4911		221112	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

electricity generation

34. Mailing Address:	**P.O. Box E**							
	City	**Bastrop**	**State**	**TX**	**ZIP**	**78602**	**ZIP + 4**	

35. E-Mail Address:	**Andrew.Valencia@lcra.org**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 578-3591		**( ) -**

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0004155000			

SECTION IV: Preparer Information

40. Name:	Julie Podbielski	**41. Title:**	Environmental Advisor

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 730-5633		( ) -	Julie.Podbielski@lcra.org

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Lower Colorado River Authority	**Job Title:**	Sr. VP, Generation
Name *(In Print):*	Andrew Valencia, P.E.	**Phone:**	(512) 578- **3591**
Signature:		**Date:**	6/5/2024

TCEQ Core Data Form

TCEQ Use Only

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☐ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application.)*

☒ Renewal *(Core Data Form should be submitted with the renewal form)* ☒ Other **TPDES Permit Amendment**

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 600411581		RN 100723915

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	N/A

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* *If new Customer, enter previous Customer below:*

GenTex Power Corporation (50% owner)

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
1378460-01	17427869882		

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees ☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated? ☐ Yes ☒ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator

☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☒ Other: 50% owner

15. Mailing Address:

P.O. Box 220

City	Austin	State	TX	ZIP	78767	ZIP + 4	

16. Country Mailing Information *(if outside USA)*

17. E-Mail Address *(if applicable)*

Andrew.Valencia@lcra.org

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 578-3591		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Lost Pines 1 Power Plant

23. Street Address of the Regulated Entity: *(No PO Boxes)*	256 Power Plant Road							
	City	Bastrop	**State**	TX	**ZIP**	78602	**ZIP + 4**	
24. County	Bastrop							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	N/A per instructions (see Street address above)				
26. Nearest City			**State**		**Nearest ZIP Code**
27. Latitude (N) In Decimal:	30.14778N		**28. Longitude (W) In Decimal:**	97.27139W	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	08	52	97	16	17

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
4911		221112	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

electricity generation

34. Mailing Address:	**P.O. Box E**							
	City	**Bastrop**	**State**	**TX**	**ZIP**	**78602**	**ZIP + 4**	
35. E-Mail Address:	**Andrew.Valencia@lcra.org**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 578-3591		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0004155000			

SECTION IV: Preparer Information

40. Name:	Julie Podbielski	**41. Title:**	Environmental Advisor
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 730-5633		( ) -	Julie.Podbielski@lcra.org

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Lower Colorado River Authority	**Job Title:**	Sr. VP, Generation
Name *(In Print):*	Andrew Valencia, P.E.	**Phone:**	(512) 578- **3591**
Signature:		**Date:**	6/5/2024

LP1-ADMIN-3 Plain Language Summary

English:

The Lower Colorado River Authority (LCRA) (CN600253637) operates the Lost Pines 1 Power Plant (LP1) (RN100723915), which is a combined-cycle electric power generation facility that consists of two combustion turbine generators and two unfired Heat Recovery Steam Generators (HRSG) with an approximate gross generating capacity of 540 megawatts (MW). The facility is owned by LCRA and GenTex Power Corporation (CN600411581) and is located at 256 Power Plant Road, Bastrop County, Bastrop, Texas 78602.

LCRA and the GenTex Power Corporation have applied to TCEQ for a major amendment and renewal of the LP1's Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004155000. This permit authorizes the plant to discharge wastewaters from internal outfalls that are monitored by LP1 prior to discharge. These internal outfalls are authorized to discharge low volume wastewater, stormwater, heat recovery generator wash water, and boiler cleaning wastewater into a discharge canal shared by the Sim Gideon Power Plant (SGP), which is located adjacent to LP1. LP1 also discharges once-through and auxiliary cooling water into the discharge canal, and SGP is authorized to monitor and discharge this LP1 wastewater through its Outfall 001 under TPDES Permit No. WQ0002052000. LCRA and the GenTex Power Corporation are requesting a major amendment to add a new internal Outfall 201 to authorize the discharge of treated domestic wastewater. Other requested changes include modification of the existing Outfall 401 to include authorization to discharge any "metal cleaning wastes" generated at the plant in addition to heat recovery generator wash water and boiler cleaning wastewaters, and an update to the off-site wastewater sources to be discharged via the LP1 outfalls.

The discharge of low volume waste and metal cleaning waste via internal outfalls from the LP1 facility are subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: total suspended solids, oil and grease, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total iron, total copper, and pH. Sanitary domestic wastewater from LP1 is treated in an on-site aerobic treatment system. The proposed discharge of treated domestic wastewater from Outfall 201 is subject to requirements from 30 TAC Chapter 309 (Domestic Wastewater Treatment Limitations). The pollutants expected from domestic wastewater discharges are: total residual chlorine, total suspended solids, Biochemical Oxygen Demand 5-day (BOD5), and pH.

Spanish:

Lower Colorado River Authority (LCRA) (CN600253637) opera la Central Eléctrica Lost Pines 1 (LP1) (RN100723915), que es una instalación de generación de energía eléctrica de ciclo combinado que consta de dos generadores de turbina de combustión y dos generadores de vapor de recuperación de calor sin combustión (HRSG) con una capacidad bruta aproximada de generación de 540 megavatios (MW). La instalación es propiedad de LCRA y GenTex Power Corporation (CN600411581) y está ubicada en el 256 Power Plant Road, Condado de Bastrop, Bastrop, Texas 78602.

LCRA y GenTex Power Corporation han solicitado a TCEQ una enmienda importante y renovación del Permiso No. WQ0004155000 del Sistema de eliminación de descargas contaminantes de Texas (TPDES) de LP1. Este permiso autoriza a la planta a descargar aguas residuales de desagües internos que son monitoreados por LP1 antes de la descarga. Estos desagües internos están autorizados para descargar aguas residuales de bajo volumen, aguas pluviales, agua de lavado del generador de

recuperación de calor y aguas residuales de limpieza de calderas en un canal de descarga compartido por la planta de energía Sim Gideon (SGP), que se encuentra adyacente a LP1. LP1 también descarga agua de enfriamiento auxiliar y de un solo paso en el canal de descarga, y SGP está autorizada a monitorear y descargar estas aguas residuales de LP1 a través de su desagüe 001 de conformidad con el Permiso TPDES No. WQ0002052000. LCRA y GenTex Power Corporation solicitan una enmienda importante para agregar un nuevo desagüe interno 201 para autorizar la descarga de aguas residuales domésticas tratadas. Otros cambios solicitados incluyen la modificación del desagüe 401 existente para incluir la autorización para descargar cualquier "desecho de limpieza de metales" generado en la planta, además del agua de lavado del generador de recuperación de calor y las aguas residuales de limpieza de calderas, y una actualización de las fuentes de aguas residuales fuera del sitio que se descargarán a través de los desagües de LP1.

La descarga de desechos de bajo volumen y desechos de limpieza de metales a través de desagües internos de la instalación de LP1 está sujeta a las pautas federales de limitación de vertidos del 40 CFR Parte 423. Los contaminantes que se esperan de estas descargas según el 40 CFR Parte 423 son: sólidos suspendidos totales, aceite y grasa, demanda bioquímica de oxígeno (DBO), demanda química de oxígeno (DQO), hierro total, cobre total y pH. Las aguas residuales sanitarias domésticas de LP1 se tratan en un sistema de tratamiento aeróbico en el sitio. La descarga propuesta de aguas residuales domésticas tratadas del desagüe 201 está sujeta a los requisitos del Capítulo 309 del TAC 30 (Limitaciones del tratamiento de aguas residuales domésticas). Los contaminantes esperados de las descargas de aguas residuales domésticas son: cloro residual total, sólidos suspendidos totales, demanda bioquímica de oxígeno de 5 días (DBO5) y pH.

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☐ New Permit or Registration Application

☒ New Activity - modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☐ Considered to have significant public interest, **and**

☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☒ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

This permit action does not have significant public interest. The facility is not in a listed geographical location.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☐ Texas Pollutant Discharge Elimination System (TPDES)

- ☐ Texas Land Application Permit (TLAP)
- ☐ State Only Concentrated Animal Feeding Operation (CAFO)
- ☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

(City)

(County)

(Census Tract)
Please indicate which of these three is the level used for gathering the following information.

☐ City ☐ County ☐ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

(b) Per capita income for population near the specified location

(c) Percent of minority population and percent of population by race within the specified location

(d) Percent of Linguistically Isolated Households by language within the specified location

(e) Languages commonly spoken in area by percentage

(f) Community and/or Stakeholder Groups

(g) Historic public interest or involvement

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☐ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☐ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☐ Yes ☐ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office ☐ TCEQ Central Office

☐ Public Place (specify)

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

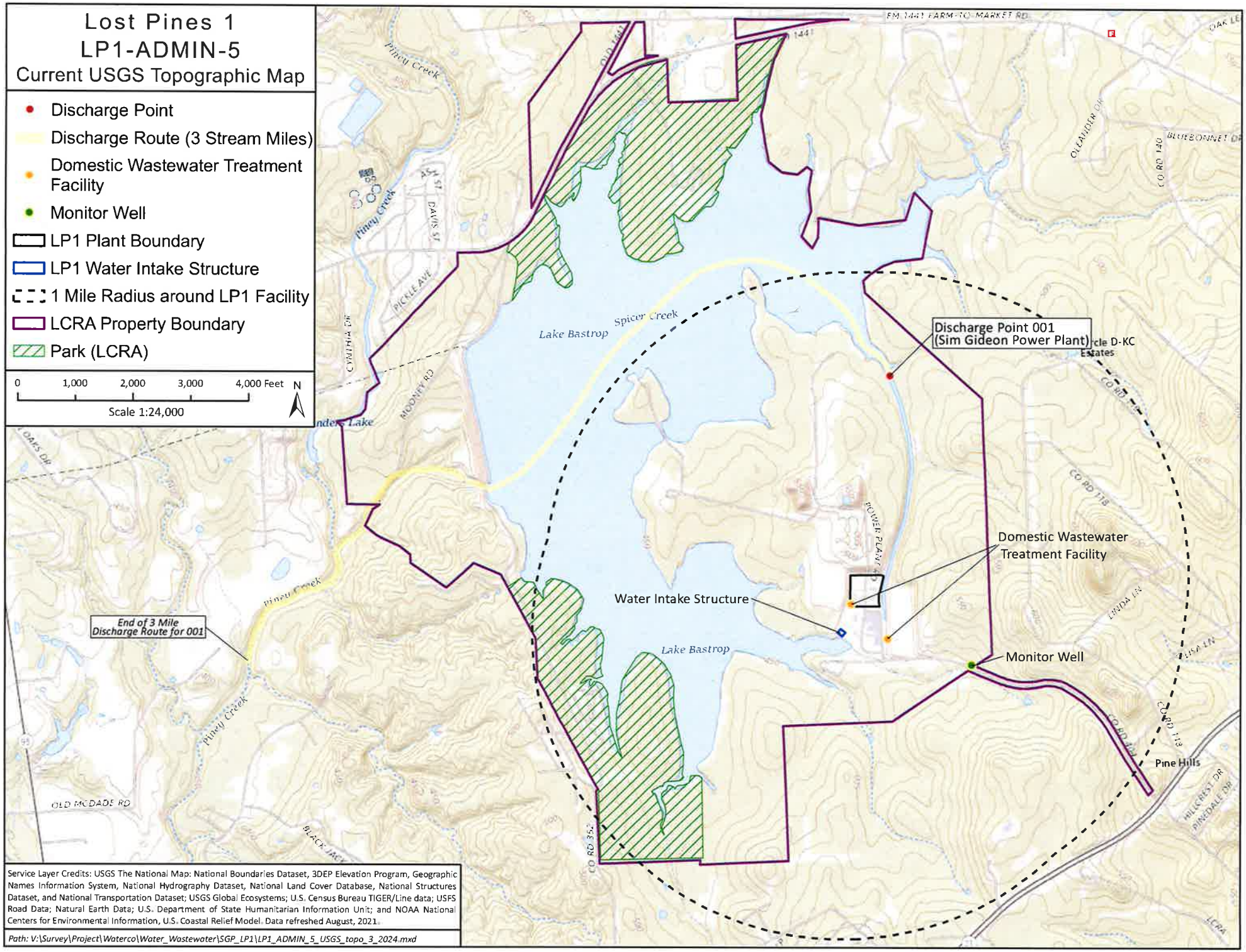
What types of notice will be provided?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)


Lost Pines 1
LP1-ADMIN-5
Current USGS Topographic Map
Discharge Point
Discharge Route (3 Stream Miles)
Domestic Wastewater Treatment Facility
Monitor Well
LP1 Plant Boundary
LP1 Water Intake Structure
1 Mile Radius around LP1 Facility
LCRA Property Boundary
Park (LCRA)
0 1,000 2,000 3,000 4,000 Feet
Scale 1:24,000
N
Discharge Point 001 (Sim Gideon Power Plant)
Domestic Wastewater Treatment Facility
Water Intake Structure
Monitor Well
End of 3 Mile Discharge Route for 001
Lake Bastrop
Spicer Creek
Piney Creek
FM 1441 FARM-TO-MARKET RD
Pine Hills
Service Layer Credits: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed August, 2021.
Path: V:\Survey\Project\Waterco\Water_Wastewater\SGP_LP1\LP1_ADMIN_5_USGS_topo_3_2024.mxd

Lost Pines 1
LP1-ADMIN-6
Affected Landowners

- Discharge Point
- Discharge Route (1 Stream Mile)
- 1/2 Mile Radius around Discharge Point
- Lost Pines 1 Plant Site (Treatment Facility)
- Lost Pines 1 Water Intake Structure
- LCRA Property Boundary
- Affected Landowners
  1.) Landowners adjacent to LCRA Property Boundary and
  2.) Landowners along the shoreline for a 1/2 mile radius from Discharge Point

0 400 800 1,600 Feet

LCRA
ENERGY • WATER • COMMUNITY SERVICES

Source for adjacent landowner property boundaries: White Star: 12/2023
Bastrop County Appraisal District website verification: 02/2024

Lake Bastrop

LCRA Property

FM 1209

Discharge Point 001
(Sim Gideon Power Plant)

Highway 21 (Unsigned)

See Inset

Inset

0 100 200 400 Feet

Path: V:\Survey\Project\Waterco\Water_Wastewater\SGP_LP1\LP1_ADMIN_6_Affected_Landowners_3_2024.mxd

LP1 - ADMIN 7

Landowner List - Cross-Referenced to Affected Landowner Map (LP1-ADMIN 6)

MAP #	OWNER NAME	MAILING ADDRESS	CITY	STATE	ZIP CODE
1	BDR GREEN VALLEY DRIVE LLC	PO BOX 29298	AUSTIN	TX	78755
2	ROY LYNN MCCRARY	302 GREEN VALLEY DR	BASTROP	TX	78602
3	THE CARROLL FAMILY TRUST (BARBARA S CARROLL - TRUSTEE)	6425 ZINN DR	OAKLAND	CA	94611
4	JAVIER SOLORZANO & MARIA PEREZ	292 GREEN VALLEY DR	BASTROP	TX	78602
5	DANIEL & ROSA BENITEZ	286 GREEN VALLEY DR	BASTROP	TX	78602
6	JOSE LUIS SOLORZANO	270 GREEN VALLEY DR UNIT B	BASTROP	TX	78602
7	FELIPE DE JESUS PONCE LOREDO/MARIA PEREZ	270 GREEN VALLEY DR	BASTROP	TX	78602
8	HARRY & CONNIE SCHROEDER	268 GREEN VALLEY DR	BASTROP	TX	78602
9	VERNETTA & JOE WILLIAMS	260 GREEN VALLEY DR	BASTROP	TX	78602
10	BASTROP CHURCH OF NEW BEGINNINGS	256 GREEN VALLEY DR	BASTROP	TX	78602
11	JUDY SMITH	255 GREEN VALLEY DR	BASTROP	TX	78602
12	MARGARET ELIZABETH BORHO	12404 LAKEWOOD DR	BUDA	TX	78610
13	THE REAL WILLIAMS LLC- 112 LAKE DRIVE SERIES	7140 SUSSEX LN	MANSFIELD	TX	76063
14	THE REAL WILLIAMS LLC- 114 LAKE DRIVE SERIES	7140 SUSSEX LN	MANSFIELD	TX	76063
15	TEXAS RURAL INVESTING FUND NO 1 LLC	PO BOX 151	GROESBECK	TX	76642
16	COY & BRITNEY WILLIAMS	113 LAKE DR	BASTROP	TX	78602
17	WILLIAM BOWLES	640 FM 1441	BASTROP	TX	78602
18	MATTHEW JOHN STANGER	12508 LIMERICK AVE	AUSTIN	TX	78727
19	JOSE ESVIN HERNANDEZ RAMIREZ & CARMEN JULIETA MOLINA MESA	199 GREEN VALLEY DR	BASTROP	TX	78602
20	JIM ROBERT BLACKWELL	120 BLACKWELL LN	BASTROP	TX	78602
21	WILLIE SCHLICKEISEN	1714 ROOSEVELT ST	BASTROP	TX	78602
22	ARTURO JAIMES JARAMILLO	8918 BURKLUND FARMS RD	DEL VALLE	TX	78617
23	CAPITOL AREA COUNCIL, BOY SCOUTS C/O RAY SMITH	12500 N INTERSTATE 35	AUSTIN	TX	78753
24	CELIA MERRICK	449 PORTER RD	BASTROP	TX	78602
25	STEVE & SUSAN LAPORTE	457 PORTER RD	BASTROP	TX	78602
26	DONALD WEEKS JR	463 PORTER RD	BASTROP	TX	78602
27	JAMES SHEFFIELD	362 PINE TREE LOOP	BASTROP	TX	78602
28	JENS & KIMBERLY JENSEN	330 PINE TREE LOOP	BASTROP	TX	78602
29	ELIZABETH CLEMENTSON & DANIEL MCKINNEY	316 PINE TREE LOOP	BASTROP	TX	78602
30	ORLANDA VALKA	314 PINE TREE LOOP	BASTROP	TX	78602
31	BRANDON HIGGINS	6704 MENCHACA RD UNIT 28	AUSTIN	TX	78745
32	JON SEITZ	260 PINE TREE LOOP	BASTROP	TX	78602
33	TIM & MARY BICKERSTAFF	244 PINE TREE LOOP	BASTROP	TX	78602
34	COITT & KRISTI KESSLER	PO BOX 1269	BASTROP	TX	78602
35	MATTHEW TURNER	411 LEXINGTON RD	ELGIN	TX	78621
36	RICK & PATRICIA SHELLY	PO BOX 1276	BASTROP	TX	78602
37	SHAWN & STACEY HARRIS	190 PINE TREE LOOP	BASTROP	TX	78602
38	LINDA PENA & MATTHEW PETERSON	305 GARWOOD ST	SMITHVILLE	TX	78957
39	VEERA KUMAR & USHA RANI SURAPANENI	12510 EMERALD SPRINGS DR	PEARLAND	TX	77584
40	CHARLIE & KELLY PAROBEK	329 HOFFMAN RD	BASTROP	TX	78602
41	SARAH MARIE GUENTHER	122 PINE TREE LOOP #A	BASTROP	TX	78602
42	LOST ACRES LLC	5900 BALCONES DR SUITE 100	AUSTIN	TX	78731
43	MICHAEL PICCIANDRA	119 POWER PLANT RD	BASTROP	TX	78602
44	ETC TEXAS PIPELINE LTD	800 E SONTERRA BLVD SUITE 400	SAN ANTONIO	TX	78258
45	BLUEBONNET ELECT COOP INC	PO BOX 240	GIDDINGS	TX	78942
46	JAMES & MARIE BAIN	130 GNOME HOLLOW DR	BASTROP	TX	78602
47	LISA NORMAN & PATRICK GAYLOR	101 GNOME HOLLOW DR	BASTROP	TX	78602
48	JIMMY NASSOUR	3839 BEE CAVES RD SUITE 200	WEST LAKE HILLS	TX	78746
49	MICHELLE & RYAN BANTA	321 S SHORE RD	BASTROP	TX	78602
50	DANIEL SMITH	PO BOX 433	BASTROP	TX	78602
51	KENNETH RAY & NAJIA NOORI DAVISON	362 S SHORE RD	BASTROP	TX	78602
52	SYLVIA DEL BOSQUE (CONN)	2400 JACKS PASS	AUSTIN	TX	78734
53	JILL BRACKIN & JUDD ROUSH	374 S SHORE RD	BASTROP	TX	78602
54	CASSIE KEETON GRIFFIN	103 LAKE LEAF DR	BASTROP	TX	78602
55	THREE LABS HOLDINGS LLC	6140 HIGHWAY 6 SUITE 92	MISSOURI CITY	TX	77459
56	JASON MONTGOMERY & MARITZA RODRIGUES	117 LAKE LEAF DR	BASTROP	TX	78602
57	LUIS ORTEGA & VANESSA LOLKUS	127 LAKE LEAF DR	BASTROP	TX	78602
58	CHRISTOPHER GRENON	135 LAKE LEAF DR	BASTROP	TX	78602
59	DONALD & GLORIA BAKER	RT 5 BOX 671	BASTROP	TX	78602
60	MARY ELIZABETH ASHTON	139 LAKE LEAF DR	BASTROP	TX	78602
61	CURTIS & SALLY HODGE	143 LAKE LEAF DR	BASTROP	TX	78602
62	GALE & GAYE LEE	153 LAKE LEAF DR	BASTROP	TX	78602
63	VIRGIL & JEANNIE KENNEDY	159 LAKE LEAF DR	BASTROP	TX	78602
64	JOHN PROSKE	143 LAKE MIST DR	BASTROP	TX	78602
65	PAITA CUSTOM HOMES LLC	123 ALTA VISTA DR	BASTROP	TX	78602
66	CONFIDENTIAL*				

* LCRA has contacted the Bastrop County Appraisal District and was informed that the information is confidential and not available to the public.

LP1 - ADMIN 7

Landowner List - Cross-Referenced to Affected Landowner Map (LP1-ADMIN 6)

67	CONFIDENTIAL*				
68	CONFIDENTIAL*				
69	CONFIDENTIAL*				
70	BRUCE HAHN C/O GREG HAHN	8111 LYNDON B JOHNSON FWY SUITE 860	DALLAS	TX	75251
71	JUSTIN & KATHRYN RANKIN	8209 VIA VERDE DR	AUSTIN	TX	78739
72	TRACY KONG & TRIEU THANH TRAN	9100 TRICKLE TRACE TRL	ROUND ROCK	TX	78681
73	THOMAS JR & CHRISTY LE FRANCE	200 OSAGE DR	MONTGOMERY	TX	77316
74	JO ANN MILLS	179 CYNTHIA DR	BASTROP	TX	78602
75	JILL ANN LAKE	177 CYNTHIA DR	BASTROP	TX	78602
76	SERGIO & ERICA RAMIREZ	20960 MANDRAKE DR	PFLUGERVILLE	TX	78660
77	EFRAIN & DEBRA ANN CANAVA	PO BOX 766	BASTROP	TX	78602
78	Piney Creek - No parcel or landowner information shown on Bastrop CAD				
79	DAYNA BECK & KAREN FARRIER	162 QUINTON ALLEN DR	BASTROP	TX	78602
80	CHARLIE LEE	14431 LIGHT FALLS CT	CYPRESS	TX	77429
81	RUBY & HUGO BARCENAS	6027 BLUEBELL CIR	AUSTIN	TX	78741
82	HERIBERTO ROSAS MORALES & PEDRO IVAN ARIAS HUAROTA	113 TERRA DR	ELGIN	TX	78621
83	CHAD DENTON	3904 PALMER DR	ROUND ROCK	TX	78664
84	VANESSA BELMONTES	139 PICKLE AVE	BASTROP	TX	78602
85	MARTIN & OLGA GALVAN	388 YOUNG SCHOOL HOUSE RD	SMITHVILLE	TX	78957
86	ROBERT IRVING	131 PICKLE AVE	BASTROP	TX	78602
87	DANIEL RAY MIRANDA	127 PICKLE AVE	BASTROP	TX	78602
88	ALEXANDER IVARRA ROMERO	123 PICKLE AVE	BASTROP	TX	78602
89	PATRICIA ANN DAVENPORT	121 PICKLE AVE	BASTROP	TX	78602
90	THOMAS J & WILMA J FINFROCK IRREVOCABLE TRUST	113 PICKLE AVE	BASTROP	TX	78602
91	ERNESTINA & HECTOR LUNA	423 FM 1441	BASTROP	TX	78602
92	SHADERIC & VELMA LUTTRELL	107 ASH ST	BASTROP	TX	78602
93	DONALD DUNCAN	PO BOX 706	BASTROP	TX	78602
94	EDGAR MORALES	305 GREEN VALLEY DR	BASTROP	TX	78602
95	OSCAR ARREDONDO CASTRO	7601 DAFFAN LN	AUSTIN	TX	78724

* LCRA has contacted the Bastrop County Appraisal District and was informed that the information is confidential and not available to the public.

LP1-ADMIN-8

Photographs of Treatment Unit and Proposed Outfall 201

LP1 Domestic Wastewater Treatment Unit

Photo A (existing treatment unit)

LP1 Proposed Outfall 201

Photo B (proposed discharge point)

Photo C (looking downstream)

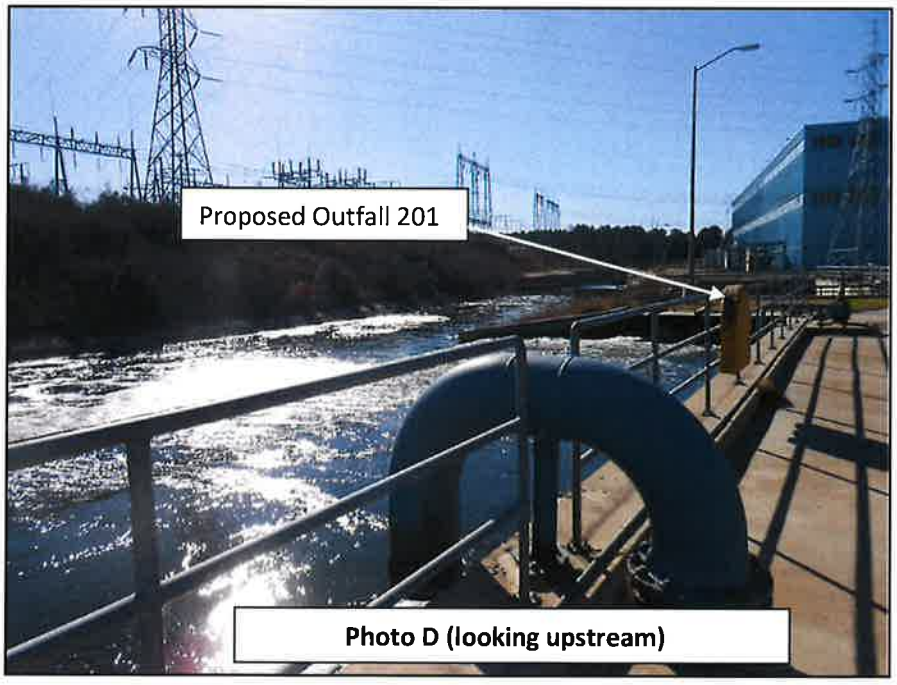
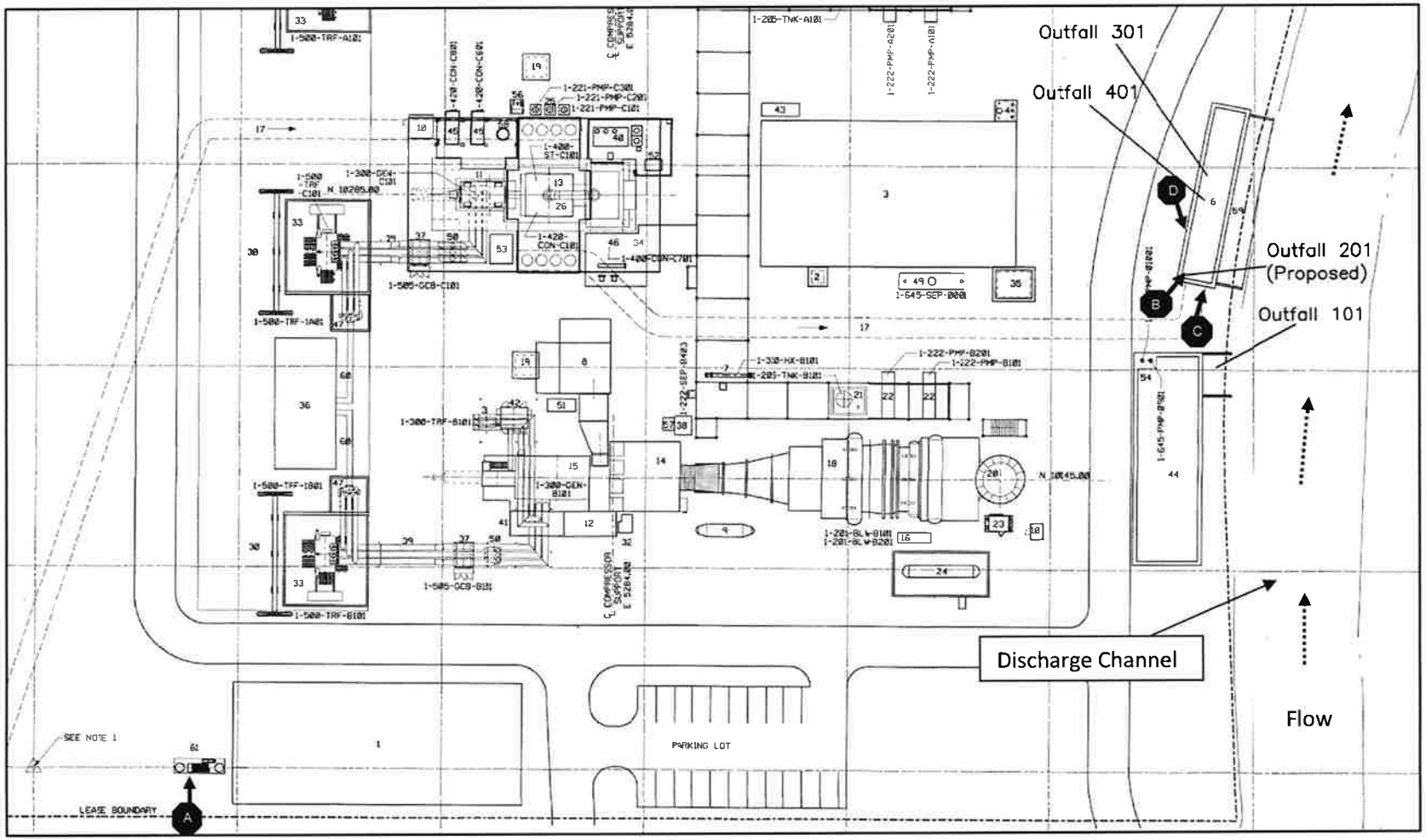
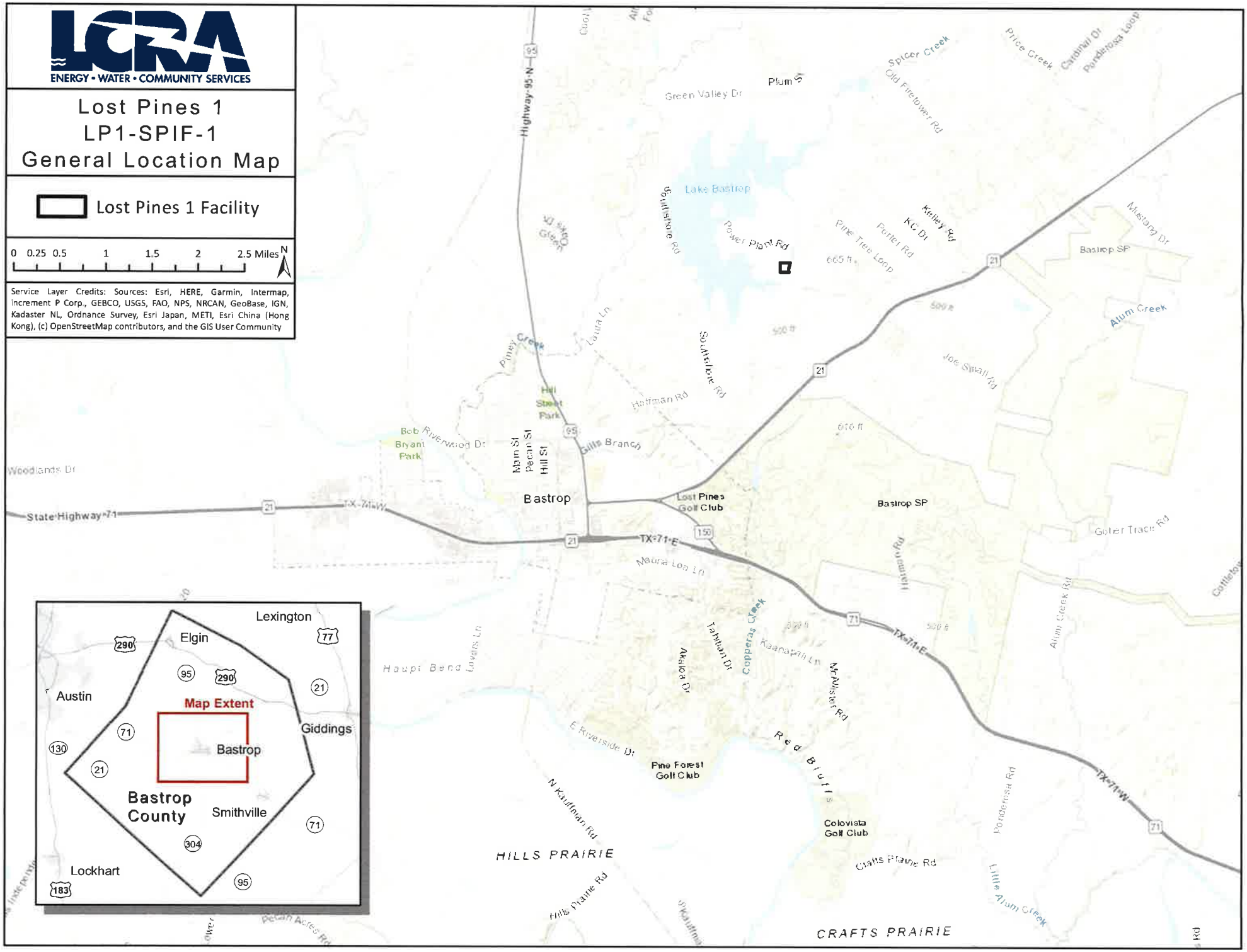


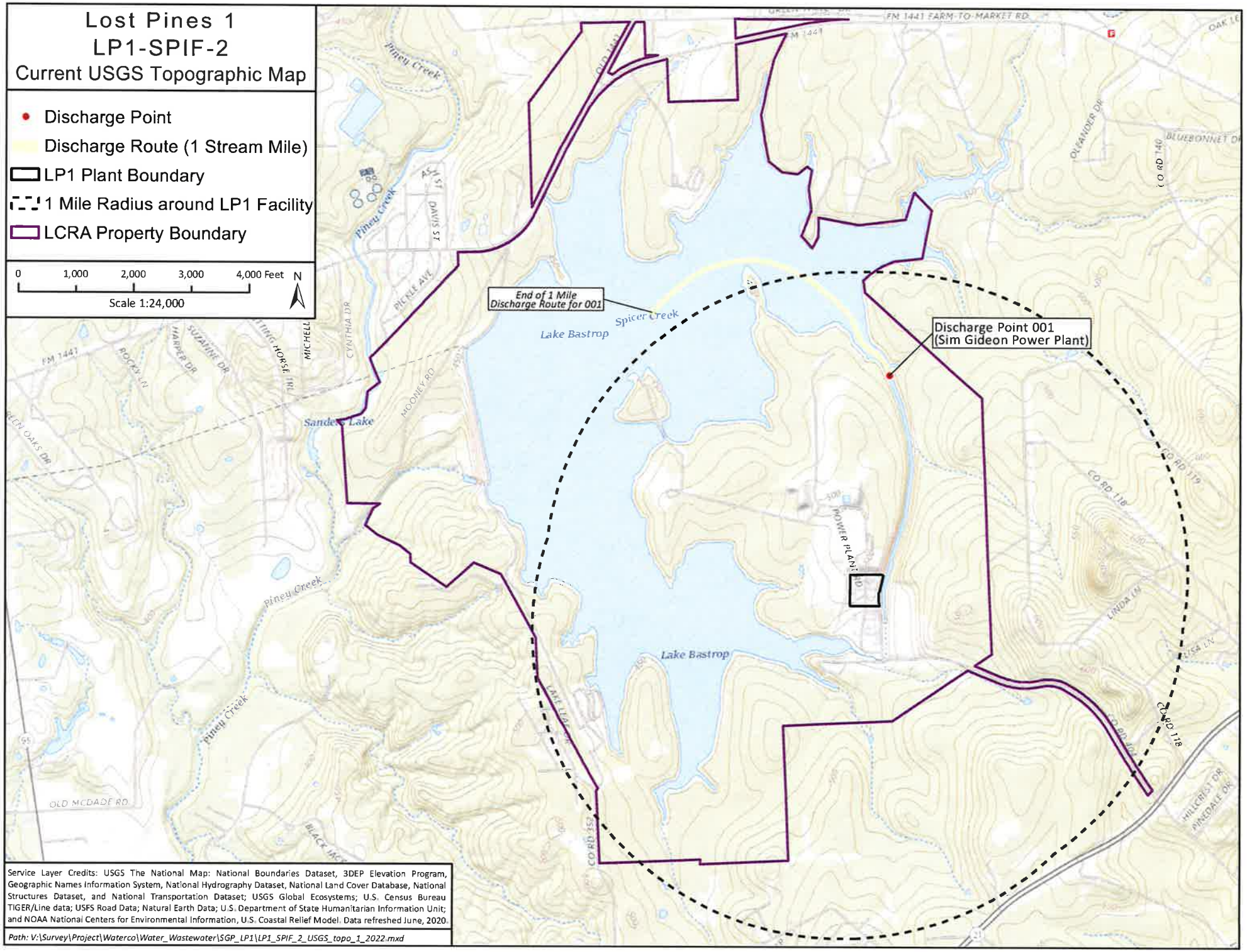
Photo D (looking upstream)

Plot Map of LP1 Photos



A: Photo of Domestic Wastewater Treatment Plant
B: Photo of Proposed Outfall 201 (discharge point)
C: Photo of Proposed Outfall 201 (looking downstream)
D: Photo of Proposed Outfall 201 (looking upstream)


LCRA
ENERGY • WATER • COMMUNITY SERVICES
Lost Pines 1
LP1-SPIF-1
General Location Map
Lost Pines 1 Facility
0 0.25 0.5 1 1.5 2 2.5 Miles
N
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Highway-95-N
Plum St
Green Valley Dr
Spicer Creek
Price Creek
Cardinal Dr
Ponderosa Loop
Old Fieldflower Rd
Lake Bastrop
Power Plant Rd
Pine Tree Loop
Portlet Rd
KC Dr
Kelley Rd
Mustang Dr
Bastrop SP
Alum Creek
Joe Sinatt Rd
Piney Creek
Hill Street Park
Hoffman Rd
Gills Branch
Bob Bryant Park
Riverwood Dr
Main St
Pecan St
Hill St
Bastrop
Lost Pines Golf Club
Woodlands Dr
State Highway 71
TX-71-W
TX-71-E
Maura Lon Ln
Goter Track Rd
Alum Creek Rd
Haupt Bend Lovers Ln
Copperas Creek
Tahitian Dr
Akaloa Dr
Kaanapali Ln
Mt Allister Rd
E Riverside Dr
Red Bluff
Pine Forest Golf Club
Colovista Golf Club
Crafts Plaine Rd
Ponderosa Rd
Little Alum Creek
N Kauffman Rd
S Kauffman Rd
Hills Plaine Rd
HILLS PRAIRIE
CRAFTS PRAIRIE
Pecan Acres Rd
Lexington
Elgin
Austin
Map Extent
Giddings
Bastrop
Bastrop County
Smithville
Lockhart
290
77
95
21
71
130
304
183
150


Lost Pines 1
LP1-SPIF-2
Current USGS Topographic Map
Discharge Point
Discharge Route (1 Stream Mile)
LP1 Plant Boundary
1 Mile Radius around LP1 Facility
LCRA Property Boundary
0 1,000 2,000 3,000 4,000 Feet
Scale 1:24,000
N
End of 1 Mile Discharge Route for 001
Discharge Point 001 (Sim Gideon Power Plant)
Spicer Creek
Lake Bastrop
Sandy Lake
Piney Creek
FM 1441
FM 1441 FARM-TO-MARKET RD
MOONEY RD
POWER PLANT RD
CO RD 118
CO RD 119
CO RD 118
CO RD 35
OLD MCDADE RD
Service Layer Credits: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2020.
Path: V:\Survey\Project\Waterco\Water_Wastewater\SGP_LP1\LP1_SPIF_2_USGS_topo_1_2022.mxd

TECHNICAL REPORT 1.0
INDUSTRIAL

The following information **is required** for all applications for a TLAP or an individual TPDES discharge permit.

For additional information or clarification on the requested information, refer to the Instructions for Completing the Industrial Wastewater Permit Application[1] available on the TCEQ website.

If more than one outfall is included in the application, provide applicable information for each individual outfall. **If an item does not apply to the facility, enter N/A** to indicate that the item has been considered. Include separate reports or additional sheets as **clearly cross-referenced attachments** and provide the attachment number in the space provided for the item the attachment addresses.

NOTE: This application is for an industrial wastewater permit only. Additional authorizations from the TCEQ Waste Permits Division or the TCEQ Air Permits Division may be needed.

1. FACILITY/SITE INFORMATION (Instructions, Pages 39-40)

a. Describe the general nature of the business and type(s) of industrial and commercial activities. Include all applicable SIC codes (up to 4).

The Lost Pines 1 Power Plant is a natural gas-fired combined cycle electric power generation facility. SIC Code 4911.

b. Describe all wastewater-generating processes at the facility.

Refer to Attachment LP1-TECH-1 Wastewater Processes.

[1] https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES_industrial_wastewater_steps.html

c. Provide a list of raw materials, major intermediates, and final products handled at the facility.

Materials List

Raw Materials	Intermediate Products	Final Products
Natural Gas		Electricity
Anhydrous Ammonia (CAS 7664-41-7)		
Water		

Attachment: Click to enter text.

d. Attach a facility map (drawn to scale) with the following information:

- Production areas, maintenance areas, materials-handling areas, waste-disposal areas, and water intake structures.
- The location of each unit of the WWTP including the location of wastewater collection sumps, impoundments, outfalls, and sampling points, if significantly different from outfall locations.

Attachment: LP1-TECH-2 Facility Map

e. Is this a new permit application for an existing facility?

☐ Yes ☒ No

If **yes**, provide background discussion: Click to enter text.

f. Is/will the treatment facility/disposal site be located above the 100-year frequency flood level.

☒ Yes ☐ No

List source(s) used to determine 100-year frequency flood plain: 48021C0220F (effective 5/9/2023)

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are used/proposed to prevent flooding (including tail water and rainfall run-on controls) of the treatment facility and disposal area: Click to enter text.

Attachment: Click to enter text.

g. For **new** or **major amendment** permit applications, will any construction operations result in a discharge of fill material into a water in the state?

☐ Yes ☒ No ☐ N/A (renewal only)

h. If **yes** to Item 1.g, has the applicant applied for a USACE CWA Chapter 404 Dredge and Fill permit?

☐ Yes ☐ No

If **yes**, provide the permit number: N/A

If **no**, provide an approximate date of application submittal to the USACE: Click to enter text.

2. TREATMENT SYSTEM (Instructions, Page 40)

a. List any physical, chemical, or biological treatment process(es) used/proposed to treat wastewater at this facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

Wastewater Treatment processes:

Oil/Water separator (OWS): additional treatment of oily wastewater
--Used to treat oily waste streams, including authorization for accepting similar wastes from LCRA's Sim Gideon Power Plant and Winchester Power Plant.
--Discharges through existing Outfall 101

Mobile oil/water separator is available as needed for wastewaters needing treatment

Domestic wastewater treatment plant: primary and secondary treatment
--Used for domestic wastewater
--Per this major amendment, requesting addition of proposed Outfall 201 to authorize discharge of treated effluent to discharge canal

Water Treatment Processes:

Cooling water (once-through and auxiliary): chemical treatment to reduce biofouling and scaling, includes chlorination
--Used for once-through circulating water and auxiliary cooling water
--Authorized to discharge through Outfall 001 of Sim Gideon Power Plant's industrial wastewater permit

High purity feed water: reverse osmosis (RO) system with mixed bed demineralizers
--Used to produce steam cycle make-up water
--Discharges as intermittent backwash from filters and RO reject water through Outfall 301

b. Attach a flow schematic **with a water balance** showing all sources of water and wastewater flow into the facility, wastewater flow into and from each treatment unit, and wastewater flow to each outfall/point of disposal.

Attachment: LP1-TECH-3 Water Balance

3. IMPOUNDMENTS (Instructions, Pages 40-42)

Does the facility use or plan to use any wastewater impoundments (e.g., lagoons or ponds?)

☐ Yes ☒ No

If **no**, proceed to Item 4. If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a - 3.e** for **new or proposed** impoundments. **NOTE:** See instructions, Pages 40-42, for additional information on the attachments required by Items 3.a – 3.e.

a. Complete the table with the following information for each existing, new, or proposed impoundment:

Use Designation: Indicate the use designation for each impoundment as Treatment (**T**), Disposal (**D**), Containment (**C**), or Evaporation (**E**).

Associated Outfall Number: Provide an outfall number if a discharge occurs or will occur.

Liner Type: Indicate the liner type as Compacted clay liner (**C**), In-situ clay liner (**I**), Synthetic/plastic/rubber liner (**S**), or Alternate liner (**A**). **NOTE:** See instructions for further detail on liner specifications. If an alternate liner (A) is selected, include an attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

Leak Detection System: If any leak detection systems are in place/planned, enter **Y** for yes. Otherwise, enter **N** for no.

Groundwater Monitoring Wells and Data: If groundwater monitoring wells are in place/planned, enter **Y** for yes. Otherwise, enter **N** for no. Attach any existing groundwater monitoring data.

Dimensions: Provide the dimensions, freeboard, surface area, storage capacity of the impoundments, and the maximum depth (not including freeboard). For impoundments with irregular shapes, submit surface area instead of length and width.

Compliance with 40 CFR Part 257, Subpart D: If the impoundment is required to be in compliance with 40 CFR Part 257, Subpart D, enter **Y** for yes. Otherwise, enter **N** for no.

Date of Construction: Enter the date construction of the impoundment commenced (mm/dd/yy).

Impoundment Information

Parameter	Pond #	Pond #	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)	N/A			
Associated Outfall Number				
Liner Type (C) (I) (S) or (A)				
Alt. Liner Attachment Reference				
Leak Detection System, Y/N				
Groundwater Monitoring Wells, Y/N				
Groundwater Monitoring Data Attachment				
Pond Bottom Located Above The Seasonal High-Water Table, Y/N				
Length (ft)				
Width (ft)				
Max Depth From Water Surface (ft), Not Including Freeboard				
Freeboard (ft)				
Surface Area (acres)				
Storage Capacity (gallons)				
40 CFR Part 257, Subpart D, Y/N				
Date of Construction				

Impoundment Information

Parameter	Pond #	Pond #	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)				
Associated Outfall Number				
Liner Type (C) (I) (S) or (A)				
Alt. Liner Attachment Reference				
Leak Detection System, Y/N				
Groundwater Monitoring Wells, Y/N				
Groundwater Monitoring Data Attachment				
Pond Bottom Located Above The Seasonal High-Water Table, Y/N				

Parameter	Pond #	Pond #	Pond #	Pond #
Length (ft)				
Width (ft)				
Max Depth From Water Surface (ft), not including freeboard				
Freeboard (ft)				
Surface Area (acres)				
Storage Capacity (gallons)				
40 CFR Part 257, Subpart D, Y/N				
Date of Construction				

Attachment: Click to enter text.

The following information (**Items 3.b – 3.e**) is required only for **new or proposed** impoundments.

b. For new or proposed impoundments, attach any available information on the following items. If attached, check **yes** in the appropriate box. Otherwise, check **no** or **not yet designed**.

i. Liner data

☐ Yes ☐ No ☐ Not yet designed

ii. Leak detection system or groundwater monitoring data

☐ Yes ☐ No ☐ Not yet designed

iii. Groundwater impacts

☐ Yes ☐ No ☐ Not yet designed

NOTE: Item b.iii is required if the bottom of the pond is not above the seasonal high-water table in the shallowest water-bearing zone.

Attachment: Click to enter text.

For TLAP applications: Items 3.c – 3.e are **not required**, continue to Item 4.

c. Attach a USGS map or a color copy of original quality and scale which accurately locates and identifies all known water supply wells and monitor wells within ½-mile of the impoundments.

Attachment: Click to enter text.

d. Attach copies of State Water Well Reports (e.g., driller's logs, completion data, etc.), and data on depths to groundwater for all known water supply wells including a description of how the depths to groundwater were obtained.

Attachment: Click to enter text.

e. Attach information pertaining to the groundwater, soils, geology, pond liner, etc. used to assess the potential for migration of wastes from the impoundments or the potential for contamination of groundwater or surface water.

Attachment: Click to enter text.

4. OUTFALL/DISPOSAL METHOD INFORMATION (Instructions, Pages 42-43)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge operations, and for each point of disposal for TLAP operations.

If there are more outfalls/points of disposal at the facility than the spaces provided, copies of pages 6 and/or numbered accordingly (i.e., page 6a, 6b, etc.) may be used to provide information on the additional outfalls.

For TLAP applications: Indicate the disposal method and each individual irrigation area **I**, evaporation pond **E**, or subsurface drainage system **S** by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area in the space provided for **Outfall** number (e.g. **E1** for evaporation pond 1, **I2** for irrigation area No. 2, etc.).

Outfall Latitude and Longitude

Outfall Number	Latitude-decimal degrees	Longitude-decimal degrees
101	30.14719 N	97.26981 W
201 (proposed)	30.14733 N	97.26990 W
301	30.14747 N	97.26987 W
401	30.14744 N	97.26988 W

Outfall Location Description

Outfall Number	Location Description
101	Eastern side of facility at discharge canal; at the outlet of detention basis
201 (proposed)	Eastern side of facility at discharge canal; at LP1 cooling water outlet
301	Eastern side of facility at discharge canal; at LP1 cooling water outlet
401	Eastern side of facility at discharge canal; from temporary hose set up at time of discharge

Description of Sampling Points (if different from Outfall location)

Outfall Number	Description of Sampling Point
101	Same as outfall location
201 (proposed)	Same as outfall location
301	Same as outfall location
401	Same as outfall location

Outfall Flow Information – Permitted and Proposed

Outfall Number	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)	Anticipated Discharge Date (mm/dd/yy)
101	Report	Report	Report	Report	Existing
201 (proposed)	N/A	N/A	0.0017	0.0032	Immediate upon permit issuance
301	Report	Report	Report	Report	Existing
401	Report	Report	Report	Report	Existing

Outfall Discharge – Method and Measurement

Outfall Number	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
101	Y	N	Pump Curve – Estimate
201 (proposed)	Y	N	Pump flow integrator - Estimate
301	Y	N	Estimate
401	Y	N	Pump Curve - Estimate

Outfall Discharge – Flow Characteristics

Outfall Number	Intermittent Discharge? Y/N	Continuous Discharge? Y/N	Seasonal Discharge? Y/N	Discharge Duration (hrs/day)	Discharge Duration (days/mo)	Discharge Duration (mo/yr)
101	Y	N	N	24	30	12
201 (proposed)	Y	N	N	24	30	12
301	Y	N	N	24	30	12
401	Y	N	N	24	30	12

Wastestream Contributions

Outfall No.: 101

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Low volume waste sources (includes treated oily wastewater)	0.872	99%
Stormwater (based on average annual rainfall in Bastrop County)	0.012	1%

Outfall No.: 201 (proposed)

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Domestic wastewater	0.0017	100%

Outfall No.: 301

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Low volume waste sources	0.116	100%

Outfall No.: 401

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Metal cleaning waste sources	0 - 0.162	100%

Attachment: Click to enter text.

5. BLOWDOWN AND ONCE-THROUGH COOLING WATER DISCHARGES (Instructions, Page 44)

a. Does the facility use/propose to use any cooling towers which discharge blowdown or other wastestreams to the outfall(s)?

☐ Yes ☒ No

NOTE: If the facility uses or plans to use cooling towers, Item 12 **is required**.

b. Does the facility use or plan to use any boilers that discharge blowdown or other wastestreams to the outfall(s)?

☒ Yes ☐ No

c. Does or will the facility discharge once-through cooling water to the outfall(s)?

☒ Yes ☐ No

NOTE: If the facility uses or plans to use once-through cooling water, Item 12 **is required**.

d. If **yes** to Items 5.a, 5.b, **or** 5.c, attach the SDS with the following information for each chemical additive.

- Manufacturers Product Identification Number
- Product use (e.g., biocide, fungicide, corrosion inhibitor, etc.)
- Chemical composition including CASRN for each ingredient
- Classify product as non-persistent, persistent, or bioaccumulative
- Product or active ingredient half-life
- Frequency of product use (e.g., 2 hours/day once every two weeks)
- Product toxicity data specific to fish and aquatic invertebrate organisms
- Concentration of whole product or active ingredient, as appropriate, in wastestream.

Attach a summary of this information in addition to the submittal of the SDS for each specific wastestream and the associated chemical additives and specify which outfalls are affected.

Attachment: LP1-TECH-4 Safety Data Sheets

e. Cooling Towers and Boilers

If **yes** to either Item 5.a **or** 5.b, complete the following table.

Cooling Towers and Boilers

Type of Unit	Number of Units	Dly Avg Blowdown (gallons/day)	Dly Max Blowdown (gallons/day)
Cooling Towers	0	N/A	N/A
Boilers	2 (heat recovery steam generators)	57,600	86,750

6. STORMWATER MANAGEMENT (Instructions, Page 44)

Are there any existing/proposed outfalls which discharge stormwater associated with industrial activities, as defined at *40 CFR § 122.26(b)(14)*, commingled with any other wastestream?

☐ Yes ☒ No

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in some manner which may result in exposure of the activities or materials to stormwater: Click to enter text.

7. DOMESTIC SEWAGE, SEWAGE SLUDGE, AND SEPTAGE MANAGEMENT AND DISPOSAL (Instructions, Page 45)

Domestic Sewage - Waste and wastewater from humans or household operations that is discharged to a wastewater collection system or otherwise enters a treatment works.

a. Check the box next to the appropriate method of domestic sewage and domestic sewage sludge treatment or disposal. Complete Worksheet 5.0 or Item 7.b if directed to do so.

- ☒ Domestic sewage is routed (i.e., connected to or transported to) to a WWTP permitted to receive domestic sewage for treatment, disposal, or both. **Complete Item 7.b.**
- ☐ Domestic sewage disposed of by an on-site septic tank and drainfield system. **Complete Item 7.b.**
- ☐ Domestic and industrial treatment sludge **ARE commingled** prior to use or disposal.
- ☒ Industrial wastewater and domestic sewage are treated separately, and the respective sludge **IS NOT commingled** prior to sludge use or disposal. **Complete Worksheet 5.0.**
- ☐ Facility is a POTW. **Complete Worksheet 5.0.**
- ☐ Domestic sewage is not generated on-site.
- ☒ Other (e.g., portable toilets), specify and **Complete Item 7.b**: Plant uses an on-site aerobic treatment system with chlorination as the disinfectant to treat domestic waste and has authorization from Bastrop County to spray apply the effluent (Permit No. 15-355). The domestic sludge is transported and received by the plant/haulers in 7b. Portable toilets are also brought onsite during periods of increased staffing. This TPDES major amendment requests authorization to discharge part or all of the treated domestic waste effluent via a proposed internal Outfall 201. See No. 13 of this Technical Report.

b. Provide the name and TCEQ, NPDES, or TPDES Permit No. of the waste-disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TCEQ Registration No. of the hauler.

Domestic Sewage Plant/Hauler Name

Plant/Hauler Name	Permit/Registration No.
Grandy Ranch, LTD	WQ0004458000
S&M Vacuum and Waste Service, LTD	20089

8. IMPROVEMENTS OR COMPLIANCE/ENFORCEMENT REQUIREMENTS (Instructions, Page 45)

a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?

☐ Yes ☒ No

b. Has the permittee completed or planned for any improvements or construction projects?

☐ Yes ☒ No

c. If **yes** to either 8.a **or** 8.b, provide a brief summary of the requirements and a status update: N/A

9. TOXICITY TESTING (Instructions, Page 45)

Have any biological tests for acute or chronic toxicity been made on any of the discharges or on a receiving water in relation to the discharge within the last three years?

☒ Yes ☐ No

If **yes**, identify the tests and describe their purposes: Lost Pines 1 Power Plant's once-through and auxiliary cooling water and internal outfalls flow into the discharge canal of the adjacent facility, LCRA Sim Gideon Power Plant. The Sim Gideon Power Plant is authorized to discharge the Lost Pines effluent from Outfall 001 under TPDES Permit No. WQ0002052000. The Sim Gideon permit requires whole effluent testing (biomonitoring) on Outfall 001. Requirements include the chronic static renewal survival and reproduction test using the water flea and chronic static renewal 7-day larval survival and growth test using the fathead minnow. Results are sent to TCEQ.

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA.

Attachment: N/A

10. OFF-SITE/THIRD PARTY WASTES (Instructions, Page 45)

a. Does or will the facility receive wastes from off-site sources for treatment at the facility, disposal on-site via land application, or discharge via a permitted outfall?

☒ Yes ☐ No

If **yes**, provide responses to Items 10.b through 10.d below.

If **no**, proceed to Item 11.

b. Attach the following information to the application:

- List of wastes received (including volumes, characterization, and capability with on-site wastes).
- Identify the sources of wastes received (including the legal name and addresses of the generators).
- Description of the relationship of waste source(s) with the facility's activities.

Attachment: LP1-TECH-5 Off-Site Wastes

c. Is or will wastewater from another TCEQ, NPDES, or TPDES permitted facility commingled with this facility's wastewater after final treatment and prior to discharge via the final outfall/point of disposal?

☒ Yes ☐ No

If **yes**, provide the name, address, and TCEQ, NPDES, or TPDES permit number of the contributing facility and a copy of any agreements or contracts relating to this activity.

Attachment: LP1-TECH-5 Off-Site Wastes

d. Is this facility a POTW that accepts/will accept process wastewater from any SIU and has/is required to have an approved pretreatment program under the NPDES/TPDES program?

☐ Yes ☒ No

If **yes**, **Worksheet 6.0** of this application **is required**.

11. RADIOACTIVE MATERIALS (Instructions, Pages 46)

a. Are/will radioactive materials be mined, used, stored, or processed at this facility?

☐ Yes ☒ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L.

Radioactive Materials Mined, Used, Stored, or Processed

Radioactive Material	Concentration (pCi/L)

b. Does the applicant or anyone at the facility have any knowledge or reason to believe that radioactive materials may be present in the discharge, including naturally occurring radioactive materials in the source waters or on the facility property?

☐ Yes ☒ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L. Do not include information provided in response to Item 11.a.

Radioactive Materials Present in the Discharge

Radioactive Material	Concentration (pCi/L)

12. COOLING WATER (Instructions, Pages 46-47)

a. Does the facility use or propose to use water for cooling purposes?

☒ Yes ☐ No

If **no**, stop here. If **yes**, complete Items 12.b thru 12.f.

b. Cooling water is/will be obtained from a groundwater source (e.g., on-site well).

☐ Yes ☒ No

If **yes**, stop here. If **no**, continue.

c. Cooling Water Supplier

i. Provide the name of the owner(s) and operator(s) for the CWIS that supplies or will supply water for cooling purposes to the facility.

Cooling Water Intake Structure(s) Owner(s) and Operator(s)

CWIS ID	LP1-001	River Pump (only used as backup for lake make-up water)		
Owner	GenTex/LCRA	LCRA		
Operator	LCRA	LCRA		

ii. Cooling water is/will be obtained from a Public Water Supplier (PWS)

☐ Yes ☒ No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS No. Click to enter text.

iii. Cooling water is/will be obtained from a reclaimed water source?

☐ Yes ☒ No

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here: Click to enter text.

iv. Cooling water is/will be obtained from an Independent Supplier

☐ Yes ☒ No

If **yes**, provide the actual intake flow of the Independent Supplier's CWIS that is/will be used to provide water for cooling purposes to the facility and proceed: Click to enter text.

If **no**, proceed to Item 12.d.

d. 316(b) General Criteria

i. The CWIS(s) used to provide water for cooling purposes to the facility has or will have a cumulative design intake flow of 2 MGD or greater.

☒ Yes ☐ No

ii. At least 25% of the total water withdrawn by the CWIS is/will be used at the facility exclusively for cooling purposes on an annual average basis.

☒ Yes ☐ No

iii. The CWIS(s) withdraw(s)/propose(s) to withdraw water for cooling purposes from surface waters that meet the definition of Waters of the United States in *40 CFR § 122.2*.

☒ Yes ☐ No

If **no**, provide an explanation of how the waterbody does not meet the definition of Waters of the United States in *40 CFR § 122.2*: Click to enter text.

If **yes** to all three questions in Item 12.d, the facility **meets** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA. Proceed to **Item 12.f**.

If **no** to any of the questions in Item 12.d, the facility **does not meet** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA; however, a determination is required based upon BPJ. Proceed to **Item 12.e**.

e. The facility does not meet the minimum requirements to be subject to the fill requirements of Section 316(b) **and uses/proposes to use cooling towers**.

☐ Yes ☒ No

If **yes**, stop here. If **no**, complete Worksheet 11.0, Items 1(a), 1(b)(i-iii) and (vi), 2(b)(i), and 3(a) to allow for a determination based upon BPJ.

f. Oil and Gas Exploration and Production

i. The facility is subject to requirements at 40 CFR Part 435, Subparts A or D.

☐ Yes ☒ No

If **yes**, continue. If **no**, skip to Item 12.g.

ii. The facility is an existing facility as defined at 40 CFR § 125.92(k) or a new unit at an existing facility as defined at 40 CFR § 125.92(u).

☐ Yes ☐ No

If **yes**, complete Worksheet 11.0, Items 1(a), 1(b)(i-iii) and (vi), 2(b)(i), and 3(a) to allow for a determination based upon BPJ. If **no**, skip to Item 12.g.iii.

g. Compliance Phase and Track Selection

i. Phase I – New facility subject to 40 CFR Part 125, Subpart I

☐ Yes ☒ No

If **yes**, check the box next to the facility's compliance track selection, attach the requested information, and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

☐ Track I – AIF greater than 2 MGD, but less than 10 MGD
- Attach information required by *40 CFR §§ 125.86(b)(2)-(4).*

☐ Track I – AIF greater than 10 MGD
- Attach information required by *40 CFR § 125.86(b).*

☐ Track II
- Attach information required by *40 CFR § 125.86(c).*

Attachment: Click to enter text.

ii. Phase II – Existing facility subject to 40 CFR Part 125, Subpart J

☒ Yes ☐ No

If **yes**, complete Worksheets 11.0 through 11.3, as applicable.

iii. Phase III – New facility subject to 40 CFR Part 125, Subpart N

☐ Yes ☒ No

If **yes**, check the box next to the facility's compliance track selection and provide the requested information.

☐ Track I – Fixed facility
- Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

☐ Track I – Not a fixed facility
- Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Item 2 (except the CWIS latitude and longitude under Item 2.a).

☐ Track II – Fixed facility
- Attach information required by 40 CFR § 125.136(c) and complete Worksheet 11.0, Items 2 and 3.

Attachment: Click to enter text.

NOTE: Item 13 is required only for existing permitted facilities.

13. PERMIT CHANGE REQUESTS (Instructions, Pages 49-50)

a. Is the facility requesting a **major amendment** of an existing permit?

☒ Yes ☐ No

If **yes**, list each request individually and provide the following information: 1) detailed information regarding the scope of each request and 2) a justification for each request. Attach any supplemental information or additional data to support each request.

Permittee requests the following major amendments:

1) addition of internal proposed Outfall 201. Currently, the plant has an On-Site Septic Facility (OSSF) authorization through Bastrop County to dispose of treated domestic effluent using a spray irrigation system; however, for operational flexibility, the plant requests authorization to discharge part or all of the treated domestic effluent to the discharge canal via proposed Outfall 201. Outfall 201 will discharge via external Outfall 001 of the Sim Gideon Power Plant industrial wastewater permit to Lake Bastrop. The plant uses an on-site aerobic treatment system with chlorination as the disinfectant. The plant requests that an upper limit for total residual chlorine is not included in the proposed Outfall 201 because the proposed Outfall 201 will flow into the discharge canal for Outfall 001, which typically discharges over 500 million gallons per day of once-through and auxiliary cooling water that is treated daily with chlorine to control biofouling. Note that Outfall 201 was previously authorized in this TPDES permit for the discharge of treated domestic effluent from approximately 2001 through 2019; and

2) amend the Outfall 401 authorization from "...heat recovery steam generator wash water and boiler cleaning wastewater (includes metal cleaning wastes)..." to "...metal cleaning wastes..." in order to clarify that additional metal cleaning wastewaters that the plant may generate would be authorized to discharge via Outfall 401.

b. Is the facility requesting any **minor amendments** to the permit?

☒ Yes ☐ No

If **yes**, list and discuss the requested changes.

Permittee has added the following information to the permit representation:

1) acknowledgement that Lost Pines 1 may discharge additional low volume waste sources from the Sim Gideon Power Plant and the Winchester Power Plant to the Lost Pines 1 existing Outfall 101.

c. Is the facility requesting any **minor modifications** to the permit?

☐ Yes ☒ No

If **yes**, list and discuss the requested changes.

Click to enter text.

WORKSHEET 1.0
EPA CATEGORICAL EFFLUENT GUIDELINES

This worksheet **is required** for all applications for TPDES permits for discharges of wastewaters subject to EPA categorical effluent limitation guidelines (ELGs).

1. CATEGORICAL INDUSTRIES (Instructions, Pages 50-52)

Is this facility subject to any of the 40 CFR categorical ELGs outlined on page 53 of the instructions?

☒ Yes ☐ No

If **no**, this worksheet is not required. If **yes**, provide the appropriate information in the table below.

40 CFR Effluent Guidelines

Industry	40 CFR Part
Steam Electric Power Generating	423

2. PRODUCTION/PROCESS DATA (Instructions, Page 54)

NOTE: For all TPDES permit applications requesting individual permit coverage for discharges of oil and gas exploration and production wastewater (discharges into or adjacent to water in the state, falling under the Oil and Gas Extraction Effluent Guidelines – 40 CFR Part 435), see Worksheet 12.0, Item 2 instead.

a. **Production Data**

Provide the appropriate data for effluent guidelines with production-based effluent limitations.

Production Data

Subcategory	Actual Quantity/Day	Design Quantity/Day	Units
N/A			

b. **Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing Data (40 CFR Part 414)**

Provide each applicable subpart and the percent of total production. Provide data for metal-bearing and cyanide-bearing wastestreams, as required by *40 CFR Part 414, Appendices A and B.*

Percentages of Total Production

Subcategory	Percent of Total Production	Appendix A and B - Metal	Appendix A – Cyanide
N/A			

c. **Refineries (40 CFR Part 419)**

Provide the applicable subcategory and a brief justification.

N/A

3. PROCESS/NON-PROCESS WASTEWATER FLOWS (Instructions, Page 54)

Provide a breakdown of wastewater flow(s) generated by the facility, including both process and non-process wastewater flow(s). Specify which wastewater flows are to be authorized for discharge under this permit and the disposal practices for wastewater flows, excluding domestic, which are not to be authorized for discharge under this permit.

Wastewater Flows (discharged via permit)

- once-through circulating water (used to cool main condensers)
- auxiliary cooling water (used to cool equipment)
- oil/water separator discharge, heat recovery steam generator blowdown, combustion turbine generator wash water, equipment sump wastewater, lab eye wash and safety shower drain water, wastewaters associated with ammonia storage and maintenance, and other low volume waste sources
- reverse osmosis reject streams and filter media backwash
- heat recovery steam generator cleaning wash water, boiler cleaning wastewater, and other metal cleaning wastes
- domestic wastewater
- stormwater

Other wastewaters disposed of as solid waste using a third-party waste vendor, as needed

4. NEW SOURCE DETERMINATION (Instructions, Page 54)

Provide a list of all wastewater-generating processes subject to EPA categorical ELGs, identify the appropriate guideline Part and Subpart, and provide the date the process/construction commenced.

Wastewater-generating Processes Subject to Effluent Guidelines

Process	EPA Guideline: Part	EPA Guideline: Subpart	Date Process/ Construction Commenced
Once-through cooling water*	40 CFR 423	.15(h)	2001
Low volume wastes	40 CFR 423	.15(c)	2001
Metal cleaning wastes	40 CFR 423	.15(d)	2001
*once-through cooling water is monitored via Outfall 001 of the Sim Gideon TPDES Permit WQ0002052000			

WORKSHEET 4.0
RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 81)

a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

☐ Yes ☒ No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

i. The legal name of the owner of the drinking water supply intake: Click to enter text.

v. The distance and direction from the outfall to the drinking water supply intake: Click to enter text.

b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

☐ Check this box to confirm the above requested information is provided.

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 81)

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3.

a. Width of the receiving water at the outfall: Click to enter text. feet

b. Are there oyster reefs in the vicinity of the discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: Click to enter text.

c. Are there sea grasses within the vicinity of the point of discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: Click to enter text.

3. CLASSIFIED SEGMENT (Instructions, Page 81)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

☐ Yes ☒ No

If **yes**, stop here. It is not necessary to complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Page 82)

a. Name of the immediate receiving waters: Lake Bastrop

b. Check the appropriate description of the immediate receiving waters:

☒ Lake or Pond
- Surface area (acres): 906
- Average depth of the entire water body (feet): 20-25
- Average depth of water body within a 500-foot radius of the discharge point (feet): 15-20

☐ Man-Made Channel or Ditch
☐ Stream or Creek
☐ Freshwater Swamp or Marsh
☐ Tidal Stream, Bayou, or Marsh
☐ Open Bay
☐ Other, specify: Click to enter text.

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c – 4.g below:

c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

☐ Intermittent (dry for at least one week during most years)
☐ Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)
☐ Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

☐ USGS flow records
☐ personal observation
☐ historical observation by adjacent landowner(s)
☐ other, specify: Click to enter text.

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Click to enter text.

e. The receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.).

☐ Yes ☐ No

If **yes**, describe how: Click to enter text.

f. General observations of the water body during normal dry weather conditions: Click to enter text.

Date and time of observation: Click to enter text.

g. The water body was influenced by stormwater runoff during observations.

☐ Yes ☐ No

If **yes**, describe how: Click to enter text.

5. GENERAL CHARACTERISTICS OF WATER BODY (Instructions, Page 82)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

- ☐ oil field activities
- ☐ agricultural runoff
- ☐ upstream discharges
- ☐ urban runoff
- ☐ septic tanks
- ☒ other, specify: None

b. Uses of water body observed or evidence of such uses (check all that apply):

- ☐ livestock watering
- ☒ non-contact recreation
- ☐ domestic water supply
- ☒ contact recreation
- ☒ fishing
- ☒ industrial water supply
- ☐ irrigation withdrawal
- ☐ navigation
- ☒ picnic/park activities
- ☐ other, specify: Click to enter text.

c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

- ☐ **Wilderness:** outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional
- ☐ **Natural Area:** trees or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored
- ☒ **Common Setting:** not offensive, developed but uncluttered; water may be colored or turbid
- ☐ **Offensive:** stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

WORKSHEET 5.0
SEWAGE SLUDGE MANAGEMENT AND DISPOSAL

The following information **is required** for all TPDES permit applications that meet the conditions as outlined in Technical Report 1.0, Item 7.

1. SEWAGE SLUDGE SOLIDS MANAGEMENT PLAN (Instructions, Page 85)

a. Is this a new permit application or an amendment permit application?

☒ Yes ☐ No

b. Does or will the facility discharge in the Lake Houston watershed?

☐ Yes ☒ No

If **yes** to either Item 1.a **or** 1.b, attach a solids management plan.

Attachment: LP1-TECH-6 Solids Management Plan

2. SEWAGE SLUDGE MANAGEMENT AND DISPOSAL (Instructions, Pages 85-86)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

☐ Permitted landfill
☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
☐ Registered land application site, attach Form TCEQ-00565
☐ Processed by the permittee, attach Form TCEQ-00744
☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
☒ Transported to another WWTP
☐ Beneficial land application, attach Form TCEQ-10451
☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment: See below for the name of the TCEQ permitted disposal site.

b. Provide the following information for each disposal site:

Disposal site name: Grandy Ranch Ltd.

TCEQ Permit/Registration Number: WQ0004458000

County where disposal site is located: Bell County

c. Method of sewage sludge transportation: ☒ truck ☐ train ☐ pipe ☐ other: Click to enter text.

TCEQ Hauler Registration Number: S&M Vacuum and Waste, Ltd. (Sludge Registration: 200089)

Sludge is transported as a: ☐ liquid ☒ semi-liquid ☐ semi-solid ☐ solid

d. Purpose of land application: ☐ reclamation ☒ soil conditioning ☐ N/A

e. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment: N/A

3. AUTHORIZATION FOR SEWAGE SLUDGE DISPOSAL (Instructions, Page 86)

a. If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment: N/A

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit**. New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

WORKSHEET 11.0
COOLING WATER SYSTEM INFORMATION

This worksheet **is required** for all TPDES permit applications **that meet the conditions outlined in Technical Report 1.0, Item 12.**

1. COOLING WATER SYSTEM DATA (Instructions, Pages 105-106)

a. Complete the following table with information regarding the cooling water system.

Cooling Water System Data

Total DIF	345 MG per day (LP1)
Total AIF	102,392 MG average annual volume of water withdrawn (LP1) (36 months between Jan 2021 and Dec 2023)
Intake Flow Uses (%)	% of intake flows (LP1)
Contact cooling	0%
Non-contact cooling	99.7%
Process uses	0.3%
Other	0%

b. Attach the following information:

i. A narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).

ii. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.

iii. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).

iv. Design and engineering calculations prepared by a qualified professional and data to support the information provided in above item a.

v. Previous year (a minimum of 12 months) of AIF data.

vi. A narrative description of existing or proposed impingement and entrainment technologies or operation measures and a summary of their performance, including, but not limited to, reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

Attachment: LP-TECH-7: Cooling Water

2. COOLING WATER INTAKE STRUCTURE(S) DATA (Instructions, Page 106)

a. Complete the following table with information regarding each cooling water intake structure (this includes primary and make-up CWIS(s)).

Cooling Water Intake Structure(s) Data

CWIS ID	LP1	River Pump (back up use only)		
DIF	345 MG per day	18.7 MG per day		
AIF	102,392 MG annual average (36 months between January 2021 and December 2023)	0 (36 months between January 2021 and December 2023)		
Intake Flow Uses (%)	% of intake flows	% of intake flows		
Contact cooling	0%	N/A		
Non-contact cooling	99.7%	N/A		
Process uses	0.3%	N/A		
Other	0%	N/A		
Latitude	30° 8' 43.24958"	30° 9' 8.96872"		
Longitude	-97° 16' 19.39401"	-97° 20' 47.74498"		

b. Attach the following information regarding the CWIS(s):

i. A narrative description of the configuration of each CWIS, annual and daily operation, including any seasonal changes, and where it is located in the water body and in the water column.

ii. Engineering calculations for each CWIS.

Attachment: LP-TECH-7: Cooling Water

3. SOURCE WATER PHYSICAL DATA (Instructions, Pages 106-107)

a. Complete the following table with information regarding the CWIS(s) source waterbody (this includes primary and make-up CWIS(s)).

Source Waterbody Data

CWIS ID	001	River Pump		
Source waterbody	Lake Bastrop	Colorado River		
Mean annual flow	Impoundment	2010 cfs (1986-2022)		
Source	LCRA	USGS		

b. Attach the following information regarding the source waterbody.

i. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports this determination of the water body type where each cooling water intake structure is located.

ii. A narrative description of the source waterbody's hydrological and geomorphological features.

iii. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. **NOTE:** The source waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.

iv. A description of the methods used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

Attachment: LP-TECH-7: Cooling Water

4. OPERATIONAL STATUS (Instructions, Page 107)

a. Is this application for a power production or steam generation facility?

☒ Yes ☐ No

If **no**, proceed to Item 4.b. If **yes**, provide the following information as an attachment:

i. Describe the operating status of each individual unit, including age, capacity utilization rate (or equivalent) for the previous five years (a minimum of 60 months), and any seasonal changes in operation.

ii. Describe any extended or unusual outages or other factors which significantly affect current data for flow, impingement, entrainment.

iii. Identify any operating unit with a capacity utilization rate of less than 8 percent averaged over a contiguous period of two years (a minimum of 24 months).

iv. Describe any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes of fuel type.

Attachment: LP-TECH-7: Cooling Water

b. Process Units

i. Is this application for a facility which has process units that use cooling water (other than for power production or steam generation)?

☐ Yes ☒ No

If **no**, proceed to Item 4.c. If **yes**, continue.

ii. Does the facility use or intend to use reductions in flow or changes in operations to meet the requirements of *40 CFR § 125.94(c)*?

☐ Yes ☒ No

If **no**, proceed to Item 4.c. If **yes**, attach descriptions of the following information:

- Individual production processes and product lines
- The operating status, including age of each line and seasonal operation
- Any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors
- Any major upgrades completed within the last 15 years and plans or schedules for decommissioning or replacement of process units or production processes and product lines.

Attachment: Click to enter text.

c. Is this an application for a nuclear power production facility?

☐ Yes ☒ No

If **no**, proceed to Item 4.d. If **yes**, attach a description of completed, approved, or scheduled upgrades and the Nuclear Regulatory Commission relicensing status for each unit at the facility.

Attachment: Click to enter text.

d. Is this an application for a manufacturing facility?

☐ Yes ☒ No

If **no**, proceed to Worksheet 11.1. If **yes**, attach descriptions of current and future production schedules and any plans or schedules for any new units planned within the next five years (a minimum of 60 mos)

Attachment: Click to enter text.

WORKSHEET 11.1
IMPINGEMENT MORTALITY

This worksheet **is required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: LP1-001

1. IMPINGEMENT COMPLIANCE TECHNOLOGY SELECTION (Instructions, Page 108)

Check the box next to the method of compliance for the Impingement Mortality Standard selected by the facility.

- ☒ Closed-cycle recirculating system(CCRS) [*40 CFR § 125.94(c)(1)*]
- ☐ 0.5 ft/s Through-Screen Design Velocity [*40 CFR § 125.94(c)(2)*] – Proceed to Worksheet 11.2
- ☐ 0.5 ft/s Through Screen Actual Velocity [*40 CFR § 125.94(c)(3)*]
- ☐ Existing offshore velocity cap [*40 CFR § 125.94(c)(4)*] – Proceed to Worksheet 11.2
- ☐ Modified traveling screens [*40 CFR § 125.94(c)(5)*]
- ☐ System of technologies [*40 CFR § 125.94(c)(6)*]
- ☐ Impingement mortality performance standard [*40 CFR § 125.94(c)(7)*]
- ☐ De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]
- ☐ Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

If 0.5 ft/s Through-Screen Design Velocity [*40 CFR § 125.94(c)(2)*] or existing offshore velocity cap [*40 CFR § 125.94(c)(4)*] was selected, proceed to Worksheet 11.2. Otherwise, continue to Item 2.

2. IMPINGEMENT COMPLIANCE TECHNOLOGY INFORMATION (Instructions, Pages 108-109)

Complete the following sections based on the selection made for item 1 above.

a. CCRS [*40 CFR § 125.94(c)(1)*]

☒ Check this box to confirm the CWS meets the definition of CCRS located at *40 CFR § 125.91(c)* and provide a response to the following questions.

i. Does the facility use or propose to use a CWIS to replenish water losses to the CWS?

☒ Yes ☐ No

If **no**, proceed to item a.ii. If **yes**, provide the following information as an attachment and continue.

1. CWIS ID
2. 12 months of intake flow data for any CWIS used for make-up intake flows to replenish cooling water losses, excluding intakes for losses due to blowdown, drift, or evaporation.
3. A narrative description of any physical or operational measures taken to minimize make-up withdraws.

Attachment: LP1-TECH-7 Cooling Water

NOTE: Do not complete a separate Worksheet 11.1 for a make-up CWIS.

ii. Does the facility use or propose to use cooling towers?

☐ Yes ☒ No

If **no**, proceed to Worksheet 11.2. If **yes**, provide the following information and proceed to Worksheet 11.2.

1. Average number of COCs prior to blowdown:

Average COCs prior to blowdown

Cooling Tower ID				
COCs				

2. Attach COC monitoring data for each cooling tower from the previous year (a minimum of 12 months)

Attachment: Click to enter text.

3. Maximum number of COCs each cooling tower can accomplish based on design of the system.

Calculated COCs prior to blowdown

Cooling Tower ID				
COCs				

4. Describe conditions that may limit the number of COCs prior to blowdown, if any, including but not limited to permit conditions: Click to enter text.

b. 0.5 ft/s Through Screen Actual Velocity [*40 CFR § 125.94(c)(3)*]

Provide daily intake flow measurement monitoring data from the previous year (a minimum of 12 months) as an attachment and proceed to Worksheet 11.2.

Attachment: Click to enter text.

c. Modified traveling screens [*40 CFR § 125.94(c)(5)*]

Provide the following information as an attachment and proceed to Worksheet 11.2.

i. A description of the modified traveling screens and associated equipment.

ii. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods

iii. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: Click to enter text.

d. System of technologies [*40 CFR § 125.94(c)(6)*] or impingement mortality performance standard [*40 CFR § 125.94(c)(7)]*

Provide the following information as an attachment and proceed to Worksheet 11.2.

i. A description of the system of technologies used or proposed for use by the facility to achieve compliance with the impingement mortality standard.

ii. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods.

iii. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: Click to enter text.

e. De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]

Provide the following information and proceed to Worksheet 11.2.

i. Attach monitoring data from the previous year (a minimum of 12 months) of intake flow measured at a frequency of 1/day on days of operation.

Attachment: Click to enter text.

ii. If the rate of impingement caused by the CWIS is extremely low (at an organism or age-one equivalent count), attach supplemental information to Worksheet 11.0, item 1.b.vi. to support this determination.

Attachment: Click to enter text.

f. Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

Attach monthly utilization data from the previous 2 years (a minimum of 24 months) for each operating unit and proceed to Worksheet 11.2.

Attachment: Click to enter text.

WORKSHEET 11.2
SOURCE WATER BIOLOGICAL DATA

This worksheet **is required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** source waterbody of a CWIS for which a facility has selected an Impingement Mortality Technology Option described at *40 CFR §§ 125.94(c)(1)-(7)*.

Name of source waterbody: Lake Bastrop

1. SPECIES MANAGEMENT (Instructions, Page 110)

a. The facility has obtained an incidental take permit for its cooling water intake structure(s) from the USFWS or the NMFS.

☐ Yes ☒ No

If yes, attach any information submitted in order to obtain that permit, which may be used to supplement the permit application information requirements of paragraph *40 CFR § 125.95(f)*.

Attachment: Click to enter text.

b. Is the facility requesting a waiver from application requirements at *40 CFR § 122.21(r)(4)* in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent?

☒ Yes ☐ No

If **yes**, attach a copy of the most recent managed fisheries report to TPWD, or equivalent.

Attachment: LP1-TECH-8 TPWD Fisheries Management Survey Report

c. There are no federally listed threatened or endangered species or critical habitat designations within the source water body.

☐ True ☒ False (See LP1-TECH-9: Addendum to Source Water Biological Data)

2. SOURCE WATER BIOLOGICAL DATA (Instructions, Pages 110-111)

New Facilities (Phase I, Track I and II)

- Provide responses to all items in this section and stop.

Existing Facilities (Phase II)

- If the answer to **1.b.** above was **no**, provide responses to all items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **true**, do not complete any items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **false**, attach a response for any item in this section that is not contained within the most recent TPWD, or equivalent and proceed to Worksheet 11.3.

Attachment: LP1-TECH-9: Addendum to Source Water Biological Data

a. A list of the data requested at *40 CFR § 122.21(r)(4)(ii)* through *(vi)* that are not available, and efforts made to identify sources of the data.

b. Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.

- all life stages and their relative abundance,
- identification of all species and life stages that would be most susceptible to impingement and entrainment,
- forage base,
- significance to commercial fisheries,
- significance to recreational fisheries,
- primary period of reproduction,
- larval recruitment, and
- period of peak abundance for relevant taxa.

c. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the CWIS(s).

d. Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the CWIS(s).

e. Documentation of any public participation or consultation with federal or state agencies undertaken.

The following is required for existing facilities only. Include the following information with the above listed attachment.

f. Identify any protective measures and stabilization activities that have been implemented and provide a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.

g. A list of fragile species, as defined at *40 CFR § 125.92(m)*, at the facility. The applicant need only identify those species not already identified as fragile at *40 CFR § 125.92(m)*.

NOTE: New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

WORKSHEET 11.3
ENTRAINMENT

This worksheet **is required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: 001

1. APPLICABILITY (Instructions, Page 112)

Is the AIF of the CWIS identified above greater than, or equal to, 125 MGD?

☒ Yes ☐ No

- If **no** or the facility has selected **CCRS** [*40 CFR § 125.94(c)(1)*] for the impingement mortality compliance method, complete Item 2 and stop here.
- If **yes** and the facility is **seeking a waiver** from application requirements in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent, complete item 2 and stop.
- If **yes** and the facility is **not seeking a waiver** from application requirements in accordance *with 40 CFR § 125.95*, complete item 2 and provide any required and completed studies listed in item 3. For any required studies in item 3 that are not complete, provide a detailed explanation for the delay and an anticipated schedule for completion and submittal.

2. EXISTING ENTRAINMENT PERFORMANCE STUDIES (Instructions, Page 112)

Attach any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies.

Attachment: LP1-TECH-10 Existing Entrainment Studies

3. FACILITY ENTRAINMENT PERFORMANCE STUDIES (Instructions, Page 112)

a. Attach an entrainment characterization study, as described at *40 CFR § 122.21(r)(9)*.

Attachment: Click to enter text.

b. Attach a comprehensive feasibility study, as described as *40 CFR § 122.21(r)(10)*.

Attachment: Click to enter text.

c. Attach a benefits valuation study, as described as *40 CFR § 122.21(r)(11)*.

Attachment: Click to enter text.

d. Attach a non-water quality environmental and other impacts study, as described as *40 CFR § 122.21(r)(12)*.

Attachment: Click to enter text.

e. Attach a peer review analysis, as described as *40 CFR § 122.21(r)(13)*.

Attachment: Click to enter text.

TECHNICAL REPORT

ATTACHMENTS

1. LP1-TECH-1 Wastewater Processes
2. LP1-TECH-2 Facility Map
3. LP1-TECH-3 Water Balance
4. LP1-TECH-4 Safety Data Sheets
5. LP1-TECH-5 Off-Site Wastes
6. LP1-TECH-6 Solids Management Plan
7. LP1-TECH-7 Cooling Water
8. LP1-TECH-8 TPWD Fisheries Management Survey Report
9. LP1-TECH-9 Addendum to Source Water Biological Data
10. LP1-TECH-10 Existing Entrainment Studies
11. LP1-TECH-11 Pump Curves

Attachment LP1-TECH-1
Wastewater Processes

The Lost Pines 1 Power Plant is a combined-cycle electric generation facility consisting of two combustion turbine generators, two unfired Heat Recovery Steam Generators (HRSG), one condensing, reheat steam turbine generator, a surface condenser, and necessary ancillary equipment. Heat rejection for the steam power cycle is provided through once-through cooling from Lake Bastrop. The following subsections briefly describe key plant components.

Combustion Turbines

The facility is equipped with two natural gas-fired combustion turbines. Each combustion turbine vents hot exhaust gas through transition pieces and expands through power turbine stages generating electricity. Before venting to the atmosphere, the exhaust is routed through a Selective Catalytic Reduction (SCR) system, which includes anhydrous ammonia injection for emissions control. The remaining thermal energy in the exhaust is captured in the HRSG to produce steam.

Heat Recovery Steam Generators (HRSG) and Steam Turbine

The hot turbine exhaust gas is ducted from each combustion turbine into its respective three-pressure level, natural circulation HRSG. The steam generated in the two HRSGs from the energy contained in the exhaust gas is routed to a single condensing, reheat steam turbine and generator to generate electricity.

Condenser

Lake water is pumped from Lake Bastrop from the Lost Pines 1 water intake structure located adjacent to the Sim Gideon Power Plant water intake structure. Groundwater wells in the vicinity of the plant are the primary source of make-up water to Lake Bastrop. The lake water is treated with chemicals as necessary to reduce scale deposits and algae, used for cooling of the condenser and auxiliary equipment, and returned to the reservoir via Sim Gideon Outfall 001. An inert grit (including but not limited to wood flour, sawdust, seeds or floorsweep grit) is injected on an intermittent basis into the cooling water to plug small through-wall holes in condenser tubes. Traveling screens are used to prevent debris from clogging the condensers. A split water box surface condenser is used to condense the steam turbine exhaust.

Water Treatment Equipment

A Reverse Osmosis (RO) system with mixed-bed demineralizers is used to produce steam cycle make-up water. Water for the RO system comes from nearby groundwater wells or Lake Bastrop. The water is routed through a multi-media filter prior to routing to the RO and demineralizers. Chemicals are used in the RO system to improve performance and to clean the membranes. Regeneration of the demineralizers is performed off-site.

Fire Protection System

The facility has two fire pumps; one electric and the other diesel. They are located at the lake intake structure to provide fire protection for the facility. Operation of the diesel fire pump is primarily for maintenance purposes. Electric motor driven jockey pumps maintain fire loop pressure during normal operation.

Ancillary Equipment

The Lost Pines 1 Power Plant is equipped with ancillary equipment necessary for a power generating facility (air compressors, pumps, storage tanks, etc.).

Wastewater

The major wastewater component of the power plant is the once-through cooling water for the main condensers and cooling water for auxiliary equipment. After passing through the condenser and equipment, cooling water is returned to the lake via a concrete-line discharge canal that is shared with the adjacent Sim Gideon Power Plant. The Sim Gideon Power Plant is authorized to discharge the Lost Pines 1 effluent from Outfall 001 under TPDES Permit No. WQ0002052000. The Sim Gideon Power Plant Outfall 001 monitoring point is located at the northern end of the discharge canal, approximately one mile north of the Lost Pines 1 Power Plant.

Other wastewaters include process waters that discharge from internal Outfalls. The following sections describe each outfall.

Outfall 101: Low-Volume Wastewater

This outfall consists of intermittent flows from lab eye wash and safety shower drains, boiler blowdown (near continuous), combustion turbine generator wash water, wastewaters associated with ammonia storage and maintenance, intermittent flows from equipment drains routed through the Lost Pines 1 oil/water separator, and other low volume wastes. Part of the Sim Gideon Power Plant equipment drains can be routed to the Lost Pines 1 Power Plant oil/water separator. The Lost Pines 1 oil/water separator is also authorized to receive oily wastewater from the Winchester Power Park. All of these streams go from the oil/water separator to an equipment sump that is pumped to a detention basin. In addition, stormwater runoff from the Lost Pines 1 Power Plant site flows by gravity to the detention basin. Monitoring of Outfall 101 is at the discharge from the detention basin before draining into the discharge canal.

As part of this major amendment application, LP1 is updating the description of off-site wastes to include low volume wastes from the Sim Gideon Power Plant and Winchester Power Park. These wastewaters are described in further detail in LP1-TECH-5 Off-Site Wastes.

Outfall 201 (proposed): Domestic Wastewater

Sanitary domestic wastewater, toilets, showers, and wash water from the Lost Pines 1 facility is treated in a package biological wastewater treatment plant that in the past was authorized to discharge to Outfall 201. However, since 2015, the discharge from the treatment plant has been rerouted for disposal using spray irrigation, which is permitted through Bastrop County as an On-Site Septic Facility (Permit No. 15-355), and in 2019, Outfall 201 was removed from the permit. However, this TPDES renewal and amendment is requesting the addition of internal Outfall 201 for operational flexibility to discharge part or all of the treated domestic wastewater discharge that is currently permitted through Bastrop County.

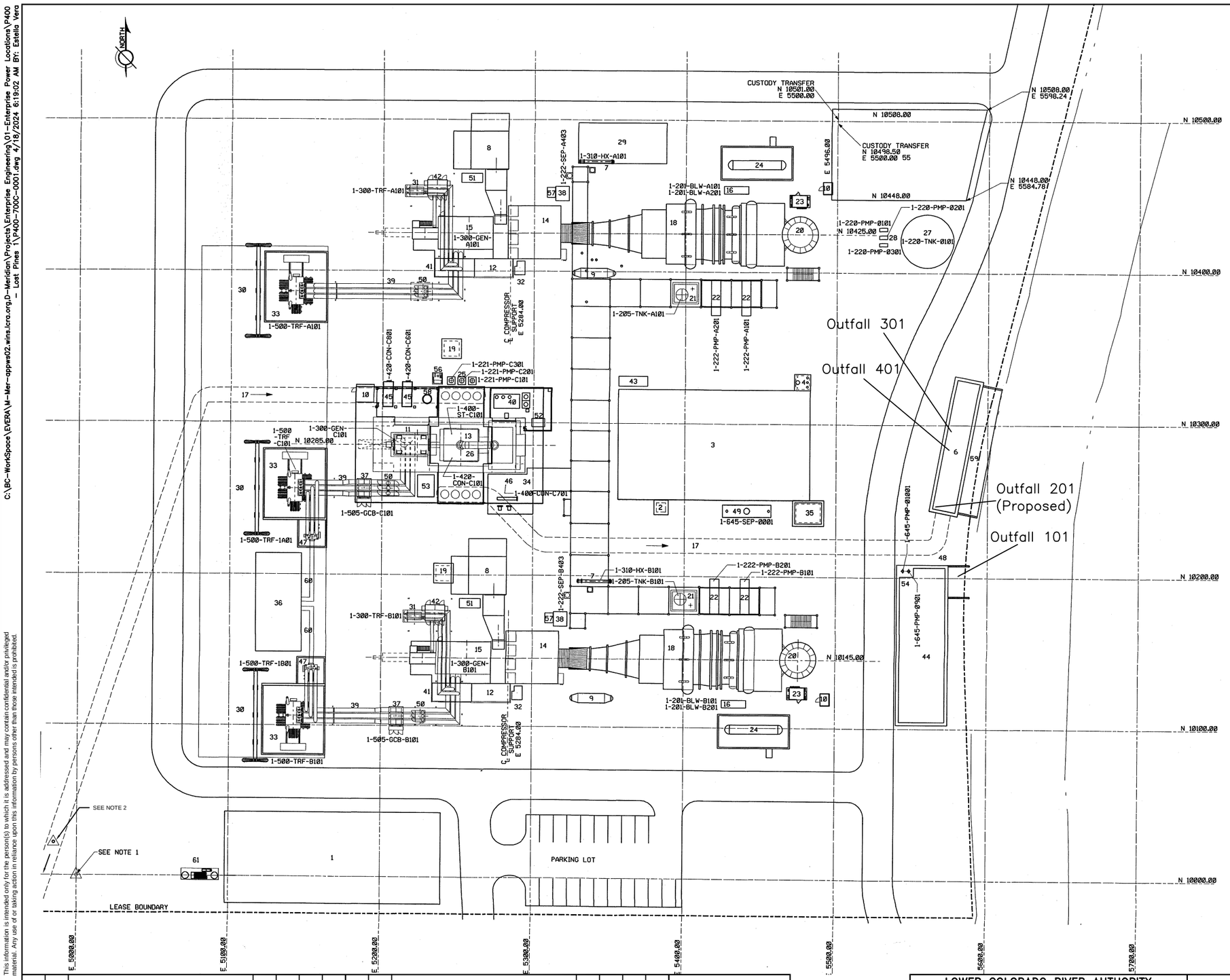
Outfall 301: Low-Volume Wastewater

This outfall consists of discharges associated with the RO system, which is a water treatment process for the boiler feed water. The RO system provides boiler feed water to both the Lost Pines 1 Power Plant and the adjacent Sim Gideon Power Plant. The RO system discharge includes intermittent backwash of the multi-media filters and the RO reject water. The backwash and RO reject streams

may include small amounts of chemicals added to enhance solids formation (coagulants) and to protect the RO membranes. Other low volume wastes may be discharged via this outfall.

Outfall 401: Metal Cleaning Wastewater

Outfall 401 is used to discharge wastewater generated at the plant from boiler tube cleaning and de-scaling events. As part of this major amendment application, LCRA is requesting clarification that other types of metal cleaning waste generated at the plant are authorized for discharge via Outfall 401. Boiler cleaning activities are performed on an intermittent basis to maintain effective heat transfer and steam generation during the boiler operation, as well as safe operation of the boilers. A cleaning solution is circulated in the boiler, generally heated to below boiling, to reduce the scale into suspension. Provided the wastewater meets the permitted limits of Outfall 401, it may be discharged via Outfall 401.



50 25 0 25 50

LEGEND

1. ADMINISTRATION/CONTROL/WAREHOUSE BUILDING.
2. COMBUSTION TURBINE DRAINS SUMP
3. WATER TREATMENT/SWITCHGEAR BUILDING
4. RAW WATER SUMP
5. STEAM TURBINE EXHAUST HOOD COOLING SKID
6. OUTFALL STRUCTURE
7. FUEL GAS HEATER
8. COMBUSTION TURBINE AIR INLET FILTER
9. KETTLE BOILER
10. FIRE PROTECTION VALVE ENCLOSURE
11. ST GENERATOR
12. CT MECHANICAL PACKAGE
13. STEAM TURBINE
14. COMBUSTION TURBINE
15. CT GENERATOR
16. AMMONIA INJECTION SKID
17. CIRCULATING WATER PIPING
18. HEAT RECOVERY STEAM GENERATOR
19. ELECTRICAL MANHOLE
20. HRSG STACK
21. HRSG BLOWDOWN TANK
22. BOILER FEED PUMP
23. CEMS
24. AMMONIA STORAGE TANK
25. CONDENSATE PUMPS
26. CONDENSER
27. DEMINERALIZED WATER STORAGE TANK
28. DEMINERALIZED WATER TRANSFER PUMPS
29. PLANT FUEL GAS CONTROL STATION
30. DEAD-END STRUCTURE
31. EXCITATION TRANSFORMER
32. HYDRAULIC SKID
33. GENERATOR STEP-UP TRANSFORMER
34. GLAND STEAM SKID
35. EQUIPMENT DRAIN SUMP
36. 4160 V. POWERHOUSE
37. GENERATOR BREAKER
38. FUEL GAS MAIN FILTER/SEPARATOR
39. ISO-PHASE BUS DUCT
40. STG LUBE OIL & EQUIPMENT SKID
41. ELECTRICAL EQUIPMENT PACKAGE
42. GENERATOR EXCITATION SKID
43. COMPRESSOR WATER WASH SKID
44. STORM WATER RETENTION BASIN
45. STEAM JET AIR EJECTORS & VACUUM PUMPS
46. GLAND STEAM CONDENSER
47. AUXILIARY TRANSFORMER
48. OVERFLOW DISCHARGE
49. OIL/WATER SEPARATOR
50. GENERATOR VT AND SURGE CUBICLE
51. COMBUSTION TURBINE INLET FOGGING SKID
52. EHC EQUIPMENT SKID
53. SEAL OIL EQUIPMENT SKID
54. RETENTION POND PUMPS
55. GAS SUPPLIERS CONTROL STATION
56. WATER BOX PRIMING SKID
57. PILOT FUEL GAS FILTER SEPARATOR
58. DEAERATOR
59. SPILLWAY
60. NON-SEG BUS
61. SEWER TREATMENT SYSTEM

GENERAL NOTES

1. PLANT COORDINATES N 10,000.00, E 5,000.00 CORRESPONDS TO SITE COORDINATES N 10,030,400.00, E 3,264,200.00.
2. LOST PINES 1 CIRCULATING WATER INTAKES ARE LOCATED TO THE SOUTHWEST OF LOST PINES 1 PLANT AND ADJACENT TO THE SIM GIDEON PLANT WATER INTAKES.

Rev.	Date	Revision	By	Chkd.	Appd.	Appd.
2						
1	01/31 2022	FOR TPDES AMENDMENT/RENEWAL	EV			
0	1/16 2014	FOR DRAFT PER DCN #LPDC14-001	CR			

Rev.	Date	Revision	By	Chkd.	Appd.	Appd.
3						
4						
5						

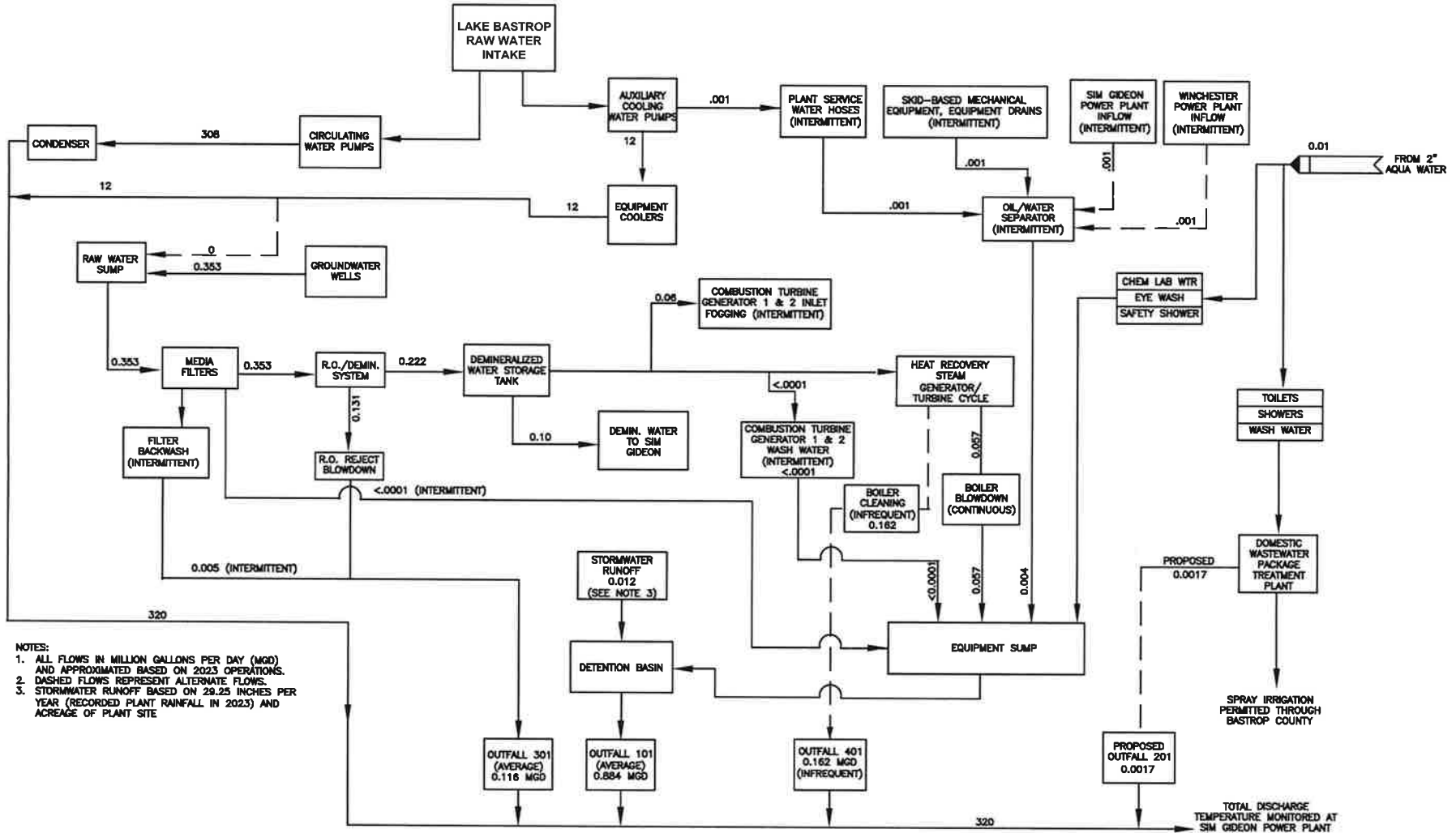
DRAWN BY: C. RAMIREZ
CHKD. BY:
APPD. BY:
APPD. BY:

LOWER COLORADO RIVER AUTHORITY
AUSTIN, TEXAS

LOCATION
LOST PINES 1 POWER PLANT

TITLE
LP1-TECH 2
FACILITY MAP

DATE 1/16/2014
SCALE NONE
DWG. NO. P400-700C-0001



NOTES:
1. ALL FLOWS IN MILLION GALLONS PER DAY (MGD) AND APPROXIMATED BASED ON 2023 OPERATIONS.
2. DASHED FLOWS REPRESENT ALTERNATE FLOWS.
3. STORMWATER RUNOFF BASED ON 29.25 INCHES PER YEAR (RECORDED PLANT RAINFALL IN 2023) AND ACREAGE OF PLANT SITE

Rev.	Date	Revision	By	Chkd.	Appd.	Appd.	Rev.	Date	Revision
2	4/23/2024	FOR LP1 PERMIT RENEWAL/AMENDMENT	JP						
1	4/26/2019	FOR LP1 WASTEWATER PERMIT	JP						
0	1/16/2014	FOR DRAFT PER DCN #LPDC14--001	CR						

DRAWN BY: C.RAMIREZ
CHKD. BY:
APPD. BY:
APPD. BY:

LOWER COLORADO RIVER AUTHORITY
AUSTIN, TEXAS

LOCATION
LOST PINES 1 POWER PLANT

TITLE
LP-TECH 3
WATER BALANCE SCHEMATIC

DATE
1/16/2014

SCALE
NONE

DWG. NO.
P400-700C-0002

Attachment LP1-TECH-4-Safety Data Sheets

Number	Product Name	Product Use	Product Classification	Chemical Composition	CAS Registry Number	Weight Percent	Product/ Active Ingredient Half-Life	Plant Quantity Uses[1]	Product Use Frequency	Concentration of Product [1,2,3] in Outfall 001 in Waste Stream	Ecological Information (Species/Exposure/Test Type/Value/Test Descriptor)	Outfall	Waste Stream
SIM GIDEON AND LOST PINES 1 CHEMICAL INFORMATION [4] (Note that both facilities discharge cooling water into the discharge canal authorized by Sim Gideon Power Plant's permit WQ0002052000)													
1	**Commercial Bleach (12.5%) (alternative to Purate)**	Source of chlorine	From Safety Data Sheet (SDS): This product consists of inorganic compounds which are not biodegradable. This product is not bioaccumulating.	Sodium Hypochlorite Sodium Chloride Sodium Hydroxide	7681-52-9 7647-14-5 1310-73-2	12.5-15.6% 9-10% 0.1-5%	No data is available on MSDS.	up to 1.0 ppm per hour	up to 2 hr/day for 7 days a week.	Concentration not calculated	TOXICITY TO AQUATIC ORGANISMS: Pimephales promelas/96 hrs/LC50/0.08 mg/L; Sodium Hypochlorite Freshwater Fish/96 hrs/LC50/1,100 mg/L; Sodium chloride Poecilia reticulata/96 hrs/LC50/196 mg/L; Sodium hydroxide Daphnia magna/48 hrs/EC50/0.032 mg/L; Sodium Hypochlorite Daphnia magna/48 hrs/EC50/3,310 mg/L; Sodium chloride Ceriodaphnia dubia/48 hrs/EC50/40.38 mg/L; Sodium hydroxide	001 (SGP and LP1)	Circulating and Aux Cooling Water
2	**ChemTreat CL41 Sodium Bromide (40%) (used with bleach)**	Cooling Water Biocide	From SDS: Not determined	40% Sodium bromide	7647-15-6	40%	No data is available on MSDS.	up to 0.46 ppm per hour of bromide	up to 2 hr/day for 7 days a week.	Concentration not calculated	TOXCICITY TO AQUATIC ORGANISMS: Fathead Minnow/ 96 hrs/ LC50/ >10,000 mg/L/ Active Ingredient Sheephead Minnow/ 96 hrs/ LC50/ >10,000 mg/l /Active Ingredient Ceriodaphnia dubia/ 48 hrs/ LC50/ 7650 mg/l /Active Ingredient Mysid Shrimp/ 48 hrs/ LC50/ 0.17 mg/l/ >10,000 mg/l /Active Ingredient	001 (SGP and LP1)	Circulating and Aux Cooling Water
3	**ChemTreat CL4635 - active ingredient is PAA**	Scale and Corrosion Inhibitor	From SDS: Not determined	From SDS: Components are either non hazardous or in concentration of less than 1%	From SDS: N/A	N/A	No data is available on SDS.	up to 80 ml per minute	1-2 hrs/day	up to 188 ppb (product); 94 pb of polyacrylic acid	TOXICITY TO AQUATIC ORGANISMS: Ceriodaphnia dubia/ 48 hrs/ LC50/ 1005 mg/L Fathead minnow/ 96 hrs/ LC50/ 6325 mg/L	001 (SGP and LP1)	Circulating Water
4	**ChemTreat BL1260 Carbohydrazide[5]**	Chemical Reducing Agent used as Hydrazine Alternative	From SDS: Not determined	Carbohydrazide	497-18-7	5 - 10%	No data is available on MSDS.	21 ppb product per 1 ppb of oxygen present	Currently not in use. If used, it would be used continuously when on-line	Varies	TOXICITY TO AQUATIC ORGANISMS: Ceriodaphnia dubia/ 48 hrs/ LC50/ 158.38 mg/L Fathead minnow/ 96 hrs/ LC50/ 159.32 mg/L	002 (SGP) and 101 (LP1)	Boiler Blowdown
5	**ChemTreat BL1501 - Ammonium hydroxide**	Boiler Water Treatment/Metal Corrosion Protection	From SDS: Not determined	Ammonium Hydroxide	1336-21-6	3-7%	No data is available on MSDS.	Dependent upon pH	Continuously when on-line	Varies	TOXICITY TO AQUATIC ORGANISMS: Ceriodaphnia dubia/ 48 hrs/ LC50/ 131 mg/L; as ammonia Fathead minnow/ 96 hrs/ LC50/ 8.2 mg/L; as ammonia	002 (SGP)	Boiler Blowdown
6	**ChemTreat BL1547 Cyclohexylamine**	Steam and Condensate Line Treatment/pH Control of Boilers	From SDS: Not determined	Cyclohexylamine	108-91-8	30-60%	No data is available on MSDS.	Dependent on pH/varies with CO2 content	Continuously when on-line	Varies	TOXICITY TO AQUATIC ORGANISMS: Rainbow Trout/ 96 hrs / LC50/ 180 mg/l Daphnia magna/24 hrs/ EC50/ 98 mg/l	002 (SGP) and 101 (LP1)	Low Volume Waste
7	**ChemTreat BL1794**	Boiler Water Treatment	From SDS: Not determined	Sodium phosphate, tribasic	7601-54-9	1.0-5.0%	No data is available on MSDS.	Dependent upon pH	Continuously when on-line	Varies	TOXICITY TO AQUATIC ORGANISMS: Daphnia magna/ 50 hrs/ EC50/ 2158 mg/l Bluegill Sunfish/ 96 hrs/ LC50/ 2682 mg/L Rainbow Trout/ 96 hrs / LC50/ 1463 mg/l Ceriodaphnia dubia/ 48 hrs/ LC50/ >10,000 mg/L Fathead minnow/ 96 hrs/ LC50/ >10,000 mg/L	002 (SGP) and 101 (LP1)	Boiler Blowdown
8	**Anodamine**	Metal Corrosion Protection	From SDS: Material is considered non-hazardous to the aquatic environment.	Proprietary non-toxic mixture of surface active polyamines	Typical CAS components	Proprietary Non-Toxic Components	No data is available on MSDS.	0.8-1.0 ppm	On-going Routine	≤ 0.4ppb	TOXICITY TO AQUATIC ORGANISMS: Pimephales Promelas/ 96 hrs / LC50/ >100,000 / Similar product; Daphnia magna/ 48 hrs/ EC50/ >100,000/ Similar product;	002 (SGP)	Boiler Blowdown
9	**Kingscote Bright Dyes - Product 106001**	Water tracing and leak detection dye	From Technical Data Bulletin: Based on biochemical oxygen demand (BOD) studies, the dye is biodegradable with 65% of the available oxygen consumed in 7 days. From SDS-106001-Bioaccumulation Not determined	(Available chlorine: 68-72% Inert ingredients 28 - 32% (includes 5.5 - 8.5% water)	No data is available on MSDS.	No data is available on MSDS.	No data is available on MSDS.	~0.56 liters per 115,000 gallons	As needed.	<1 ppb	TOXCICITY AQUATIC TO ORGANISMS: no data available	002 (SGP) and 101 (LP1)	Low Volume Waste and Circulating Water
10	**Green Sweet No-Grit Sweping Cmpound [6]**	Condenser Tube Leak Plugging	From SDS: Not regulated.	Glycerine Basic Green Dye Sawdust	Glycerin CAS# 56-81-5 Basic Green Dye CAS # 1330-38-7	No data is available on MSDS.	No data is available on MSDS.	Dependent on condenser performance.	As needed.	Varies	From SDS: Information "non-mandatory"	001 (SGP and LP1), 201 (SGP), and 101 (LP1)	Low Volume Waste and Circulating Water
11	**STM-5100**	Metal Corrosion Protection	From SDS: No data available.	From SDS: No hazardous ingredients	N/A	N/A	No data is available on MSDS.	0.8-1.0 ppm	On-going Routine (In Trial)	≤ 0.4ppb	TOXICITY TO AQUATIC ORGANISMS: Ceriodaphnia dubia/ 48-hr/ LC50/ 381 mg/L Pimephales promelas/ 96-hr/ LC50/ 277 mg/L	002 (SGP) and 101 (LP1)	Boiler Blowdown

Acronyms:

CAS - Chemical Abstracts Service
DOT - Department of Transportation
EC50 - Half Maximal Effective Concentration
CFR - Code of Federal Regulations
hr - Hour
HRSG - Heat Recovery Steam Generator
lbs/MG - Pounds Per Million Gallon
lbs/yr - Pounds Per Year
LC50 - The effluent concentration which is lethal to 50 percent of the test organisms in the time period prescribed by the test
ug/L - Micrograms Per Liter
mg/L - Milligrams Per Liter
MGD - Million Gallons Per Day
NOx - Nitrogen Oxide
OSHA - Occupational Safety and Health Administration
ppm - Parts Per Million

Notes:

1. Quantity is either based on actual use or estimated use
2. This spreadsheet based on SGP at 409,000 and LP1 at 239,000; When both SGP and LP1 operating at maximum, flow
3. Concentration is estimated.
4. Per permit instructions, chemicals used in boilers and cooling water are included. Other chemicals including chemicals used in the reverse osmosis system are not included.
5. Not being used. May use in future.
6. This chemical is used as an alternative to sawdust or other product for plugging condensor tube leaks.

LC50 - The effluent concentration which is lethal to 50 percent of the tes

Prepared by Julie Podbielski with information from Donna Lee (LCRA)

Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier: **DIXICHLOR MAX**
Synonyms: Bleach, Sodium Hypochlorite, Sodium Hypochlorite 12.5%
Intended use: Swimming pool chlorinator, Hard surface cleaner, Water treatment chemical, Biocides
Uses Advised Against: None identified. This is a pesticide product, do not use in a pesticide application that is not included on the label.

Company Identification
DPC Industries, Inc.
DPC Enterprises, LP
DXI Industries, Inc.
DX Terminals
PO Box 24600
Houston , TX 77229-4600

Emergency
CHEMTREC (USA) (800) 424-9300
24 hour Emergency Telephone No. (281) 457-4888
www.dxgroup.com

2. Hazard identification of the product

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation Serious eye damage/eye irritation Specific target organ toxicity, single exposure	Category 1 Category 1 Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard Hazardous to the aquatic environment, long-term hazard	Category 1 Category 2

Label elements
Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Signal Word	**Danger**
Hazard Statements	Harmful in contact with skin. Causes severe skin burns and eye damage. Causes serious eye damage. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects. May be corrosive to metals
Precautionary Statements	
Prevention	Do not breathe mist / vapors / spray. Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves / eye protection / face protection. Use in well ventilated area.
Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Remove / Take off immediately all contaminated clothing. Wash with plenty of soap and water. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor / physician if you feel unwell. IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. Immediately call a POISON CENTER or doctor / physician. Wash contaminated clothing before reuse. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight.
Disposal	Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

Synonyms: Bleach, Sodium Hypochlorite, Sodium Hypochlorite 12.5%

Ingredient	CAS Number	Percent (%)	NOTES
Sodium hypochlorite.	7681-52-9	12.5 - 15.6	Substance classified with a health or environmental hazard.
Sodium chloride	7647-14-5	9 - 10	Substance classified with a health or environmental hazard.
Sodium hydroxide	1310-73-2	0.1 - 5	Substance classified with a health or environmental hazard. Substance with a workplace exposure limit.

4. First Aid Measures

General	Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Inhalation	Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.
Eyes	Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart. Get medical attention. Remove contact lenses if present and easy to do - continue rinsing.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion	If accidentally swallowed obtain immediate medical attention. Rinse mouth. Keep at rest. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content does not get into lungs.
Most important symptoms and effects, both acute and delayed	
Overview	Corrosive effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Recommended Extinguishing media	Alcohol resistant foam, CO^2, dry chemical powder, water spray. Do not use water jet.
Special hazards arising from the substance or mixture	Hydrogen chloride and chlorine. Chlorine gas rate of decomposition increases with the concentration with temperatures above 85 °F (30 °C). Do not breathe mist / vapors / spray.
Advice for fire-fighters	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.). Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. **ERG Guide No.** 154

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Local authorities should be contacted if significant spill cannot be contained.
Environmental precautions	Do not allow spills to enter drains or watercourses.
Methods and material for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS.

7. Handling and storage

Precautions for safe handling	Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Chemical attack increases with solution strength. Use with adequate ventilation. Observe good industrial hygiene practices. Do not apply heat or direct sunlight. Temperature and product concentration affect product quality and decomposition rates.
Conditions for safe storage, including any incompatibilities	Handle containers carefully to prevent damage and spillage. Keep container tightly closed. Store in a cool and well-ventilated place. Store in a corrosive resistant container. Consult container manufacturer for additional guidance. Store away from and do not mix with incompatible materials such as acids, ammonia, urea, oxidizers, organics and metals such as nickel, copper, tin, aluminum and iron.

8. Exposure controls and personal protection

Exposure Control Parameters

CAS No.	Ingestion	Source	Value
1310-73-2	Sodium hydroxide	OSHA	TWA 2 mg/m3
		ACGIH	Ceiling: 2 mg/m3
		NIOSH	C 2 mg/m3
7647-14-5	Sodium chloride	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
7681-52-9	Sodium hypochlorite.	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit

Individual protection measures, such as personal protective equipment

Respiratory	Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.
Eyes	Wear face shield with safety glasses with side shields and/or safety goggles.
Skin	Chemical resistant clothing such as coveralls/apron boots should be worn. Chemical Impervious gloves.
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn. Eye wash and safety shower must be available when handling this product
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

9. Physical and chemical properties

Appearance	Clear, pale yellow, or greenish Liquid
Odor	Pungent, chlorine odor
Odor threshold	0.9 mg/m^3
pH	12 - 13
Melting point / freezing point	-3 °F (-19.4 °C)
Initial boiling point and boiling range	Decomposes above 230 °F (110 °C)
Flash Point	Nonflammable
Evaporation rate (Ether = 1)	Not Established
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (mmHg)	17.5 (@ 20° C)
Vapor Density	Not Established
Specific Gravity	1.20 - 1.40
Solubility in Water	Complete
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature (°C)	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured
Other information	No other relevant information.

10. Stability and reactivity

Reactivity	Hazardous Polymerization will not occur.
Chemical stability	Stable under normal circumstances.
Possibility of hazardous reactions	No data available.
Conditions to avoid	Contact with incompatible materials. Acid contact will produce chlorine gas.
Incompatible materials	Any acidic material, ammonia, urea, oxidizers, organics and metals such as nickel, copper, tin, aluminum and iron.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Sodium hypochlorite (7681-52-9)	5,000.00, Rat - Category: 5	10,000.00, Rabbit - Category: NA	10.50, Rat - Category: 4	No data available	No data available
Sodium chloride (7647-14-5)	1,350.00, Rabbit - Category: 4	100.00, Rat - Category: 2	40.00, Mouse - Category: NA	10,500.00, Rat - Category: NA	No data available
Sodium hydroxide (1310-73-2)	6,600.00, Mouse - Category: NA	1,350.00, Rabbit - Category: 4	600.00, Mouse - Category: NA	No data available	No data available

11. Toxicological information

Acute toxicity (cont.)

Item	Hazard
Acute Toxicity (mouth)	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Acute Toxicity (skin)	Harmful in contact with skin.
Acute Toxicity (inhalation)	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Eye damage/irritation	Causes serious eye damage.
Sensitization (respiratory)	No data available.
Sensitization (skin)	No data available.
Germ toxicity	No data available.
Carcinogenicity	Not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.
Reproductive Toxicity	No data available.
Specific target organ systemic toxicity (single exposure)	May cause respiratory irritation.
Specific target organ systemic Toxicity (repeated exposure)	Not Applicable.
Aspiration hazard	Not classified; however droplets of product may be aspirated into lungs, through ingestion or vomiting and may cause serious chemical pneumonia.

12. Ecological information

Toxicity: Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sodium hypochlorite (7681-52-9)	0.08, Pimephales promelas	0.032, Daphnia magna	0.40 (72 hr), Dunaliella primolecta
Sodium chloride (7647-14-5)	1,100.00, Freshwater Fish	3,310.00, Daphnia magna	Not Available
Sodium hydroxide (1310-73-2)	196.00, Poecilia reticulata	40.38, Ceriodaphnia dubia	Not Available

Persistence and degradability:	There is no data available on the preparation itself.
Bioaccumulative potential:	Not Measured
Mobility in soil:	No data available.
Results of PBT and vPvB assessment:	This product contains no PBT/vPvB chemicals.
Other adverse effects:	No other effects are expected.

13. Disposal considerations

Waste treatment methods:	Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. Using information provided in this data sheet, advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.
Waste from material:	The waste determination should be made in discussion between the user and the waste disposal company**.**
Container Management:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Safety Data Sheet

14. Transport information

UN number:	UN1791
UN proper shipping name:	Hypochlorite solutions
Transport hazard class(es)	
DOT (Domestic Surface Transportation)	
DOT Proper Shipping Name:	Hypochlorite solutions
DOT Hazard Class: **DOT Label:**	8 8
UN / NA Number:	UN1791
DOT Packing Group:	III
CERCLA/DOT RQ:	100 lbs.
Environmental hazards:	IMDG Marine Pollutant: Yes (Sodium hypochlorite)
Special precautions for user:	Not Applicable

15. Regulatory information

Regulatory Overview:	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory.	
WHMIS Classification	D2B E	
US EPA Tier II Hazards:	**Fire:**	No
	Sudden Release of Pressure:	No
	Reactive:	No
	Immediate (Acute):	Yes
	Delayed (Chronic):	No
SARA 302 Extremely Hazardous Substance:		No
SARA 311/312 Chemicals and RQs (lbs) (>0.1%) :		100
SARA 313 (TRI):		No
CAA Section 112 Hazardous Air Pollutant:		No
CAA Section 112R Risk Management Plan:		No
State Regulations	**N.J. RTK Substances (>1%) :**	Listed
	Penn RTK Substances (>1%) :	Listed
	California Prop 65:	Not Listed

16. Other information:

EPA Registration Number: 813-15

NSF Maximum Use Level (STD 60): Check BOL for facility Data. (37 to 84 mg/L)

Revision Information: 5/4/2017 **–** Section 3: Revised EPA registration.

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

THE USER IS CAUTIONED TO PERFORM HIS OWN HAZARD EVALUATION AND TO RELY ON HIS OWN DETERMINATIONS.

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	Chemical Treatment CL41
Product Use:	Cooling Water Microbiocide
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of SDS:	February 7, 2019
Revision Date:	February 7, 2019
Revision Number:	19020701AN

Section 2. Hazard(s) Identification

Signal Word: **None**

GHS Classification(s): Non−Hazardous Substance

Hazard Statement(s): Non−Hazardous Substance

Precautionary Statement(s):

Prevention: P264 Wash thoroughly after handling.

Response: P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P314 Get medical advice/attention if you feel unwell.

Storage: None.

Disposal: None.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Sodium bromide	7647−15−6	40

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation: Call a POISON CENTER or doctor/physician if you feel unwell.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin: Call a poison center or doctor/physician if you feel unwell.

Ingestion: Rinse mouth. Call a poison center or doctor/physician if you feel unwell.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: Have the product container, label or MSDS with you when calling a poison control center or doctor, or when going for treatment.

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: None known.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Do not discharge effluent containing this product into lakes, ponds, streams, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: None.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.
Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Sodium bromide	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full−face shield. Maintain eyewash fountain in work area.

Skin: Wear appropriate chemical resistant gloves.

Respiratory: Under normal use conditions, this product does not create airborne exposures above the OSHA PEL for listed constituents.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	1.432 @ 20°C
pH:	7.5 @ 20°C, 100.0%
Freezing Point:	<−11°F
Flash Point:	N/D
Odor:	Odorless
Melting Point:	N/D
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	N/D
Evaporation Rate:	N/A
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	11.94 LB/GA
Vapor Pressure:	N/D
% VOC:	0
Odor Threshold	N/D
n−octanol Partition Coefficient	N/D

Decomposition Temperature N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong acids, Strong oxidizers.

Hazardous Decomposition Products: Bromine.

Possibility of Hazardous Reactions: None known.

Reactivity: N/D

Conditions To Avoid: N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Sodium bromide	Oral	LD50	3500 MG/KG	Rat
	Dermal	LD50	2000 MG/KG	Rabbit
Chemical Treatment CL41	Oral	LD50	>5000 MG/KG	Rat
	Dermal	LD50	>2000 MG/KG	Rabbit

Carcinogenicity Category

Component	Source	Code	Brief Description
Sodium bromide	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	7650 mg/l
Fathead Minnow	96h	LC50	>10000 mg/l
Mysid Shrimp	48h	LC50	>10000 mg/l
Sheepshead Minnow	96h	LC50	>10000 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: Based on active ingredient

Section 13. Disposal Considerations

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
CONTAINER DISPOSAL: Non−refillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by procedures approved by state and local authorities.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ANTT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	No
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Sodium bromide	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Sodium bromide	None.

Compliance Information

NSF: N/A

Food Regulations: N/A

KOSHER: This product is certified by the Orthodox Union as Kosher for Passover and year−round use.
Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX; Fontana, CA.

Halal: This product has not been evaluated for Halal approval.

FIFRA: Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), EPA Registration Number: 15300−26.

Other: PMRA biocide registration NO. 30146.

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	0
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: February 7, 2019

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat CL4635
Product Use:	Scale and Corrosion Inhibitor
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of SDS:	February 7, 2019
Revision Date:	February 7, 2019
Revision Number:	19020701AN

Section 2. Hazard(s) Identification

Signal Word: **None**

GHS Classification(s): Non−Hazardous Substance

Hazard Statement(s): Non−Hazardous Substance

Precautionary Statement(s): No significant health risks are expected from exposures under normal conditions of use.

Prevention: None.

Response: None.

Storage: None.

Disposal: None.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Components not listed are either non hazardous or in concentration of less than 1%	N/A	N/A

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation: Call a POISON CENTER or doctor/physician if you feel unwell.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin: Call a poison center or doctor/physician if you feel unwell.

Ingestion: Rinse mouth. Call a poison center or doctor/physician if you feel unwell.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: N/A

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: None known.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and/or absorb spill with inert material then place in suitable container.

Other Statements: None.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.
Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Components not listed are either non hazardous or in concentration of less than 1%	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes:	Safety glasses are recommended if risk of eye contact.
Skin:	Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Light Straw, Clear
Specific Gravity:	1.182 @ 20°C
pH:	4.1 @ 20°C, 100.0%
Freezing Point:	28°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Soluble
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	9.86 LB/GA
Vapor Pressure:	N/D
% VOC:	0
Odor Threshold	N/D
n−octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong oxidizers, Strong bases.

Hazardous Decomposition Products: Oxides of carbon, Acetic acid.

Possibility of Hazardous Reactions: None known.

Reactivity: N/D

Conditions To Avoid: N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
N/D	N/D	N/D	N/D	N/D

Carcinogenicity Category

Component	Source	Code	Brief Description
Components not listed are either non hazardous or in concentration of less than 1%	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	1005 mg/l
Fathead Minnow	96h	LC50	6325 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard: No
Reactive Hazard: No
Release of Pressure: No
Acute Health Hazard: Yes
Chronic Health Hazard: No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Components not listed are either non hazardous or in concentration of less than 1%	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Components not listed are either non hazardous or in concentration of less than 1%	None.

Compliance Information

NSF: Certified to NSF/ANSI Standard 60
Maximum use rate for potable water − 10 mg/L
This product ships as NSF from:
Ashland, VA
Eldridge, IA
Nederland, TX

Food Regulations: N/A

KOSHER: This product is certified by the Orthodox Union as kosher pareve.
Only when prepared by the following ChemTreat facilities:
Ashland, VA; Eldridge, IA; Nederland, TX.

Halal: This product has not been evaluated for Halal approval.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	0
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
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>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
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N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: February 7, 2019

Disclaimer

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat BL1260
Product Use:	Boiler Water Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of SDS:	February 7, 2019
Revision Date:	February 7, 2019
Revision Number:	19020701AN

Section 2. Hazard(s) Identification

Signal Word: **WARNING**

GHS Classification(s):
Acute Toxicity Dermal − Category 5
Acute Toxicity Inhalation − Category 4
Acute Toxicity Oral − Category 4

Hazard Statement(s):
H313 May be harmful in contact with skin.
H332 Harmful if inhaled.
H302 Harmful if swallowed.

Precautionary Statement(s):

Prevention:
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well−ventilated area.
P270 Do not eat, drink, or smoke when using this product.

Response: None.

Storage: None.

Disposal: None.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Carbohydrazide	497−18−7	5 − 10

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin: Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: N/A

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: Carbon monoxide, carbon dioxide, or hydrazine may be released in a fire.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: None.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.
Do not freeze. Store above Freeze Point. If freezes, then mechanical mixing is required.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Carbohydrazide	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full−face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick−drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	1.026 @ 20°C
pH:	7.8 @ 20°C, 100.0%
Freezing Point:	41°F
Flash Point:	N/D
Odor:	Odorless
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	Complete
Evaporation Rate:	N/D
Vapor Density:	As Water
Molecular Weight:	N/D
Viscosity:	3 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.56 LB/GA
Vapor Pressure:	As Water
% VOC:	N/D
Odor Threshold	N/D
n−octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong oxidizers, Strong acids.

Hazardous Decomposition Products: Hydrazine, Carbon dioxide, Carbon monoxide.

Possibility of Hazardous Reactions: None known.

Reactivity: N/D

Conditions To Avoid: N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
N/D	N/D	N/D	N/D	N/D

Carcinogenicity Category

Component	Source	Code	Brief Description
Carbohydrazide	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Fathead Minnow	96h	LC50	159.32 mg/l
Ceriodaphnia dubia	48h	LC50	158.38 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
SCT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Carbohydrazide	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm: Hydrazine, <0.010%.

Special Regulations

Component	States
Carbohydrazide	None.

Compliance Information

NSF: N/A

Food Regulations: N/A

KOSHER: This product has not been evaluated for Kosher approval.

Halal: This product has not been evaluated for Halal approval.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	1
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: February 7, 2019

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat BL1501
Product Use:	Boiler Water Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of SDS:	February 7, 2019
Revision Date:	February 7, 2019
Revision Number:	19020701AN

Section 2. Hazard(s) Identification

Signal Word: **DANGER**

GHS Classification(s):

Skin corrosion/irritation − Category 1b
Eye damage/irritation − Category 1
Acute Toxicity Dermal − Category 4
Acute Toxicity Inhalation − Category 4
Acute Toxicity Oral − Category 4

Hazard Statement(s):

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H312 Harmful in contact with skin.
H332 Harmful if inhaled.
H302 Harmful if swallowed.

Precautionary Statement(s):

Prevention:

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P271 Use only outdoors or in a well−ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Ammonium hydroxide	1336−21−6	3 − 7

Comments

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

Eyes:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re−use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Thermal decomposition releases ammonia and oxides of nitrogen.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1−800−424−8802. Reportable Quantity of the product is 2466 Gal.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.
Do not store or handle in aluminum, zinc, copper, or their alloys.
Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Ammonium hydroxide	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full−face shield. Maintain eyewash fountain in work area.

Skin: Maintain quick−drench facilities in work area.
Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory: If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	0.971 − 0.975 @ 20°C
pH:	>12.0 @ 20°C, 100.0%
Freezing Point:	21.2°F
Flash Point:	>199.4°F
Odor:	Strong
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	Soluble
Evaporation Rate:	N/A
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.11 LB/GA
Vapor Pressure:	N/D
% VOC:	N/D
Odor Threshold	N/D
n−octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids, Zinc, Copper/copper alloys.
Hazardous Decomposition Products:	Ammonia, Oxides of nitrogen.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Ammonium hydroxide	Oral	LD50	350 MG/KG	Rat

Carcinogenicity Category

Component	Source	Code	Brief Description
Ammonium hydroxide	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	131 mg/l
Fathead Minnow	96h	LC50	8.2 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: As ammonia

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(AMMONIUM HYDROXIDE)	8	PGII
Over 2466 GA	RQ UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(AMMONIUM HYDROXIDE)	8	PGII
IMDG	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(AMMONIUM HYDROXIDE)	8	PGII
ICAO	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(AMMONIUM HYDROXIDE)	8	PGII
TDG	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(AMMONIUM HYDROXIDE)	8	PGII

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard: No
Reactive Hazard: No
Release of Pressure: No
Acute Health Hazard: Yes
Chronic Health Hazard: No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Ammonium hydroxide	Yes	N/A	1000

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Ammonium hydroxide	MA, NY, PA

Compliance Information

NSF: N/A

Food Regulations: N/A

KOSHER: This product has not been evaluated for Kosher approval.

Halal: This product has not been evaluated for Halal approval.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	2
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value

Abbreviation	Definition
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: February 7, 2019

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat BL1547
Product Use:	Steam Line Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of SDS:	February 11, 2019
Revision Date:	February 11, 2019
Revision Number:	19021101AN

Section 2. Hazard(s) Identification

Signal Word: **DANGER**

GHS Classification(s):

Skin corrosion/irritation − Category 1b
Eye damage/irritation − Category 1
Acute Toxicity Dermal − Category 3
Acute Toxicity Inhalation − Category 4
Acute Toxicity Oral − Category 3
Flammable Liquids − Category 3
Sensitization Skin − Category 1
Reproductive Toxicity − Category 2

Hazard Statement(s):

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H226 Flammable liquid and vapor.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H317 May cause an allergic skin reaction.
H361 Suspected of damaging fertility or the unborn child.

Precautionary Statement(s):

Prevention:

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P271 Use only outdoors or in a well−ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Cyclohexylamine	108−91−8	30 − 60

Comments

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re−use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Negative results obtained in sustained combustion test.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Product may emit toxic gases or fumes under fire conditions.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1−800−424−8802.
Reportable Quantity of the product is 2522 Gal.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.
Protect from heat and sources of ignition.
Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Cyclohexylamine	ACGIH TLV	41 mg/m³ TWA

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full−face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick−drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	0.951 @ 20°C
pH:	12.6 @ 20°C, 100.0%
Freezing Point:	27°F
Flash Point:	124°F
Odor:	Strong
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	7.93 LB/GA
Vapor Pressure:	N/D
% VOC:	50
Odor Threshold	N/D
n−octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong oxidizers, Acids.

Hazardous Decomposition Products: Oxides of carbon, Oxides of nitrogen.

Possibility of Hazardous Reactions: None known.

Reactivity: N/D

Conditions To Avoid: N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Cyclohexylamine	Oral	LD50	156 MG/KG	Rat
	Dermal	LD50	277 MG/KG	Rabbit

Carcinogenicity Category

Component	Source	Code	Brief Description
Cyclohexylamine	ACGIH	TLV−A4	Not classifiable as a human carcinogen.

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Rainbow Trout	96h	LC50	180 mg/l
Daphnia magna	24h	EC50	98 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.
EPA ignitibility characteristic hazardous waste D001 when disposed of in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S.	(CYCLOHEXYLAMINE)	8	PGII
Over 2522 GA	RQ UN2735	AMINES, LIQUID, CORROSIVE, N.O.S.	(CYCLOHEXYLAMINE)	8	PGII
TDG	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S.	(CYCLOHEXYLAMINE)	8	PGII
ICAO	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S.	(CYCLOHEXYLAMINE)	8	PGII

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	Yes
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Cyclohexylamine	N/A	10000	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Cyclohexylamine	MA, MN, NJ, NY, PA, WA

Compliance Information

NSF: N/A

Food Regulations: FDA: All ingredients in this product are authorized in 21 CFR 173.310 (d) for use as "Boiler Water Additives" where the steam may contact food, not to exceed the listed limitations, and excluding use of such steam in contact with milk and milk products.

KOSHER: This product is certified by the Orthodox Union as Kosher for Passover and year−round use.
Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX.

Halal: This product has not been evaluated for Halal approval.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	2
Flammability:	2
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: February 11, 2019

Disclaimer

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SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat BL1794
Product Use:	Boiler Water Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of SDS:	February 7, 2019
Revision Date:	February 7, 2019
Revision Number:	19020701AN

Section 2. Hazard(s) Identification

Signal Word: **WARNING**

GHS Classification(s):

Eye damage/irritation − Category 2b
Skin corrosion/irritation − Category 2
Acute Toxicity Inhalation − Category 4
Acute Toxicity Oral − Category 4

Hazard Statement(s):

H320 Causes eye irritation.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H302 Harmful if swallowed.

Precautionary Statement(s):

Prevention:

P264 Wash thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well−ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 If skin irritation develops or persists, get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists, get medical advice/attention.

Storage: None.

Disposal: None.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Sodium phosphate, tribasic	7601−54−9	1 − 5

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Take off contaminated clothing and wash before re−use. If skin irritation occurs, seek medical advice/attention.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1−800−424−8802.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.
Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Sodium phosphate, tribasic	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full−face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick−drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	1.040 @ 20°C
pH:	12.1 @ 20°C, 100.0%
Freezing Point:	37°F
Flash Point:	N/D
Odor:	Odorless
Melting Point:	N/D
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	<1
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.67 LB/GA
Vapor Pressure:	Negligible
% VOC:	0
Odor Threshold	N/D
n−octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong oxidizers, Acids.

Hazardous Decomposition Products: Oxides of phosphorus.

Possibility of Hazardous Reactions: None known.

Reactivity: N/D

Conditions To Avoid: N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Sodium phosphate, tribasic	Oral	LD50	7400 MG/KG	Rat

Carcinogenicity Category

Component	Source	Code	Brief Description
Sodium phosphate, tribasic	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Daphnia magna	50h	EC50	2158 mg/l
Bluegill Sunfish	96h	LC50	2682 mg/l
Rainbow Trout	96h	LC50	1463 mg/l
Ceriodaphnia dubia	48h	LC50	>10000 mg/l
Fathead Minnow	96h	LC50	>10000 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
Not a RCRA−regulated hazardous waste when disposed in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Sodium phosphate, tribasic	N/A	N/A	5000

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Sodium phosphate, tribasic	MN, NY, PA

Compliance Information

NSF: N/A

Food Regulations: FDA: All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food.

KOSHER: This product is certified by the Orthodox Union as kosher pareve.
Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX.

Halal: This product has not been evaluated for Halal approval.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	1
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
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>	Greater Than
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EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: February 7, 2019

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Safety Data Sheet compliant with OSHA Hazardous Communication Standard, 2012 (OSHA-HCS)

SECTION 1: Identification of substance / mixture and of the company / undertaking

1.1 Product identifier

Trade name	Anodamine HPFG
Alternative Names	Surface-active polyamines.

Relevant Identified uses of the substance / mixture and uses advised against

1.2

Identified Uses	High-pressure boiler metal passivation scale and corrosion inhibition for industrial water treatment.

1.3 Details of the supplier of the safety data sheet

Supplier	Anodamine Inc, 2590 Oakmont Drive, Building 300, Round Rock, Texas, USA 78665
Telephone and Fax	Tel: + 1 (512) 244 2318
Contact details of person responsible for SDS	Technical Support Services contact (info@anodamine.com) Tel: + 1 (512) 244 2318

1.4 Emergency telephone number

	For USA: **Chemtrec: +1-800-424-9300** For Canada: CanuTec: 613-996-6666 e-mail: ers@chemtelinc.com
Opening Hours	24 hours
Other Comments (e.g. Language of the phone service)	English

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

GHS-US classification	Not classified
Additional Information	For full text of Hazard statements: See Section 16

2.2 Label elements

GHS-US labelling:

Hazard Pictogram	No hazard pictograms required
Signal Word	No signal word required
Hazard Statements	No hazard phrases required
Precautionary Statements	Response: None Storage: None Disposal: None
Supplemental Hazard Information	None

2.3 Other Hazards — Not a PBT or vPvB

2.4 Unknown Acute toxicity (GHS-US) — No data available

SECTION 3: Composition / Information on ingredients

3.2 Mixture:

Chemical Characterisation: Surface Active Polyamines

Remarks: **No hazardous ingredients present according to OSHA-GHS 2012.**

SECTION 4: First Aid Measures

4.1 Description of first aid measures

General Notes	Immediately call doctor/physician if required.
Inhalation	No effects or symptoms are expected when handling the product. No respiratory PPE is required. Remove to fresh air if irritation occurs get medical attention.
Skin Contact	Remove contaminated clothing and shoes and immediately wash affected area with plenty of soap and rinse area with large amounts of water. Get medical aid if required.
Eye Contact	Remove any contact lenses and continue flushing eyes with plenty of soap and water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.
Ingestion	Do NOT induce vomiting. If victim is conscious and alert, wash out mouth with water, give several glasses of water. Get medical aid immediately if necessary.

4.2 Most important symptoms and effects, both acute and delayed

Refer to section 11 for more information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed: None specific

SECTION 5: Fire fighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Use water fog or spray, dry chemical foam or carbon dioxide

Unsuitable extinguishing media: None known

5.2 Special Hazards arising from the substance / mixture: Under fire conditions it may produce irritating fumes and/or gases if heated to 600 ^{0}C (1112 ^{0}F) or above.

Hazardous Combustion Product: Thermal decomposition products may release toxic and/or hazardous fumes or gases including carbon oxides (CO & CO2), amine.

5.3 Advise for fire fighters: Wear self-contained breathing apparatus and acid resistant clothing

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

Protective Equipment: Use personal protection recommended in section 8

Emergency Procedures: Evacuate the spill area safely to permit authorised personnel to handle the spill.

For Emergency Responders: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

6.2 Environmental precautions:

Avoid release to the environment. Collect leaking substance with suited acid proof containers. Do not allow entering into drain or surface waters. Collect contaminated material in suited acid proof containers. Dispose of contaminated material and its container as waste according to local regulations.

Water Spill: The material will not cause any adverse environmental impact if it riches waterways however avoid release in to waterways. The product is considered non-hazardous to aquatic environment based on third-party test results.

Land spill: None

Air Spill: None known

6.3 Methods and material for containment and cleaning up:

Contain large spills with containment walls and transfer the material to appropriate containers for reclamation or disposal. Collect by sweep, scoop or vacuum and remove. Flush spill area with water. The spill area may be slippery. Soak up liquid residue with suitable absorbent such as clay or saw dusts

6.4 References to other sections: Refer section 13 for disposal consideration

Additional information: Avoid contact with skin and eyes as part of safe handling. If spillage occurs on the public highway, indicate the danger and notify the authorities (police, fire brigade).

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

Protective measures: Avoid repeated contact with skin and eyes. Avoid inhalation of vapours or fumes.

Do not open the containers until ready for use. Close the containers properly.

Handle in accordance with good industrial hygiene and safety practices as mentioned in section 8.2. These practices include using appropriate personal protection, avoiding unnecessary exposure and removal of material from eyes, skin and clothing. Do not eat, drink or smoke when handling this product.

Observe all recommended safety precautions until container is cleaned, reconditioned or destroyed. The reuse of this material's container for non-industrial purposes is prohibited and any reuse must be in consideration of the data provided in this material safety data sheet.

Advice on general occupational Hygiene	Keep personal protective equipment in a clean place, away from the work area. Use clean and correctly maintained personal protective equipment. Always wash your hands after handling the product. Do NOT eat or drink in the workplace.

7.2 Conditions for safe storage including any incompatibilities:

Technical measures and storage conditions	Take all necessary precautions to avoid the accidental release of the product outside due to the rupture of containers or transfer systems. Ensure there is a suitable retention system. Storage facilities should be dry.
Packing Material:	
Suitable packing and storage material	SS 304 or 316, original containers or metal containers with glass, PVC, PP, PE or GRP lining
Unsuitable packing and storage material	None.
Requirements for storage rooms and vessels	Storage should be done in original containers. Store the containers in cool and dry place at ambient temperature at temperature > 37 ^{0}F (freezing protection) or < 180 ^{0}F typically ensure a useable shelf life of 3-5 years. Even after freezing, thawing allows re-use of the product without limitations
Advice on common storage	No special restriction on storage with other products
Storage Class	12
Further information on storage conditions	Shelf life: 3-5 years

7.3 Specific end Use(s) — Refer section 1.2

SECTION 8: Exposure control / personal protection

8.1 Control Parameters

No specific occupational exposure limit is known or established on components present in the product.

8.2 Exposure controls

Appropriate engineering controls	No specific additional engineering controls are required. Provide good natural or artificial ventilation.
Personal Protection equipment	
Eye / face protection	Use safety glasses or chemical goggles. Have eye wash facilities immediately available at any location where eye contact can occur.
Skin protection Hand Protection: Other skin protection:	Wear natural rubber or latex gloves. Wear suitable protective clothing including boots and safety glasses – acid resistant chemical clothing is not required. Wash thoroughly after handling. Although this product does not present a significant skin concern, minimize skin contamination by following good industrial practice.
Respiratory protection	Avoid breathing vapour / mist. Use approved respiratory protection equipment when air borne exposure is excessive. Consult respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer. In case of insufficient ventilation, wear suitable respiratory equipment
Environmental Protection Control	Avoid direct discharge into drains

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid
Colour	Clear liquid to light straw colour
Odour	Characteristic or limited
Odour Threshold	Not available
pH	~5.5 at 20 ^{0}C

Freezing point / range	< 37 ^{0}F
Initial boiling point / range	>100 ^{0}C (Similar to water)
Flash point	Not available
Evaporation rate	Not determined
Flammability (solid, gas)	Not flammable or combustible
Upper/lower flammability or explosive limit	Not applicable
Vapour Pressure	Same as water
Vapour Density	Not available
VOC content	No data available
Specific gravity@ 25C	0.98
Solubility(ies)	Miscible in water
Partition coefficient (N-Octanol / Water)	No data available
Auto ignition temperature	Not applicable
Decomposition temperature	Not available
Viscosity	No data available
Explosive Properties	No data available
Oxidising Properties	No data available
Percentage of Volatile components	1% of non-hazardous active in water steam phase at > 250 ^{0}C

9.2 Other information — Please refer technical datasheet

SECTION 10: Stability and reactivity

10.1	Reactivity	Reacts with acids, metals and strong oxidising agents
	Hazardous polymerisation	None
10.2	Chemical Stability	Stable under recommended storage and handling conditions.
10.3	Possibility of hazardous reactions	Hazardous polymerization is not expected to occur under normal temperature and pressure.
10.4	Conditions to avoid	None.
10.5	Incompatible materials	Strong acids and oxidizers
10.6	Hazardous decomposition products	Carbon oxide fumes (CO, CO_2)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Toxicological results bioassays on corrosion inhibitor Anodamine HPFG**.** (19 September 2014)

Investigative Species	*Observations*
	LC50
Daphnia Pulex 24 hour 100 g/l 48 hour 75.79 g/l	95 % Lower Confidence Limit: 80.32 – 124.50 ppm 95 % Upper Confidence Limit: 66.45 – 86.44 ppm
Pimephales Promelas 48 hour 139 g/l 96 hour 136.6 g/l	95 % Lower Confidence Limit: 55,755.86 ppm 95 % Upper Confidence Limit: 43,433.46 ppm

Environmental Protection Agency's Trimmed Spearman-Karber statistical program was used to analyze all data.
Both the lethal and sub-lethal endpoints were statistically calculated according to their respective EPA guidelines. The Chronic Freshwater organisms were calculated according to EPA-821-R-02-013, October 2002 Fourth Edition. The Chronic Marine and Estuarine organisms were calculated according to EPA-821-R-02-014, October 2002 Third Edition. The Acute Freshwater and Marine organisms were calculated according to EPA-821-R-02-012, October 2002 Fifth Edition.

Acute oral toxicity

Species: rat
Route of administration: oral
LD50: >5000 mg/kg
Not classified for acute oral toxicity as per OSHA-GHS

	regulation
Acute inhalation toxicity	No test data available
Acute dermal toxicity	Species: rat Route of administration: Dermal LD50: >5000 mg/kg Not classified for acute dermal toxicity as per OSHA-GHS regulation
Skin irritation	Species: Rabbit Exposure: 4 hour Result: Not irritating Not classified for skin irritation as per OSHA-GHS regulation
Serious eye damage / irritation	Species: Rabbit Result: Not irritating Not classified for Eye irritation/damage as per GHS regulation
Respiratory irritation	No data available
Sensitisation	Species: Guinea Pig Result: Not sensitizing Not classified for skin/respiratory sensitization as per OSHA-GHS regulation
Repeated dose toxicity	No classification is required for Repeated dose toxicity
Germ cell mutagen city	Negative results obtained in Ames, CHO HGPRT forward mutation and micronucleus tests.
Carcinogenicity	Not expected to be a carcinogen
Reproductive toxicity	No classification is required for Reproductive toxicity
Specific target organ toxicity – single exposure (STOT SE)	No data available
Specific target organ toxicity – repeated exposure (STOT RE)	No data available
Aspiration hazard	No data available

SECTION 12: Ecological information

12.1	Toxicity	Toxicity on Fish: Species: Pimephales promelas Duration: 96 h LC50: >100,000 mg/l Toxicity on Invertebrates: Species: Daphnia magna Duration: 48 h EC50: >100,000 mg/l Toxicity on Algae: Species: Algae Duration: 72 h EC50: >100,000 mg/l (Data extrapolated from similar products or equivalent analogues)	
12.2	Persistence and degradability	Test Method OECD 301D (Ready Biodegradability: Closed Bottle Test) 28 d	Degree of Removal 91%
12.3	Bio accumulative potential	No data available	

12.4	Mobility in Soil	No data available
12.5	Results of PBT and vPvB assessment	This substance does not fulfil the criteria for PBT or vPvB
12.6	Other adverse effects	No information available

13. Disposal considerations

13.1	Waste treatment methods	All local and national regulations should be followed. Consult regulatory officials for disposal requirement. For small quantities flush away with plenty of water. For large quantities send to special waste disposal system and burn in proper incinerator. This product should not be dumped in public storage and sewers / waterways.
13.2	US EPA RCRA Status	This material when discarded is not a hazardous waste as that term is defined by the Resource, Conservation and Recovery Act (RCRA), 40 CFR 261.
13.2.1	US EPA RCRA Hazardous waste number	Not applicable
13.2.2	Compound/Characteristic	Not applicable
13.3	Disposal considerations	Incineration

SECTION 14: Transport information

The Product does not meet for classification as dangerous good according to local or International transport regulations. The product is classified as not dangerous goods.

	US DOT (Road & Air) ADR/RID/GGVSE Canada TDG	**Mexican regulation for Land transport of Hazardous materials and wastes**	**(IMDG-Code/GGVSee**	**ICAO-IATA/DGR**
14.1 UN Number	-	-	-	-
14.2 UN Proper Shipping Name	Not applicable	Not applicable	Not applicable	Not applicable
14.3 Transport Hazard Class	Not applicable	Not applicable	Not applicable	Not applicable
14.4 Packing Group	-	-	-	-
14.5 Environmental hazards	No	No	No	No
14.6 Special precautions for user	-	-	-	-
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available				

15. Regulatory information

Inventory status: All components are on the following inventories:
US TSCA, Canadian DSL, EU EINECS

US Federal Regulations

US TSCA (12b): This product does not contain any chemical substances subjected to the US Toxic Substance Control Act (TSCA) 12 (b) export reporting requirements.

Product is compliance with TSCA regulation.

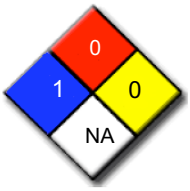
SARA Hazard Notification:

Hazard Categories Under Title III Rules (40 CFR 370)	Not applicable
SARA Section 311/312 Hazard Categories	Not applicable

SARA Title III Section 302 Extremely Hazardous Substances	None
SARA Title III Section 313 Toxic Chemicals	This product does not contain any chemical with known CAS numbers that exceeds the threshold (De Minimis) reporting levels established SARA Title III, Section 313.
US EPA CERCLA Hazardous Substances (40 CFR 302)	None
OSHA Process Safety Management, 29 CFR 1910.119	Not applicable
CERCLA Reportable Quantity	Not applicable
California proposition 65	To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.
Hazardous air pollutants (Clean Air Act)	The product does not contain any hazardous air pollutants as listed under section 112 of the Clean Air Act
Clean water act (CWA)	None listed

The product does not contains any chemicals which are listed as a carcinogen by IARA, NTP & OSHA

NFPA Rating



HMIS	Health: 1 Flammability:0 Physical hazards:0 Special Hazard: NA
HAZCOM Standard Status	This material is not considered to be hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other International regulations
Canada:

Canadian WHMIS classification	Not regulated or classified
National Pollutants Release Inventory (NPRI)	The product does not contain any components listed on Environment Canada's NPRI
Priority Substances List 1 and Priority Substances List 2 (PSL 1 and PSL2)	The product does not contain any components listed on Environment Canada's PSL1 and PSL2

EU regulations

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Not a hazardous substance or mixture according Regulation (EC) No. 1272/2008
Classification according to Directive 67/548/EEC	Not classified
SVHC or restricted substances list as per REACH regulation	No substances on this list have been intentionally added to the product. Concentration of impurities, if any, is expected to be below 0.1%.

Water Hazard Class (Germany) WGK: Slightly water endangering

SECTION 16: Other information

Indication of changes	All sections revised to meet OSHA-GHS requirements
Last revision date	-

Procedure used to derive the classification according GHS Revision no: 3 (adopted guidance by OSHA)

Classification	**Judgement**
Not classified	On basis of weight of evidence

Abbreviations and acronyms	CSR = Chemical Safety Report DNEL = Derived No Effect Level LD50 = Median lethal dose PNEC = Predicted No Effect Concentration STEL = Short term exposure limit TLV = Threshold limits TWA = time weighted average IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code PBT = Persistent Bioaccumulative Toxic vPvB = very Persistent and very Bioaccumulative GHS = OSHA = Occupational Safety and Health Administration IARC = International Agency for Research NTP = The National Toxicology program TSCA = US Toxic Substance Control Act
Key literature references for data	Environmental properties and safety assessment of organic surface-active polyamines detergent and water treatment Applications----W.E. Gledhill and T.C.J. Feijtel
Relevant Risk Phrases (in full)	Not applicable
Relevant H Statements (in full)	Not applicable
Further information	-

Although the information and recommendations are presented in good faith and believed to be correct as of the date hereof, Anodamine Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Anodamine Inc, be responsible for damages of any nature whatsoever resulting from the use of or reliance upon this information. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which this information refers. The data here is based on literature information.

For all-purpose the English version is final ***Version No: 1 US-GHS 2014***

Kingscote CHEMICALS

Safety Data Sheet

Issue Date: 04-Oct-2013 **Revision Date:** 06-Feb-2017 **Version Number:** 1.1

1. Identification

Product Identifiers
Product Name: Bright Dyes® FLT Yellow/Green Liquid

Product Number: 106001

Recommended Use & Restrictions on Use
Water tracing & leak detection dye

Manufacturer/Supplier
Kingscote Chemicals, Inc.
3334 South Tech Blvd.
Miamisburg, OH 45342
U.S.A.

Emergency Telephone Number
Company Telephone Number: (937) 886-9100
Emergency Telephone (24 hr): INFOTRAC (800) 535-5053 (North America)
+1-352-323-3500 (International)

2. Hazards Identification

Classification
This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

3. Composition/Information on Ingredients

This product is not hazardous according to OSHA 29 CFR 1910.1200. Components not listed are not hazardous or are below reportable limits.

4. First-Aid Measures

First-Aid Measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.
Skin Contact	Wash thoroughly with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Inhalation	Remove to fresh air. If breathing is difficult, administer oxygen; seek medical attention immediately.

Ingestion Rinse mouth. DO NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention if large quantities were ingested or if nausea occurs.

Most Important Symptoms and Effects

Symptoms Will cause staining of the skin on contact. May cause eye irritation. Inhalation of dust may cause respiratory irritation. Ingestion may cause urine to be a yellow/green color until the dye has been washed through the system.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to Physician Treat symptomatically.

5. Fire-Fighting Measures

Suitable Extinguishing Media
Water spray (fog). Carbon dioxide (CO2). Dry chemical. Regular foam.

Unsuitable Extinguishing Media
Not determined

Specific Hazards Arising from the Chemical
Product is not flammable. Burning/combustion may produce oxides of carbon and nitrogen (NOx).

Protective Equipment and Precautions for Firefighters
Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Use personal protective equipment as recommended in Section 8.

Environmental Precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12 and Section 13.

Methods and Material for Containment and Cleaning Up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Sweep up and collect into suitable containers for disposal. Flush area with water.

7. Handling and Storage

Precautions for Safe Handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practices. Use personal protection recommended in Section 8. Avoid contact with skin, eyes, or clothing. Avoid breathing dusts. Contaminated clothing should be thoroughly washed before reuse.

Conditions for Safe Storage, Including Incompatibilities

Storage Conditions	Keep container tightly closed and store in a cool, dry, and well-ventilated area. Keep from freezing.
Incompatible Materials	Acids.

8. Exposure Controls / Personal Protection

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Controls
Ensure adequate ventilation, especially in confined areas. Eyewash stations. Showers.

Individual Protection Measures, Such as Personal Protective Equipment:

Eye/Face Protection	Goggles.
Skin & Body Protection	Rubber gloves. Suitable protective clothing.
Respiratory Protection	No protection is ordinarily required under normal conditions of use.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practices.

9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Physical State	Liquid	**Odor**	None apparent
Appearance	Yellow/green liquid	**Odor Threshold**	Not determined
Color	Yellow/green		

Property	**Values**
pH	>8.0
Melting/Freezing Point	~32° F
Boiling Point/Range	~212° F
Flash Point	Not applicable
Evaporation Rate	1.8
Flammability (solid, gas)	Liquid – not applicable
Upper Flammability Limits	Not applicable
Lower Flammability Limits	Not applicable
Vapor Pressure	Not applicable
Vapor Density	0.6
Relative Density	Not applicable
Specific Gravity	Not determined
Solubility	Highly soluble in water
Partition Coefficient	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Viscosity	Not determined

10. Stability and Reactivity

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to Avoid
Keep separated from incompatible substances. Keep out of reach of children.

Incompatible Materials
Acids. Strong oxidizing agents.

Hazardous Decomposition Products
Oxides of carbon and nitrogen (NOx).

11: Toxicological Information

Information on Likely Routes of Exposure

Inhalation	Avoid breathing vapors or mists.
Ingestion	Do not ingest.
Skin Contact	May cause an allergic skin reaction.
Eye Contact	Avoid contact with eyes.

Delayed, Immediate, and Chronic Effects from Short- and Long-Term Exposure
May cause an allergic skin reaction.

Numerical Measures of Toxicity
Not determined

Symptoms Associated with Exposure
See Section 4 of this SDS for symptoms.

Carcinogenicity

NTP	None
IARC	None
OSHA	None

12. Ecological Information

Ecotoxicity
This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information
Not available

Persistence/Degradability
Not determined

Bioaccumulation
Not determined

Mobility
Not determined

Other Adverse Effects
Not determined

13. Disposal Considerations

Waste Disposal Methods
Dispose of in accordance with federal, state, and local regulations.

Contaminated Packaging
Do not re-use empty containers. Dispose of containers in accordance with federal, state, and local regulations.

14. Transport Information

Note
See current shipping paper for most up-to-date shipping information, including exemptions and special circumstances.

DOT	Not regulated
IATA	Not regulated
OMDG	Not regulated

15: Regulatory Information

International Inventories

TASCA	This product is not subject to TSCA 12(b) reporting requirements.

U.S. Federal Regulations

CERCLA	This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund

Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

U.S. State Regulations

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know This product does not contain any substances regulated under applicable state right-to-know regulations.

16: Other Information

HMIS

Health Hazards	Flammability	Instability	Special Hazards
1	0	0	Not determined

NFPA

Health Hazards	Flammability	Physical Hazards	Personal Protection
1	0	0	B

Issue Date 04-Oct-2013

Revision Date 06-Feb-2017

Revision Note Content Review

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Close this window SDS

Common Name: GREEN SWEEP NO-GRIT SWEEPING COMPOUND, 33NU38 100# DRUM
Manufacturer: CLEAN SWEEP PRODUCTS
SDS Revision Date: 9/18/2014
SDS Format: GHS-US

Item Number(s): 33NU38
Manufacturer Model Number(s):

SDS Table of Contents

Click the desired link below to jump directly to that section in the SDS.

CLEAN SWEEP PRODUCTS

62 KEARNEY STREET
PATERSON, NEW JERSEY 07522

PHONE: 862-257-9394

FAX: 862-257-9394

1582 LIKENS ROAD
MARION, OHIO 43302

PHONE: 740-223-0150

FAX: 740-223-0152

127 NANCE ROAD
CALHOUN, GEORGIA 30701

PHONE: 706-629-3030

FAX: 706-629-3080

SAFETY DATA SHEET

DATE PREPARED: 9-18-2014

SECTION 1: IDENTIFICATION

top

PRODUCT NAME: GREEN SWEEP NO-GRIT SWEEPING COMPOUND

ITEM#: 33NU38 100# DRUM

EMERGENCY PHONE NUMBER: 800-222-1222

PRODUCT USAGE: USED TO COLLECT DIRT AND DUST WHILE SWEEPING.

SECTION 2: HAZARD(S) IDENTIFICATION

top

LABEL ELEMENTS: N/A

SIGNAL WORD: N/A

H.M.I.S RATING:
HEALTH 0
FLAMMABILITY 1
REACTIVITY 0

HEALTH HAZARDS:
I.A.R.C LISTS NONE OF THE INGREDIENTS AS HAVING ANY CARCINOGENIC POTENTIAL, NOR HAS OSHA

SIGNS AND SYMPTOMS ON EXPOSURE: NONE

HAZARD STATEMENTS: NONE

SIGNAL WORD: NONE

EMERGENCY PHONE NUMBER: 800-222-1222

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

top

HAZARDOUS COMPONENTS:

GLYCERIN:
CAS#: 56-81-5

SAWDUST: NONE ASSIGNED

BASIC DYE:
CAS#: 3441-14-3 FOR RED
CAS#: 1330-38-7 FOR GREEN

SECTION 4: FIRST-AID MEASURES

top

INHALATION: LED THE PERSON TO FRESH AIR AND KEEP THE PERSON UNDER WATCH.

SKIN CONTACT: WASH THOROUGHLY WITH SOAP AND WATER.

EYE CONTACT: FLUSH EYES WITH PLENTY OF WATER UNTIL IRRITATION STOPS.

INGESTION: GIVE THE PERSON PLENTY TO DRINK AND KEEP THE PERSON UNDER WATCH.

SIGNS AND SYMPTOMS OF EXPOSURE: N/A

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
PERSONS HIGHLY ALLERGIC TO ORGANIC SOLVENTS.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:
IF EXPOSED OR CONCERNED, GET IMMEDIATE MEDICAL ADVICE/ATTENTION.

INFORMATION TO MEDICS: BRING THIS SAFETY DATA SHEET.

SECTION 5: FIREFIGHTING MEASURES

top

FLASH POINT: N/A

FLAMMABLE LIMITS: N/A

EXTINGUISHING MEDIA: WATER OR DRY CHEMICAL.

SPECIAL FIRE FIGHTING PROCEDURES: NONE REQUIRED

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE ESTABLISHED

SECTION 6: ACCIDENTAL RELEASE MEASURES

top

PERSONAL PRECAUTIONS: AVOID INHALATION AND EYE CONTACT.

ENVIRONMENTAL PRECAUTIONS:
IN ORDER TO PREVENT OUTLET TO THE SURROUNDING, PUT UP WASTE CONTAINERS.

METHODS AND MATERIAL FOR CONTAINMENT:
USE A BROOM AND DUST PAN TO SWEEP UP AND COLLECT AND THEN DISCARD.

OTHER PRECAUTIONS: KEEP AWAY FROM OPEN FLAME.

SECTION 7: HANDLING AND STORAGE

top

PRECAUTIONS FOR SAFE HANDLING: NONE

CONDITIONS FOR SAFE STORAGE:
STORE IN DRY PLACE. KEEP PRODUCT SEALED FOR PRODUCT QUALITY.

SPECIFIC END USE:
THIS PRODUCT SHOULD BE USED FOR APPLICATIONS DESCRIBED IN SECTION 1.

WASTE DISPOSAL METHOD: CONVENTIONAL TRASH DISPOSAL METHODS.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

top

RESPIRATORY PROTECTION: NONE

VENTILATION:
LOCAL EXHAUST: N/A
MECHANICAL (GENERAL): N/A
SPECIAL: NONE

PRODUCTIVE GLOVES: RECOMMENDED

EYE PRODUCTION: RECOMMENDED

OTHER: KEEP OUT OF EYES AND AVOID BREATHING DUST.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: NONE

WORK/HYGIENIC PRACTICES: WASH HANDS AFTER USE.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

top

BOILING POINT: N/A

SPECIFIC GRAVITY: N/A

VAPOR PRESSURE: N/A

MELTING POINT: N/A

VAPOR DENSITY: N/A

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: NOT SOLUBLE IN WATER.

APPEARANCE AND ODOR:
COLORED GRANULAR MATERIAL WITH ODORLESS OR SLIGHT PARAFFINIC ODOR.

SECTION 10: STABILITY AND REACTIVITY

top

REACTIVITY: NO DATA AVAILABLE

CHEMICAL STABILITY: STABLE

POSSIBILITY OF HAZARDOUS REACTIONS: NON SPECIFIC

INCOMPATIBLE MATERIALS: NONE

HAZARDOUS DECOMPOSITION PRODUCTS:
THE PRODUCT IS NOT DEGRADED WHEN AS SPECIFIED IN SECTION 1.

SECTION 11: TOXICOLOGICAL INFORMATION

top

CARCINOGENICITY: NO
NTP: NO
IARC MONOGRAPHS: NO
OSHA REGULATED: NO

ORAL: NO DATA CURRENTLY AVAILABLE

DERMAL: NO DATA CURRENTLY AVAILABLE

EYE EFFECTS: NO DATA CURRENTLY AVAILABLE

SKIN EFFECTS: NO DATA CURRENTLY AVAILABLE

MUTAGENICITY: NO DATA CURRENTLY AVAILABLE

INHALATION: NO DATA CURRENTLY AVAILABLE

SKIN SENSITIZATION: NO DATA CURRENTLY AVAILABLE

RESPIRATORY SENSITIZATION: NO DATA CURRENTLY AVAILABLE

ADDITIONAL TOXICITY DATA: NO DATA CURRENTLY AVAILABLE

SUPPLEMENTAL TEST DATA: NO DATA CURRENTLY AVAILABLE

OTHER DATA: NO DATA CURRENTLY AVAILABLE

SECTION 12: ECOLOGICAL INFORMATION

top

(NON-MANDATORY)

SECTION 13: DISPOSAL CONSIDERATIONS

top

(NON-MANDATORY)

SECTION 14: TRANSPORT INFORMATION

top

DOT REGULATION (GROUND): NOT REGULATED

IATA REGULATION (AIR): NOT REGULATED

IMDG/IMO REGULATION (WATER): NOT REGULATED

DOT HAZARD CLASS: NOT REGULATED

DOT CLASSIFICATION: NON-HAZARDOUS

COMMODITY CLASS: CLASS 50 SWEEPING COMPOUND

SECTION 15: REGULATORY INFORMATION

top

(NON-MANDATORY)

SECTION 16: OTHER INFORMATION

top

LAST REVISION DATE: 9/8/2014

H.M.I.S RATING:
HEALTH 0
FLAMMABILITY 1
REACTIVITY 0

DISCLAIMER:
THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN. THIS MATERIAL SAFETY DATA SHEET WAS PREPARED TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910, 1200 AND SUPERSEDES ANY PREVIOUS INFORMATION. PREVIOUSLY DATED SHEETS ARE INVALID AND INAPPLICABLE.

STM-5100

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product Name:	STM-5100
Chemical Name/Synonyms:	N/A
SDS Number:	21091401
Revision:	0
Revision Date:	9/14/2021
Product Use:	Corrosion inhibitor for high pressure boiler water and condensate treatment for surface passivation
Supplier:	Apollo Water Services LLC 7600 Quattro Drive Chanhassen MN 55317
Website:	www.ApolloWaterServices.com
Contact:	Non-Emergency (952) 227-6600
Emergency Telephone Number:	**CHEMTREC at (800) 424-9300 (24 Hours)**

SECTION 2: HAZARDS IDENTIFICATION

Hazard Classification:	This material is considered non-hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Signal Word(s):	None.
Pictograms:	None.
Hazard Statement:	None.
Precautionary Statements:	**Prevention** – Wash hands after handling. **Response** – None. **Storage** – Store in accordance with local regulations. **Disposal** – None.
Description of Other Hazards:	None known.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

No hazardous ingredients.

SECTION 4: FIRST-AID MEASURES

Inhalation:	Remove to fresh air and treat symptomatically. Seek medical attention if symptoms occur.
Skin Contact:	Wash affected areas thoroughly with soap and water. Seek medical attention if any irritation persists.
Eye Contact:	Flush eyes with a large amount of water. Seek medical attention if any irritation persists.
Ingestion:	Rinse mouth with water. Do NOT induce vomiting. Seek medical attention if symptoms occur.
Most important symptoms & effects (acute & delayed):	See Section 11 for detailed information on health effects.
Indication of need for immediate medical attention:	None known.
Special Treatment Needs:	None known.

SECTION 5: FIREFIGHTING MEASURES

Suitable extinguishing agents:	Use measures appropriate for surrounding environment.
Unsuitable extinguishing agents:	None known.
Specific hazards during firefighting:	Burning may produce irritating fumes. Exposure to decomposition products may be a hazard to health.
Specific extinguishing methods:	Use measures appropriate for surrounding environment. Use water spray to cool unopened containers.
Hazardous combustion products:	Thermal decomposition may produce oxide of carbon (COx) or nitrogen (NOx).
Special protective equipment for firefighters:	Use personal protective equipment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. See Section 8 for more information.
Environmental precautions:	None known. Avoid uncontrolled discharge.
Methods and materials for containment and cleaning up:	Soak up with inert absorbent material. Sweep up and shovel. Pick up and transfer to properly labelled containers. Clean contaminated floors and objects thoroughly while observing environmental regulations.

SECTION 7: HANDLING AND STORAGE

Advice on safe handling:	Wash hands after handling. See Section 8 for more information.
Conditions for safe storage:	Keep in properly labelled containers. Keep containers tightly closed in a dry, cool, and well-ventilated place. Do not store over 170°F. Do not freeze.
Materials to avoid:	None known.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters:	No known occupational exposure limits.
Engineering Controls:	Ensure adequate ventilation when using product.
Personal Protective Equipment:	See below.
Hand Protection:	Wear chemically resistant protective gloves.
Eye Protection:	Wear protective eyeglasses with side shields or chemical safety splash goggles.
Skin and Body Protection:	Wear suitable protective clothing.
Respiratory Protection:	No personal respirator required under normal conditions. If ventilation is insufficient, refer to OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear an MSHA.NIOSH approved respirator.
Environmental Exposure Controls:	Do not allow the produce to be released into the environment.
Consumer Exposure Controls:	Do not eat, drink, or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless liquid
Odor:	Slight
Odor Threshold:	No data available
pH:	6-7
Melting Point/Range:	No data available
Freezing Point:	0°C
Boiling Point/Range:	>90°C
Flash Point:	None
Evaporation Rate:	Not available
Flammability (solid, gas):	Not flammable
Lower Explosion Limit:	Not applicable
Upper Explosion Limit:	Not applicable
Vapor Pressure:	Not available
Relative Vapor Density (air=1):	Not available
Relative Density (water = 1):	0.99 (25°C)
Water Solubility:	Miscible
Partition Coefficient: n-octanol/water	No data available
Viscosity, kinematic:	
Relative vapor density:	No Data available
NOTE:	The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Reacts with strong acids and oxidizing agents.
Chemical Stability:	Product is stable under normal storage and use conditions.
Possibility of Hazardous Reactions:	Product will not undergo polymerization.
Conditions to Avoid:	Avoid extreme temperatures. Keep container closed when not in use.
Incompatible Materials:	Strong acids and oxidizing agents.
Hazardous Decomposition Products:	None under normal storage and use conditions. Thermal decomposition may produce oxide of carbon (COx) or nitrogen (NOx).

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SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity:	No data available
Skin Corrosion/Irritation:	No data available. Not expected to cause irritation.
Serious Eye Damage/Irritation:	No data available. Not expected to cause irritation.
Respiratory or Skin Sensitization:	No data available. Not expected to cause irritation.
Germ Cell Mutagenicity:	No data available
Carcinogenicity:	No known significant effects or critical hazards
Reproductive Toxicity:	No known significant effects or critical hazards
Specific Target Organ Toxicity (Single):	No data available
Specific Target Organ Toxicity	No data available
Aspiration Hazard:	No data available

SECTION 12: ECOLOGICAL INFORMATION

Aquatic Toxicity:	Ceriodaphnia dubia (Water Flea) 48-hr LC50: 381 mg/L Pimephales promelas (Fathead Minnow) 96-hr LC50: 277 mg/L
Elimination (Persistency & Degradability):	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Other Adverse Effects:	No data available

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal Methods:	Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal Considerations:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not reuse empty containers. Dispose of unused product or waste in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORT INFORMATION

UN Number:	N/A
Description of the Goods:	Not regulated by DOT, IATA, or IMDG/IMO
Class:	N/A
Packing Group:	N/A
Environmentally Hazardous:	N/A
Marine Pollutant:	N/A
	DOT Transportation data (49 CFR 172.101)

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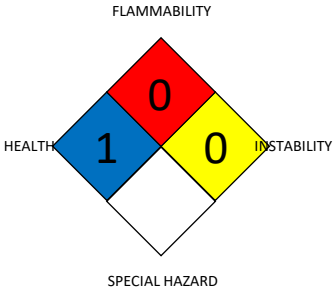
SECTION 15: REGULATORY INFORMATION

TSCA Inventory Status:	All ingredients are listed on the TSCA inventory
DSCL (EEC):	Not controlled under DSCL (Europe)
California Proposition 65:	Not listed
SARA 302:	Not applicable
SARA 304:	Not listed
SARA 311/312:	Not applicable
CERCLA:	Not applicable

SECTION 16: OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	**1**
FLAMMABILITY	**0**
PHYSICAL HAZARD	**0**

0 = Not Significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme
* = Chronic

Apollo Water Services LLC urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version. Employers must ensure that SDSs are readily accessible to employees.

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Attachment: LP1-TECH-5
Off-Site Wastes

Names and Addresses of Generators:

Sim Gideon Power Plant (adjacent to Lost Pines 1 Power Plant)
256 Power Plant Road, Bastrop, Texas 78602
TPDES Industrial Wastewater Discharge Permit Number: WQ0002052000

Winchester Power Park
1260 FM 448, Winchester, Texas 78945
No TPDES Industrial Wastewater Discharge Permit
Reclaimed Water Use Authorization: 2E-0000287

Waste Type Received:
Oily Wastewater

Oily Wastewater Volume

Up to 0.001 MGD (intermittent)	Sim Gideon Power Plant
Up to 0.001 MGD (intermittent)	Winchester Power Plant

Description/Characterization of Oily Wastewater:
Oil-containing sources are present at the Lost Pines 1 Power Plant (LP1), Sim Gideon Power Plant (SGP), and Winchester Power Park (WPP). Oils and oil-containing products in use at all of these facilities primarily include mineral and synthetic lubricating oils. Hydraulic oils, fuel oils, greases and other oil-containing products may also be present. Wash water, stormwater, and cooling water may commingle with small amounts of oily waste and enter drainage collection piping at these facilities as oily wastewater. Both SGP and WPP collect the oily wastewater and dispose of it off-site or transport it to LP1 for treatment in an oil water separator and discharge via Outfall 101.

Compatibility and Relationship of Proposed Waste Sources to On-Site Wastes:
Oily wastewater at LP1 is treated by gravimetric means using an Oil/Water Separator (OWS), which is connected to oil-prone wastewater sources through the drainage collection system. The OWS separates the oil waste from the wastewater prior to the wastewater being discharged to the detention basin. This design reduces the amount of oily substances in the wastewater to levels below the permitted limits l. The LP1 OWS is rated at 1,500 gallons per minute (GPM) and has ample capacity to treat oily wastewater from LP1, SGP, and WPP.

Similar oily wastewater is generated at SGP and WPP. At SGP, drum collection of oily wastewater is staged at several locations within the facility. These drums are manually emptied and stored prior to shipment and treatment by a third party or routed to the LP1 OWS. WPP has two OWS units. WPP does not have a TDPES discharge permit. Oily wastewater from WPP is shipped for treatment and disposal by a third party or to LP1 for treatment in the LP1 OWS. LCRA employees operate the SGP, LP1, and WPP facilities.

Waste Type Received:
Wastewater from Low Volume Waste Sources (proposed as an update to this application)

Low Volume Wastewater Volume

Up to 0.010 MGD (intermittent)	Sim Gideon Power Plant
Up to 0.005 MGD (intermittent)	Winchester Power Park

Description/Characterization of Low Volume Waste Sources:
Low volume wastewaters are generated at LP1, SGP and WPP. Examples include but are not limited to boiler blowdown, wastewaters from a neutralization basin, wastewaters associated with ammonia storage and maintenance, off-specification condensate, sump wastewater, lab streams, floor drains, wash down water, and related wastewaters. Typically, SGP discharges low volume wastewater via its industrial wastewater permit, which discharges to the same discharge canal as LP1. Typically, low volume waste from WPP is shipped for disposal by a third party. LCRA is requesting with this permit update to dispose of SGP and WPP low volume wastewater at LP1 as an alternative to the current method. If approved, the low volume waste will be discharged from LP1 Outfall 101, which is currently authorized for the discharge of low volume waste sources.

Compatibility and Relationship of Proposed Waste Sources to On-Site Wastes:
LP1 is a natural gas, combined-cycle electric generating facility with two combustion turbines and a HRSG to capture and use exhaust heat. The SGP and WPP electric generating units are also fueled with natural gas. SGP uses traditional steam generator units and WPP uses combustion turbines, which are very similar to the combustion turbines used in the LP1 combined cycle facility. The low volume wastes generated at the SGP and WPP facilities are similar to the low volume wastes generated at LP1, all of which are typical for natural gas-fired electric generating facilities. Therefore, the low volume wastes from SGP and WPP are compatible with LP1 low volume wastes. An exception is wastewater containing propylene glycol at WPP whose compatibility has not been confirmed. Only compatible low volume wastes will be accepted at LP1.

PCS Pollution Control Systems, Inc

5827 Happy Hollow Rd. Suite 1-B
Milford, OH 45150-1830
Tel: (513) 831-1165 Fax: (513) 965-4812
E-mail: Polconsys@aol.com
www.PollutionControlSystem.com

PACKAGE WASTEWATER TREATMENT PLANT SPECIFICATIONS

Pollution Control Systems, Inc. (PCS) is pleased to provide the following equipment specifications for your consideration.

One (1) prefabricated carbon steel packaged wastewater treatment plant and related equipment designed and constructed in accordance with the plans and specifications stated herein. The package plant will be Model PP-2.5-SC. The package plant will be the activated sludge type, specifically known as "Extended Aeration", designed for treating 300-gpd average daily flow of up to 900 PPM-BOD_5 wastewater and a peak flow of 1,000-gpd equiv.

A. General Specifications

Sludge Holding Chamber Volume:	1,175 gallons
Aeration Chamber Volume:	2,542 gallons
Clarifier Chamber Volume:	950 gallons
Chlorine Contact Chamber Volume:	68 gallons
Overall Length/Width/Height:	13.5' x 8' x 11'
Shipping Weight:	11,000 # (approximate)

B. Materials of Construction

All tank vessels will be fabricated of 1/4" structural grade ASTM designation A-36 steel plates joined by arc welding with fillets of adequate section for the joint involved. All walls will be continuous and watertight and will be supported by structural reinforcing members where required. Connections will conform to the requirements of the American Welding Society's Code and will develop the full strength of the member. All piping within the plant will be Schedule 40 steel pipe except as may be noted on other sections of the specifications or called for on the plans.

C. Surface Preparation and Coating

All vessel surfaces to be painted will be properly prepared in a workmanlike manner so as to obtain a smooth, clean and dry surface. The interior surfaces will be blasted to SSPC-SP-10 and the exterior surfaces to SSPC-SP-6. All interior and exterior vessel surfaces will be painted with Bitumastic No. 300-M High Build Coal Tar Epoxy as manufactured by Carboline Company.

D. Sludge Holding Chamber

The chamber will be of the aerated type. Diffused air will be supplied by the plant blower system supplying 30 CFM of air per 1000 cubic feet of volume. The diffusers will be located parallel to and near the bottom of the tank. All piping and valves within the chamber will be factory installed.

E. Aeration Chamber

The aeration chamber will be of sufficient capacity to provide a minimum of 24 hours retention of the average daily flow, and/or maximum loading of 15 pounds of BOD_5 per 1,000 cubic feet of aeration tank volume. To insure maximum retention, enhance spiral rotation and eliminate short-circuiting of raw sewage, the aeration chamber will be constructed with fillets top and bottom and air diffusers will be placed longitudinally along one side of the chamber. The velocity of rotation will be sufficient to scour the chamber bottom and prevent sludge filleting as well as to prevent the escape to the surface of minuscule air diffusion bubbles and by so causing their entrapment to provide maximum oxygenation efficiency.

F. Clarifier Chamber

The clarifier chamber will be of such size as to provide a minimum of 4 hours retention, based upon the same design flow rates governing the aeration chamber, and will have proper baffling to prevent short circuiting and to provide maximum uniform retention.

The total settling volume will include the volume of the upper 1/3 of the sludge hopper or hoppers. Flat bottom area of hopper will in no case be greater than one square foot. The slope of the hopper walls will not be less than 1.7 vertical to 1.0 horizontal. Settled sludge will be returned from the clarifier sludge hopper to the aeration chamber by the positive sludge return system, consisting of one or more airlift pumps. The clarifier effluent will pass over the edge of the baffled effluent weir into the effluent trough and then out of the chamber. The effluent weir trough will be equipped with adjustment to permit precise leveling of the serrated weir after plant installation.

G. Sludge Recirculation System

There will be installed within the clarifier chamber a positive sludge recirculation system consisting of one (1) 2 inch diameter airlift sludge return assembly per hopper meeting the following specifications. The airlift pump will have the recirculation capacity ranging from 0% to 150% of the design flow. The airline supplying air to the pump will be equipped with a cock valve to vary the amount of air supplied to each pump, thus varying the capacity of the pump. The airlift pump will be firmly supported and will be equipped with a clean-out plug to allow for easy cleaning and maintenance.

H. Scum Recirculation System

There will be installed within each clarifier chamber a positive scum and skimming recirculation system consisting of one (1) 2" diameter airlift skimming device meeting the following specifications. The skimming device will be of the positive airlift pump type, located in a position to skim and return floating material to the aeration chamber. The airline supplying air to the skimming device will be equipped with a valve to regulate the rate of return. The scum intake will be equipped with an adjustment assembly that will enable exact positioning of the skimmer at water level.

I. Chlorine Contact Chamber

A chlorine contact chamber will be provided for proper disinfection of the treated wastewater prior to discharging from the plant. The chlorine contact tank will have 90 minutes of retention based on the peak flow of 1,000 gpd. Sufficient flow baffles will be supplied to ensure proper mixing of the chlorine solution with the plant effluent. Effluent will be disinfected by means of a tablet type chlorination system.

J. Air Diffusion System

An air distribution manifold of rectangular hollow steel tubing will be installed longitudinally on one side and along the entire length of the plant with diffuser drop assemblies connected thereto.

Each diffuser drop assembly will be equipped with an air regulation and/or shut-off cock valve, a disconnecting union and a diffuser bar with air diffuser nozzles mounted thereon. The diffusers will be parallel to and near the base of the vessel sidewall and at an elevation that will provide the optimum diffusion and mixing of the vessel contents. Each air diffuser will be constructed with an integral air check diaphragm. It will be designed to handle a wide range of airflow. The oxygen transfer capacity of each diffuser will be such that an adequate supply of oxygen will be maintained in the aeration chamber to meet treatment requirements of the design sewage load.

K. Blower/Motor Units

To meet the air requirements of this wastewater treatment system, two positive displacement blower/motor units will be supplied. The blower/motors will be mounted at grade level on a pad supplied by the contractor as indicated on the plans. The blower/motor units will be capable of providing a minimum of 2050 cubic feet of air per pound of BOD_5 plant loading.

Each blower will be capable of delivering 20 CFM when operating at 4 PSI. The motor will be 1.0 HP, ODP type, for operation on 230 volt, 3 phase, 60-cycle service.

The two-blower/motor units will be mounted to a molded fiberglass base. The base structure will be adequately reinforced to support the blower/motor units. The blower/motor units will be enclosed within a molded fiberglass weatherproof enclosure mounted to the base. The fiberglass hood is designed for easy access to service the unit.

To allow for easy adjustment of the V-belt drive connection between the blower and motor, each motor will be mounted on an adjustable motor mounting base. Each blower will be fitted with a dry type filter/silencer at the air intake. Each blower discharge will be fitted with a check valve, and a flexible rubber discharge coupling. For purposes of determining the blower performance and/or diffuser condition, a pressure relief valve and pressure gauge will be supplied. They are to be mounted in the air manifold by the installing contractor.

L. Central Control Panel

A central control system installed within a weatherproof enclosure will be provided. The enclosures will be NEMA 3R rated. The electrical controls will consist of magnetic starters, program timers and switches necessary to automatically control all electrical devises and/or motors on the sewage treatment system.

M-O-A selector switches and magnetic starters in conjunction will control the blower motor with the program timer. The program timers will have the capability to operate the treatment system when required as determined by the variation in the daily flowrate. Properly sized circuit breakers and fuses will protect all electrical equipment and circuitry. All duplex or standby equipment will be designed so that the devices within the control system will operate them. The enclosure will be wired for 230 volt, 3 phase, 60 cycle, and 3 wire incoming power.

M. Full Tank Grating

The tank will be covered with service walkway grating to service the plant equipment. Grating panels will each consist of one-piece skid resistant steel plank. All grating panels will be constructed of 18 gauge, galvanized sheet steel. Each grating panel has a standard 9" surface width and a 2 1/2 " rib depth. Each panel will be so supported as to have a safe uniform load carrying capacity of 80 pounds per square foot.

N. Handrails

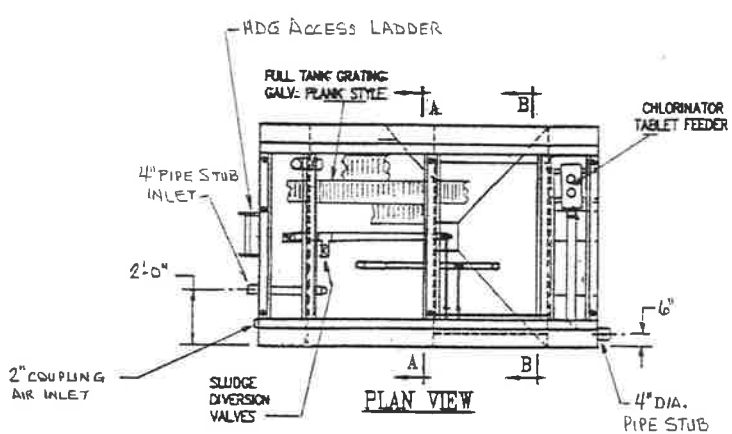
Perimeter handrails are supplied with mounting flanges for bolting into place. The rails and posts are fabricated from 1-1/4" diameter schedule 40-carbon steel pipe hot dipped galvanized. Longer sections of hand railing are spliced to allow for easier handling and installation. Due to shipping limitations, handrails are shipped loose for field mounting by the field contractor.

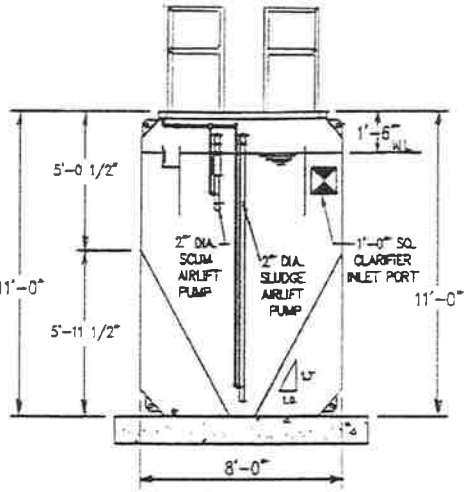
O. Access Ladder

A plant access ladder will be provided for above grade installation. Ladder is fabricated of carbon steel with 3/8" thick rails and ¾" diameter rungs and hot dipped galvanized after fabrication.

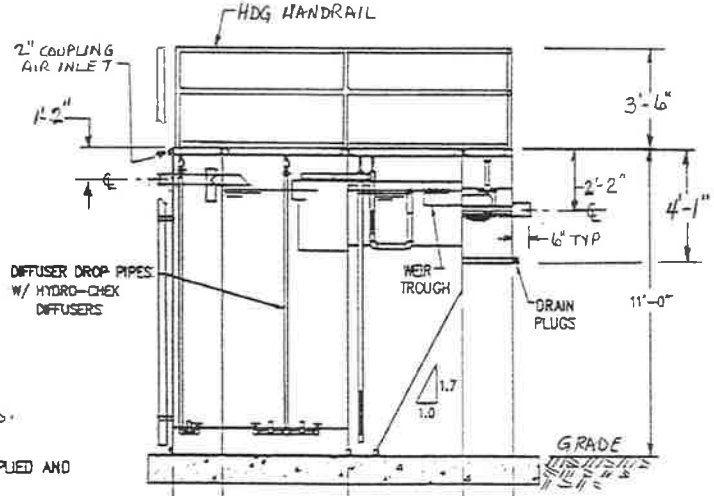
P. Guarantee

PCS will guarantee for one (1) year from the date of shipment that the vessel and all component equipment will be free from defective materials and workmanship. PCS will furnish replacement parts for any component considered in the opinion of PCS to be defective, whether of his or other manufacturer during the guarantee period.





VIEW B–B



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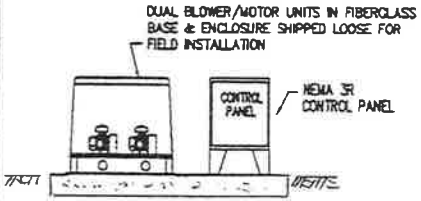

B/M & PANEL TO BE PAD MOUNTED, LOCATION TO BE DETERMINED BY OTHERS WITHIN 5' OF TANK. INTERCONNECTING PIPING TO TANK SEE NOTE #1. ELECT. WIRING/CONDUIT BETWEEN B/M & PANEL BY OTHERS.

NOTES:

1.) ALL EXTERNAL PIPING TO THE TANK IS TO BE SUPPLIED AND INSTALLED BY THE INSTALLATION CONTRACTOR.

2.) FOUNDATION PAD MATERIALS AND DESIGN IS DETERMINED BY THE PROJECT ENGINEER AFTER SOIL ANALYSIS IS COMPLETED

3.) MATERIALS FOR ANCHORING OF TANK TO THE FOUNDATION PAD IS TO BE SUPPLIED BY OTHERS

4.) INCOMING ELECTRICAL POWER AND CONNECTION TO THE THE CONTROL PANEL IS BY THE ELECTRICAL CONTRACTOR.

PLANT MODEL NUMBER	DESIGN FLOW GPD	AERATION TANK VOLUME	CLARIFIER TANK VOLUME	SLUDGE TANK VOLUME	CHLORINE CONTACT TANK-VOL.	AER. TANK BLOWER HP	AER. TANK BLOWER CFM
PP-2.5-3C	300	2542	950	1175	58	1.0	20

REV.	DATE	DESCRIPTION	APPROV.
1	1-14-03	AS BUILT	AT

PCS Pollution Control Systems, Inc.
5827 Happy Hollow Ln. Suite 18
Milford, Ohio 45150
(513) 831-1165
E-mail PcsConSys@aol.com

LOST PINES POWER PLANT

ADF ~ 300 GPD

BOD$_5$ ~ UP TO 900 PPM

SCALE: NTS | PROJECT NO. P5245

DRAWN BY: AT | DATE: 11-14-02 | SHEET 1 OF 1 | DRAWING NO. 15214-200

CHECKED BY: | DATE:

0022-1/1251 #

LCRA
ENERGY • WATER • COMMUNITY SERVICES

ENGINEERING CALCULATIONS

WASTEWATER TREATMENT PERMIT RENEWAL

LOST PINES POWER PARK
SGP & LPP
BASTROP, TX

PREPARED BY:
ENGINEERING SERVICES

REVISION TABLE					
Rev	Date	Purpose	Prepared	Reviewed	Approved
0	1/10/2014	For Review	N. GULLO		
1	1/14/2014	For Issue	N. GULLO	NUNA MITCHELL	

STATE OF TEXAS
NATHAN MATTHEW GULLO
96305
LICENSED
PROFESSIONAL ENGINEER
01-24-2014

This document is released for the purpose of PERMITTING under the authority of Nathan Matthew Gullo, P.E. TX#96305.

Jan. 14, 2014

LOST PINES POWER PROJECT
WASTEWATER TREATMENT PLANT
DESIGN CALCULATIONS

Influent Quality Characteristics - The raw sewage characteristics used for design purposes are as follows:

Parameter	Concentration	
BOD5	300 mg/l	(From 30TAC 217.32(a)(3) Table B.1 – Office Building or Factory)

Influent Flow Characteristics - The hydraulic design of the Lost Pines Power Plant wastewater treatment facility must ensure that the plant will operate under the most extreme conditions anticipated. The plant process and hydraulic design for this facility are as follows:

Flow	Gallons Per Day	Gallons Per Minute
Average Daily Flow (Qave)	1,300	0.9
Peak 2-Hour Flow (Qpk)	7,200	5.0

Loading	Pounds per day
BOD5	3.3

This design provides for a staffing level up to 65 people based from 30TAC 217.32(a)(3) Table B.1 – Office Building or Factory at a flow rate of 20 gallons per person per day.

Process Design – The existing treatment plant was designed to produce an effluent quality in compliance with the proposed permitted parameters of: CBOD5 = 10 mg/l; TSS = 15 mg/l; Dissolved Oxygen = 4.0 mg/l; Chlorine Residual = 1 to 4 mg/l after 20 minutes detention time at peak flow. In order to achieve the required removal efficiencies, the activated sludge process operated in the extended aeration mode was chosen. The 7 day low reactor temperature is 15°. The anticipated operating ranges for MLSS and RAS are 5,500 mg/l and 6,000 mg/l respectively. Other assumptions include a single stage aerobic digester with supernatant decant and digester solids concentration of 2%.

Treatment Units	**TCEQ Requirement**	**Actual Provided**
Aeration Basin		
Organic loading rate (lbs/day/1000 ft^3)	15 (Max)	9.6
Organic loading rate (lbs/day)	5.1	3.3
Total aeration volume (ft^3)	340	340
AREA (ft^3)		40
Side-water depth (ft)		8.5

Jan. 14, 2014

LOST PINES POWER PROJECT
WASTEWATER TREATMENT PLANT
DESIGN CALCULATIONS

Treatment Units	TCEQ Requirement	Actual Provided
Clarifier		
Surface loading rate (Qpk)(GPD/ft^2)	900	200
Detention Time (Qpk)(hr)	2.0 (Min)	3.2
Surface area (ft^2)	12.7	36
Volume (ft^3)	127*	127
Side-water depth (ft)		3.5
Total Tank Height (ft)		11
Maximum weir loading (Qpk)	20,000 (Max)	3,600
Weir length (ft)	0.36	2
Aerobic Digester		
MCRT at 15°C (days)	60 (Min)	178
WAS solids production (ppd)		1.5
Digested sludge solids production (ppd)		3.3
Required solids in digester (lbs)		198
Digester Volume (ft^3)		157
Chlorine Contact Chamber		
Detention time (Qpk) (minutes)	20	96
Volume (Qpk) (ft^3)	21	64
Air Requirements		
Aeration Basin		
Aeration requirements (SCF/day/lb)	4,867	4,867
Oxygen required (lb O2/lb BOD5)	1.8	1.8
Oxygen required (lb/day)	9.4	6.0
Air provided (SCFM)	17.2	11**
Sludge Digester		
Aeration requirements (SCFM/1000 ft^2)	>20 and <30 (max)	30
Air Flow Rate (SCFM)	>3.1 & <4.7	4.7

* Minimum volume needed to meet 2 hour detention time in Clarifier.

**Design aeration basin loading rate is less than the max allowable Organic Loading Rate.

Jan. 14, 2014

LOST PINES POWER PROJECT
WASTEWATER TREATMENT PLANT
SLUDGE MANAGEMENT PLAN

Influent Design Flow = 1,300 gpd
Influent BOD Concentration = 300 mg/l
Aerobic Digester Volume: 1,175 gallons
Aeration Basin MLSS: 3,500 to 5,500 mg/l

Solids Generated	100% flow	75% flow	50% flow	25% flow
Pounds Influent BOD_5	3.3	2.4	1.7	0.8
Pounds of digested dry sludge produced*	0.5	0.4	0.2	0.1
Pounds of wet sludge produced	24	18	12	6
Gallons of wet sludge produced	2.9	2.2	1.5	0.7

*Assuming 0.15 pounds of digested dry sludge produced per pound of influent BOD_5 at average temperatures and 2.0% solids concentration in the digester.

Sludge is wasted from the RAS flow stream to the aerobic digester. Sludge solids are stabilized in the digester; supernatant is decanted from the digester and returned to the plant headworks for treatment.

Liquid digested sludge is removed from the digester for disposal on a regular basis as required. The calculated mean cell residence time (MCRT) for the digester storage volume of 1,175 gal is approximately 405 days at 100% capacity and annual average digested sludge production of 0.5 ppd. The digested sludge is transported by a registered hauler to a TCEQ authorized land application site for beneficial use.

The contracted registered hauler at the time of this report was S&M Vacuum and Waste Service, LTD ((TCEQ permit number 20089) at an approximately 16-month interval given low average flows of 433 Gallons per day over the past 2 years with a maximum day of 2410 gallons. Sewage sludge is ultimately disposed at Grandy Ranch, LTC (TCEQ permit number 04458), a beneficial land application site.

Attachment LP1-TECH-7
Worksheet 11: Cooling Water Information

SECTION 1: COOLING WATER SYSTEM DATA

Section 1(b)(i): Narrative Description

The Lost Pines 1 Power Plant is one of two steam/electric generating facilities located on the banks of Lake Bastrop. Lost Pines 1 Power Plant (also known as Lost Pines 1 or LP1) was constructed in 2001 adjacent to the Sim Gideon Power Plant (SGP), a power plant facility owned by LCRA, which began operations in 1964. Lake Bastrop was constructed at the same time as SGP for use as a cooling water impoundment. LP1 is a combined-cycle facility that is 50% owned by GenTex and 50% by LCRA.

Lake Bastrop is used as a cooling impoundment for the LP1 plant operations. Water from the lake is pumped into the LP1 Power Plant for once-through cooling, auxiliary cooling, the fire protection system, and other plant processes. LP1 shares a common intake embayment with SGP, and the water intake structure is fitted with bar grates and traveling water screens to remove debris and vegetative matter prior to pumping the water to the plant. The lake water is treated with chemicals as needed and then used primarily for non-contact waste heat exchange from the steam condensers at the generating unit. After passing through the condensers, the water is returned to the lake via a concrete-lined discharge canal on the eastern side of the plant.

A river pumping station was installed on the Colorado River approximately 3.3 miles to the west of Lake Bastrop to provide make-up water to the lake. See **Figure 1** for location map of the pump station and Lake Bastrop. Beginning in February 2014, industrial groundwater supply wells are used as the primary source of make-up water to Lake Bastrop, and the river pumping station is used solely for back-up or emergency make-up water.

LP1 withdraws raw lake water from the common intake embayment located on the west side of Lake Bastrop and then the once-through cooling water and other industrial wastewaters are discharged into a discharge canal that returns the water to the northeast arm of the reservoir. See **Figure 2**. The main components of the cooling water system include the impoundment (Lake Bastrop), a combined LP1/SGP intake embayment; a Cooling Water Intake Structure (CWIS) for LP1 that is immediately adjacent to the SGP CWIS; bays; screens; and screen wash pumps. The intake embayment ranges from 16 feet deep in front of SGP to 19 feet deep in front of LP1.

At LP1, the intake water passes through bar screens, a concrete receiving area (bay), traveling water screens, and then to sumps for the cooling water pumps for LP1. Each bay is fitted with two traveling water screens, and the screens serving each cooling-water pump are isolated from adjacent cooling water pumps and screens. The cooling water pumps do not have variable flow capacity but operate at maximum capacity when on. A floating oil boom, 250 feet in length, is stationed 150 yards from the intake across the embayment to restrict floating debris.

The LP1 and SGP combined facilities may operate continuously; however, output changes with changes in electrical demand. Electrical demand typically is highest in the summer.

Section 1(b)(ii): Maps

Maps are included as **Figures 1, 2, and 3**. The latitude and longitude for each CWIS is shown on page 66 of 76 of the Technical Report and on **Figure 1**. The normal operating elevation of the lake surface is approximately 450 feet. The elevation of the intake pipes for the circulating water pumps for LP1 is approximately 435 feet. The elevation of the intake pipes for the circulating water pumps for SGP is 436 feet.

For the river pump station, the elevation of the river intake pipe is approximately 315.5 feet. At this location, the normal river water level is 326 feet and river bottom is 314 feet.

Section 1(b)(iii): Water Reuse

Not applicable

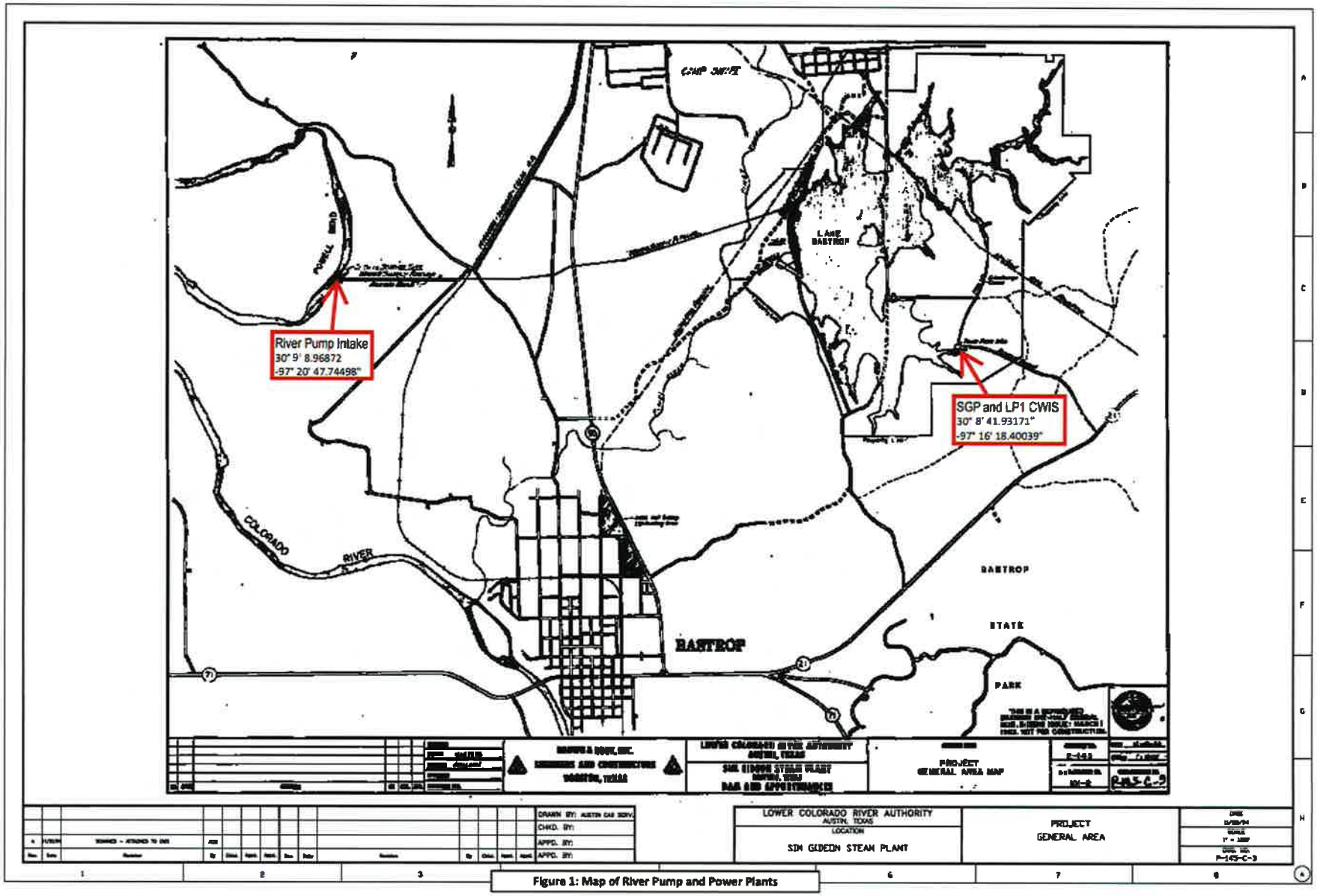

Figure 1: Map of River Pump and Power Plants

Figure 2: Map of Lake Bastrop Impoundment and Power Plants

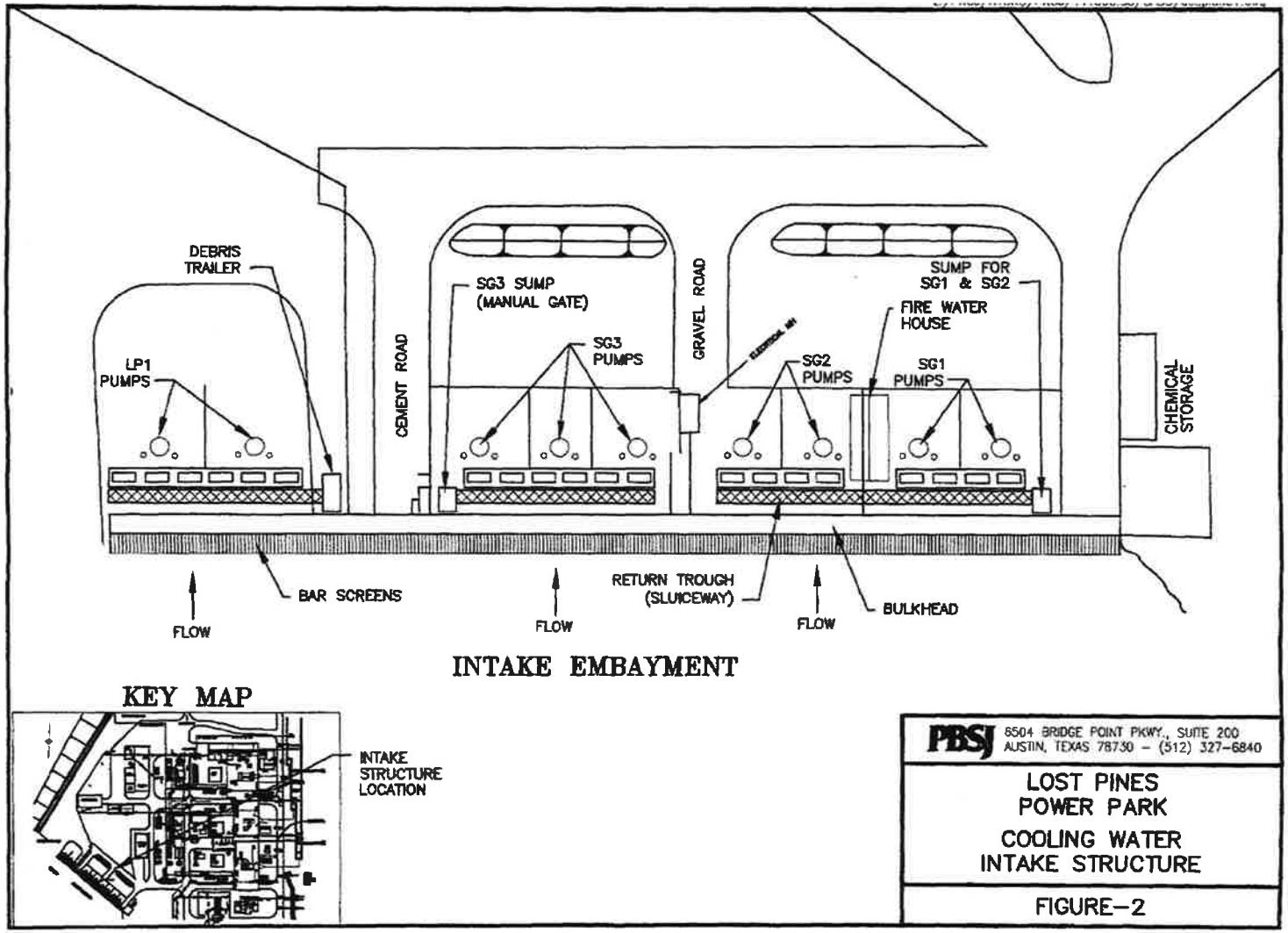

Figure 3: CWIS Plan Drawing for LP1 and SGP

Section 1(b)(iv): Calculations and Data to Support AIF and DIF

(i) Engineering and operating staff at LP1 have provided data for this report. The design data is based on pump manufacturer data and 100% of available hours. The actual flow is derived primarily from manufacturer data and actual operating hours, with some information estimated.

(ii) Plant operating capacity is calculated from start/stop times and Unit load known as the Gross Capacity Factor from the National Electrical Reliability Council (NERC) Generating Availability Data System (GADS).

Section 1(b)(v): Actual Intake Flow (MGD) for one year (LP1)

The following is the daily actual intake flow for the Lost Pines 1 plant over the period of 12 months, including circulating water (main condenser) pumps and cooling water (auxiliary) pumps.

	2023 Million Gallons Per Day											
Day/Mon	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	344	344	344	0	344	344	344	344	344	344	344	344
2	344	344	344	334	344	344	344	344	344	344	344	344
3	344	344	344	344	344	344	344	344	344	344	344	344
4	344	344	344	344	344	344	344	344	344	344	344	344
5	344	344	344	344	344	344	344	344	344	344	344	344
6	344	344	344	344	344	344	344	344	344	344	344	344
7	344	344	229	344	344	344	344	344	344	344	344	344
8	344	344	50	344	344	344	344	344	344	344	344	344
9	344	344	0	344	344	344	344	344	344	344	344	344
10	344	344	0	344	344	344	344	344	344	344	344	344
11	344	344	0	344	344	344	344	344	344	344	344	344
12	344	344	0	344	344	344	344	344	344	344	344	344
13	344	344	0	344	344	344	344	344	344	344	344	344
14	344	344	0	344	344	344	344	344	344	344	344	344
15	344	344	0	344	344	344	344	344	344	344	344	344
16	344	344	0	344	344	344	344	344	344	344	344	344
17	344	344	0	344	344	344	344	344	344	344	344	344
18	344	344	0	344	344	344	344	344	344	344	344	344
19	344	344	0	344	344	344	344	344	344	344	344	344
20	344	344	0	344	344	344	344	344	344	344	344	344
21	344	344	0	344	344	344	344	344	344	344	344	344
22	344	344	0	344	344	344	344	344	344	344	344	344
23	344	344	0	344	344	344	344	344	344	344	344	344
24	344	344	0	344	344	344	344	344	344	344	344	344
25	344	344	0	344	344	344	344	344	344	344	344	344
26	344	344	0	344	344	344	344	344	344	344	344	344
27	344	344	0	344	344	344	158	344	344	344	344	344
28	344	344	0	344	344	344	344	344	344	344	344	344
29	344		0	344	344	344	344	344	344	344	344	344
30	344		0	344	344	344	344	344	344	344	344	344
31	344		0		344		344	344		344		344

Section 1(b)(vi): Impingement and Entrainment Technologies and Operation Measures

LP1 and SGP utilize a cooling water impoundment (Lake Bastrop) as a Closed Cycle Recirculating System (CCRS) as defined by EPA for Impingement Mortality, which lists a CCRS as an option to achieve BTA for impingement mortality reduction, as long as make up withdrawals were minimized (40 CFR 125.92(c)(2). See **Figure 4** for a copy of the letter received from TCEQ approving Lake Bastrop as a CCRS. Beginning in February 2014, industrial groundwater supply wells are used as the primary source of make-up water to Lake Bastrop, and the river pumping station is used solely for

back-up or emergency make-up water. The CCRS also serves as an entrainment technology because water in the lake is recirculated for continual reuse as plant cooling water.

SECTION 2: COOLING WATER INTAKE STRUCTURE(S)

Section 2(b)(i): Narrative Description

The cooling water used at steam/electric plants, such as LP1 and SGP, include large circulating water pumps used for once-through cooling for the main condensers and smaller cooling water (also referred to as auxiliary water) pumps that provide water to cool equipment.

LP1 is served by two circulating water pumps, rated at 115,500 gpm each, and one auxiliary cooling water pump rated at 8,500 gpm. The pumps are protected by two screens and each pump is in a separate bay, hydraulically separated from the other pump and bay. SGP Units 1 and 2 each have two circulating water pumps and two cooling water pumps, commonly referred to as auxiliary cooling water. The following information is based on pump curves. The SG1 circulating pumps each have a maximum operating flow rate of 62,500 gallons per minute (gpm), and auxiliary cooling water pumps each have a maximum operating flow rate of 2,000 gpm. SGP Unit 2 has two circulating water pumps which each have a maximum operating flow rate of 50,800 gpm, and auxiliary cooling water pumps, which each have a maximum operating flow rating of 1,800 gpm. The SGP Units 1 and 2 are each equipped with four screens, in order to protect the pumps. SGP Unit 3 has three circulating water pumps: two pumps are rated at 62,500 gpm and one is rated at 70,000 gpm. SGP Unit 3 has three auxiliary cooling water pumps, all rated at 2,500 gpm. SGP Unit 3 is equipped with six screens, which also serve to protect the pumps. Pumps for all three generating units do not have variable flow capacity but operate at maximum capacity when on.

The LP1 intake is equipped with six traveling screens (two screens for each pump) with tray widths of 6.5 feet. The screens have a wire mesh diameter of 0.08 inch (number 14 wire and mesh gauge) with 3/8 inch mesh openings. SGP Units 1 and 2 are each equipped with four screens (two screens for each pump, and SG 3 is equipped with six screens (two screens for each pump). The trays are 6 feet wide for Units 1 and 2, and 8 feet wide for Unit 3. The wire-mesh screens for all three units are 0.105 inch (number 12 wire and mess gauge) with 3/8-inch square-mesh openings.

Under normal operating conditions, the screens for both LP1 and SGP are rotated and washed (back washed) with high pressure water. The wash water and debris flow into a sluiceway (collection trough), which then gravity flows to sumps that contain collection baskets. Wash water for all units is returned to the intake embayment in front of the respective units.

LP1 and SGP may operate continuously; however, their intake flows vary with electrical demand. The pumps do not have variable flow capacity but operate at maximum capacity when on.

Section 2(b)(ii): Engineering Calculations

Calculations are based primarily on pump curves. See Attachment LP1-TECH-11 for the pump curves of the pumps listed above.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 30, 2015

Mr. Bill Steinhauser, P.E., Manager
Environmental Affairs
Lower Colorado River Authority
P.O. Box 220
Austin, Texas 78767-0220

Re: Request for approval of determination of closed-cycle recirculating system relevant to the Clean Water Act 316(b) requirements for Lower Colorado River Authority (LCRA) Lake Bastrop Reservoir

Dear Mr. Steinhauser:

This letter is in response to your letter dated, August 18, 2015, requesting approval of a designation of a closed-cycle recirculating system (CCRS) as stipulated in 40 Code of Federal Regulations (CFR) §125.92(c) for Lake Bastrop Reservoir.

The documentation submitted with the request includes the following:

(1) cover letter including information on Lake Bastrop Reservoir;

(2) the Certificate of Adjudication for water rights issued by the TCEQ with the most recent Amendment granted on February 10, 2014 indicating that the reservoir was built for industrial cooling water purposes; and,

(3) a statement in the cover letter indicating that the reservoir cooling system is designed to minimize make-up flows and, because it is a reservoir system, essentially eliminates blowdown and drift as required in 40 CFR §125.92(c).

Based upon the information provided and in accordance with 40 CFR §125.92(c), Lake Bastrop Reservoir is approved for designation as a CCRS relevant to compliance with the Federal Clean Water Act 316(b) regulation.

Please be advised that, at this time, the approval of a designation for a CCRS for Lake Bastrop Reservoir only indicates that this CCRS system meets Best Technology Available (BTA) for impingement as identified in 40 CFR §125.92. BTA for entrainment will be addressed at a later time.

Figure 4: TCEQ Letter to LCRA Regarding CCRS

Additionally, approval of Lake Bastrop Reservoir as a CCRS does not address information requirements to be submitted with a wastewater discharge permit application outlined in 40 CFR §122.21(r). Based upon Lake Bastrop Reservoir being approved as a CCRS, you may request, under separate letter, some, or all, of the application information requirements in 40 CFR §122.21(r) be waived.

The cover letter requests confirmation that the cooling water intake structures which pump water from Lake Bastrop into the Lost Pines Power Park (LPPP) is the single point of compliance under 40 CFR Part 125, Subpart J for both the Sim Gideon and Lost Pines Unit 1 facilities which are part of the LPPP. Water Quality Division staff have reviewed this request and concur that the intake structure on Lake Bastrop supplying cooling water for the LPPP should be the single point of compliance under 40 CFR Part 125, Subpart J.

If you have any questions or comments regarding the contents of this letter please contact me at 512-239-4591 or via email at Lynda.Clayton@tceq.texas.gov.

Sincerely,

Lynda Clayton, Team Leader
Water Quality Assessment Team
Water Quality Division
Texas Commission on Environmental Quality

Figure 4 (continued): TCEQ Letter to LCRA Regarding CCRS

SECTION 3: SOURCE WATER PHYSICAL DATA

Section 3(b)(i): Narrative Description of the Source Water for CWIS.

Lake Bastrop (CWIS for LP1 and SGP): Lake Bastrop was constructed in 1965 to provide cooling water for SGP. The reservoir is a 906-acre impoundment of Spicer Creek, a tributary of the Colorado River in north-central Bastrop County. The reservoir has a drainage area of 9 square miles and a shoreline length of 16 miles and is located in the Oak Woods and Prairies ecoregion. The maximum depth of the lake is 60 feet. Lake depths and contours are shown in **Figure 5**. The reservoir is located in an ecological area known as the Lost Pines, which covers a 70-square-mile area, comprised of loblolly pine forests. Normal operating elevation of Lake Bastrop is approximately 450 feet (ft) mean sea level (msl). Initially, make-up water was periodically pumped from the Colorado River to maintain the reservoir level. However, since February 2014, groundwater wells are the primary source of make-up water for Lake Bastrop. LCRA has a water quality program that tracks surface water temperature for Lake Bastrop. This data is provided on-line at the link: http://waterquality.lcra.org/. The Lake Bastrop data show that between 2000 and 2023, average temperature for Lake Bastrop is 77.2 degrees Fahrenheit, minimum temperature in this time period is 52.2 degrees Fahrenheit, and maximum temperature in this time period is 96.8 degrees Fahrenheit.

Colorado River (alternative make-up water source for CWIS): Initially, make-up water was periodically pumped from the Colorado River to maintain the Lake Bastrop reservoir level. The Colorado River begins in Dawson County in West Texas and travels approximately 600 miles southeast to the Matagorda Bay on the Gulf of Mexico. TPWD provides a description of the 38-mile stretch of river between FM 969 and Highway 71 (near Smithville) that is entirely within Bastrop County and is the part of the Colorado River where the LP1 and SGP river pump station is located. See **Figure 6**. The river pump station is located in the northern part of this section, in a bend of the Colorado River named Powel Bend. In this part of the river, north of Bastrop, vegetative types consist of elm, willow, and sycamore, and various aquatic plants are found in the riverbed. The Lost Pines, a section of pines that have become isolated from the East Texas piney woods, are found along the river in several places between Bastrop and Smithville. Sand and gravel compose the river bottom and sand and gravel bars appear frequently. The river, along this section, is wide, and water flow is consistent, but slow. There exist no difficult rapids of hazardous places on this section of the river, although a few minor rapids are found.

Source: TPWD website: "An Analysis of Texas Waterways: A Report on the Physical Characteristics of Rivers, Streams, and Bayous in Texas"

Section 3(b)(ii): Narrative of Source Water's Hydrological and Geomorphological Features

Lake Bastrop: Lake Bastrop is a 906-acre impoundment of Spicer Creek, a tributary of the Colorado River. LCRA is the controlling authority of the reservoir. Normal operating elevation of Lake Bastrop is approximately 450 feet. The maximum depth of the lake is 60 feet. The shoreline development index is 10.5. The TPWD has a fisheries management plan for the lake to protect and improve sport fishery and regularly publishes survey reports. Important sport fish at Lake Bastrop include

Largemouth Bass and Channel Catfish. Sport fish have been managed with statewide regulations. Underwater contours of the lake are shown in **Figure 5.** According to TPWD, aquatic plants offer excellent fish habitat and consistently meet optimal levels for maintaining fish production for phyllophyte species.

Sources: 2018 TPWD Inland Fisheries Survey Report for Lake Bastrop and TPWD website (accessed April 8, 2024).

Colorado River: See Section (3)(b)(i).

Section 3(b)(iii): Scaled Drawings of Physical Configuration

Lake Bastrop:

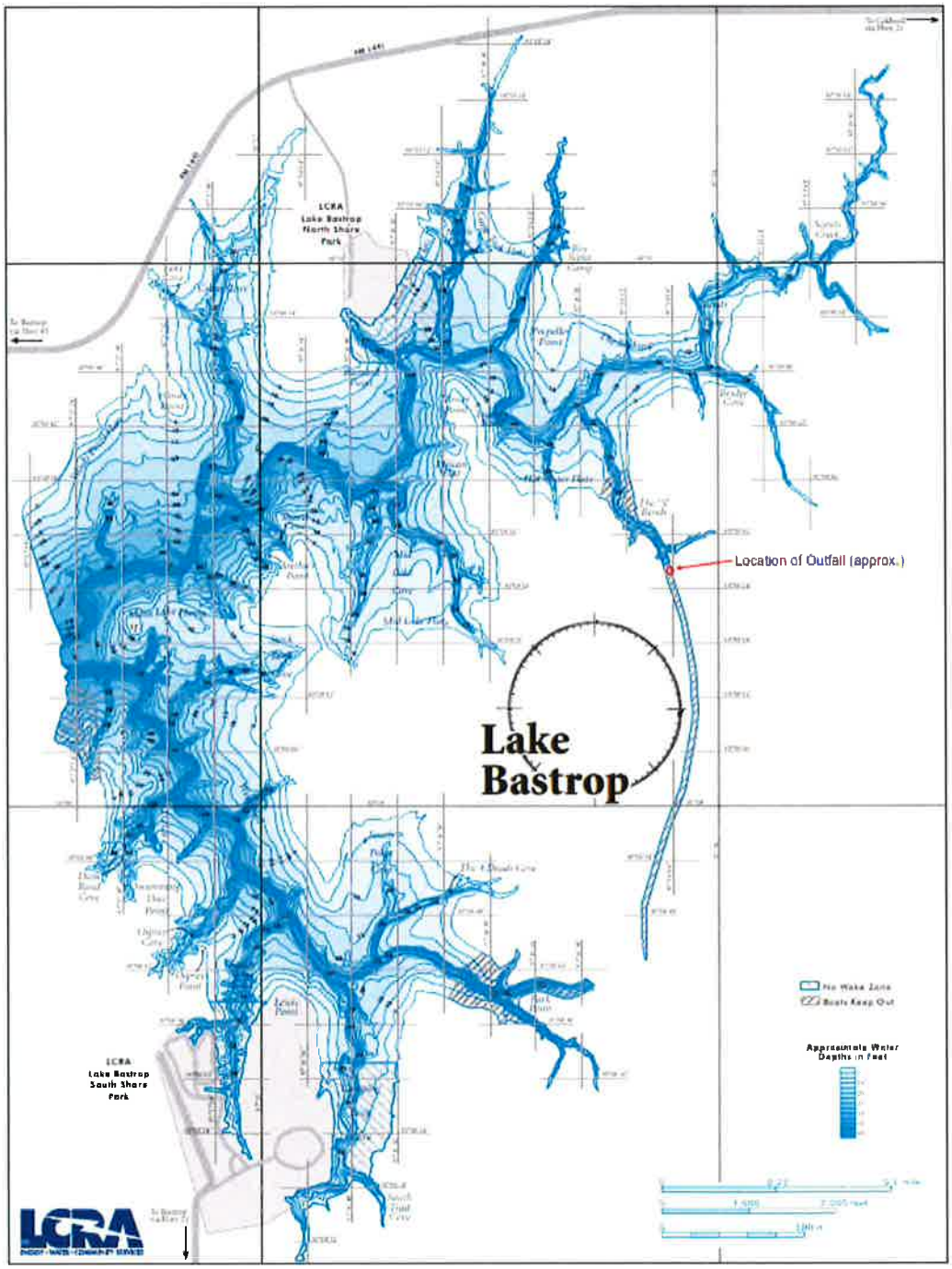

Figure 5: Lake Bastrop Contour Map
(Source: Map Section of LCRA Website)

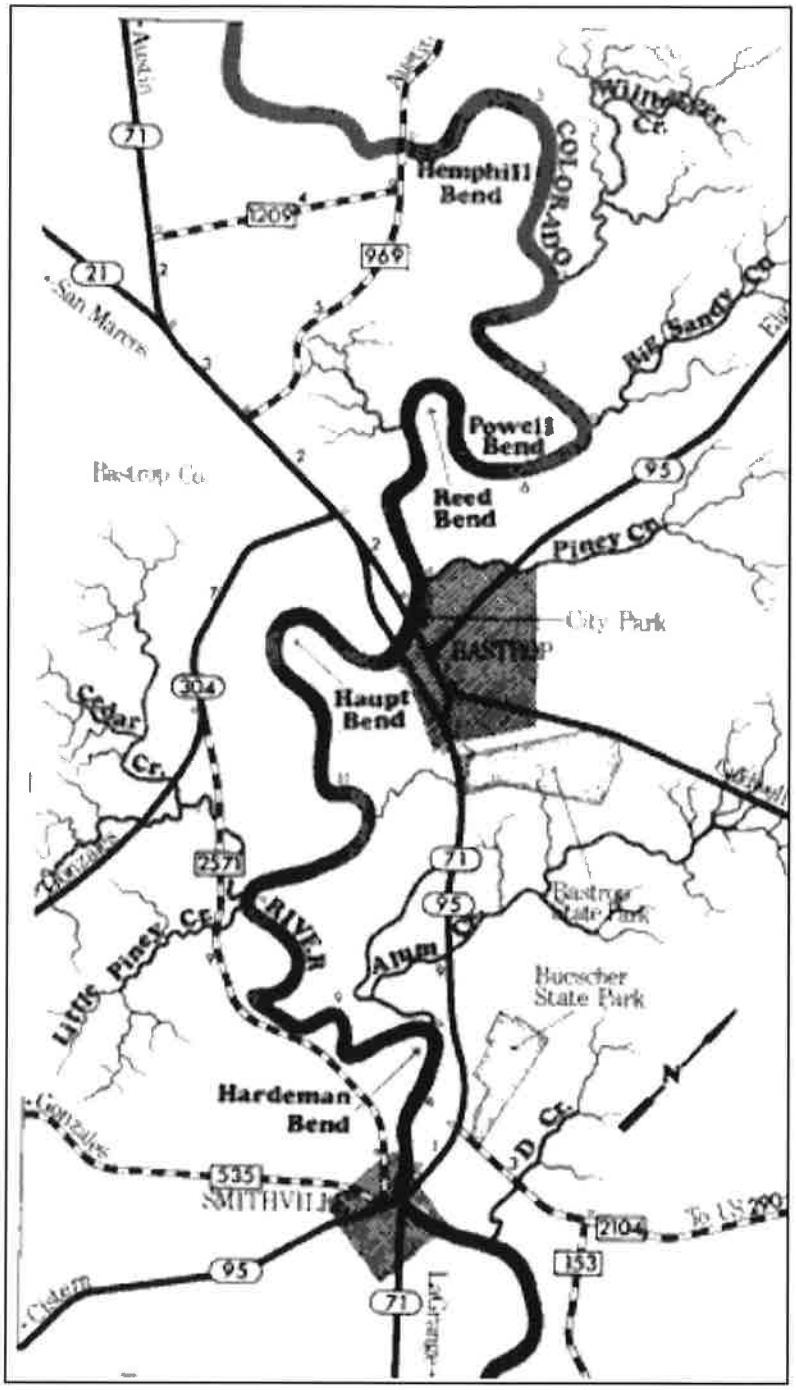

Figure 6: General map between FM 969 to State Hwy 71 near Smithville (Bastrop County)

(Source: TPWD website: "An Analysis of Texas Waterways: A Report on the Physical Characteristics of Rivers, Streams, and Bayous in Texas")

Section 3(b)(iv): Studies related to Intake Area of Influence

No physical studies were found in plant records. The LCRA performed an Impingement Monitoring Report (dated September 2007) at LP1 and SGP.

SECTION 4: OPERATIONAL STATUS

The following section discusses LP1 only. SGP operational information will be discussed in the industrial wastewater discharge permit application for SGP.

Section 4(a)(i): Description of Operating Status

LP1 began commercial operation in 2001. The chart below shows the capacity utilization rate (ratio of actual generation divided by maximum possible generation)for the last five years. LP1 operates based on the demand of the Texas electric grid in the Electric Reliability Council of Texas.

Lost Pines 1 Power Plant Capacity Utilization Rate	
Date	**Capacity Utilization Rate (%)**
2019	54
2020	61
2021	43
2022	68
2023	71

Section 4(a)(ii): Description of Outages

LP1 has not experienced any extended or unusual outages that significantly affect current data for capacity factor, flow, impingement, or entrainment.

Section 4(a)(iii): Capacity Utilization Rate

LP1 operating unit do not have a capacity rate of less than 8% averaged over a contiguous period of 2 years within the last 5 years.

Section 4(a)(iv): Major Upgrades

LP1 has not had any major upgrades in the last 15 years.

Worksheet 11.1: Impingement Mortality

SECTION 2: Impingement Compliance Technology Information

Section 2(a)(i): CCRS

LP1 and SGP currently replenish water losses to Lake Bastrop with groundwater wells; however, because the river pump station can be used for backup use, it is included here.

1. CWIS ID: River Pump Station (Make-up)

2. 12 Months of Inflow (Daily) Data:

   The river pump station has not withdrawn water in the last 12 months. Groundwater wells currently replenish water losses to Lake Bastrop. The river pump station could be used as a backup for the groundwater wells.

3. Physical or operational measures taken to minimize make-up withdrawals:

   The primary method for minimizing make-up withdrawals from the river pump station is the use of groundwater wells. The river pump station has not been used for water make-up purposes since 2014.

Bastrop Reservoir

2018 Fisheries Management Survey Report

PERFORMANCE REPORT

As Required by

FEDERAL AID IN SPORT FISH RESTORATION ACT

TEXAS

FEDERAL AID PROJECT F-221-M-3

INLAND FISHERIES DIVISION MONITORING AND MANAGEMENT PROGRAM

Prepared by:

Mukhtar Farooqi, Assistant District Management Supervisor
and
Marcos De Jesus, District Management Supervisor

Inland Fisheries Division
San Marcos/Austin District, San Marcos, Texas

Carter Smith
Executive Director

Craig Bonds
Director, Inland Fisheries

July 31, 2019

Contents

Survey and Management Summary

Fish populations in Bastrop Reservoir were surveyed in 2018 using electrofishing and tandem hoop netting. Historical data are presented with the 2018 data for comparison. This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

Reservoir Description: Bastrop Reservoir is a stable-level 906-acre impoundment of Spicer Creek, a tributary of the Colorado River, and is located northeast of the City of Bastrop, Bastrop County, Texas. The dam was constructed in 1965 to supply water for cooling a natural-gas-fired power plant operated by the Lower Colorado River Authority (LCRA). The reservoir has a shoreline development index of 10.5 and lies within a unique ecological area known as the Lost Pines, a 70 square mile area of the Post Oak Savannah ecological area comprised of loblolly pine forests.

Management History: Important sport fish include Largemouth Bass and Channel Catfish. Florida Largemouth Bass were last stocked in Bastrop Reservoir in 1992 to increase Florida Largemouth Bass genetic influence. A 14- to 21-inch slot length limit and a 5-fish daily bag limit (one greater than 21 inches) for Largemouth Bass was implemented in 1993.

Fish Community

- **Prey species:** Bluegill was the dominant prey species, with Gizzard Shad, Threadfin Shad, and other sunfish species available as forage.
- **Channel Catfish:** The Channel Catfish population continued to have few fish available to anglers, resulting in poor fishing success. However, abundance and other population characteristics improved in 2018.
- **Largemouth Bass:** Largemouth Bass were abundant, especially below the slot limit. Individuals within the slot limit were less abundant. None were found over the slot limit.

Management Strategies: The reservoir should continue to be managed under current regulations. The harvest of Largemouth Bass less than 14 inches in length is promoted when possible. Consider an alternative Largemouth Bass regulation that could address the overabundance of smaller fish. Aquatic plant coverage is monitored annually. Inform the public about the negative impacts of aquatic invasive species. Conduct a year-long creel survey in 2020-2021, tandem hoop netting in summer 2022, and electrofishing in fall 2022.

Introduction

This document is a summary of fisheries data collected from Bastrop Reservoir in 2018. The purpose of the document is to provide fisheries information and make fisheries management recommendations to protect and improve the sport fishery. While information on other species of fishes was collected, this report deals primarily with major sport species and important prey species. Historical data are presented with the 2018 data for comparison.

Reservoir Description

Bastrop Reservoir is a stable-level 906-acre impoundment of Spicer Creek, a tributary of the Colorado River, and is located northeast of the City of Bastrop, Bastrop County, Texas. The dam was constructed in 1965 to supply water for cooling a natural-gas-fired power plant operated by the Lower Colorado River Authority (LCRA). The reservoir has a shoreline development index of 10.5 and lies within a unique ecological area known as the Lost Pines, a 70 square mile area of the Post Oak Savannah ecological area comprised of loblolly pine forests. Bastrop Reservoir was eutrophic with a mean TSI chl-*a* of 63.5, (Texas Commission on Environmental Quality 2018). Habitat at time of sampling consisted mainly of standing timber, native submerged aquatic vegetation, primarily eel grass, and non-native hydrilla. Other descriptive characteristics for Bastrop Reservoir are listed in Table 1.

Angler Access

At the time of survey, Bastrop Reservoir had two public boat ramps and no private boat ramps. The two public ramps, North Shore Park and South Shore Park were controlled by the LCRA and required entrance fees. Additional boat ramp characteristics are in Table 2. Public bank access included a fishing pier and dock located in each park. A fish-cleaning station is also available at the South Shore Park.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (De Jesus and Farooqi 2015) included:

1. Promote the harvest of sub-slot bass on Bastrop Reservoir using signage at the boat ramps, and continue to manage the fishery under existing regulations.

   Action: Although signage has not been installed yet, sub-slot harvest has been promoted through interactions with anglers and park staff. As a result, the Texas Tournament Zone (TTZ) organized a tournament designed to harvest sub-slot bass.

2. Conduct an additional tandem hoop netting survey in summer 2016 to replicate our effort during the recommended sampling season.

   Action: Tandem hoop netting was conducted in the summer of 2016 and 2018.

3. Continue annual aquatic vegetation monitoring.

   Action: Aquatic vegetation surveys were conducted annually from 2015 to 2018.

4. Continue to engage partners and the public about the negative impacts of aquatic invasive species using print media, social media, and public engagements.

Action: Outreach efforts have included social media, print media, public presentations, and one-on-one interactions with constituents. To reduce the potential spread of zebra mussels boaters are required to “clean, drain, and dry” their vessel and associated equipment.

Harvest regulation history: Sport fish in Bastrop Reservoir have been managed with statewide regulations, except for a special slot length limit regulation for Largemouth Bass. The 14- to 21-inch slot-length limit (with only one being harvestable over 21 inches) was implemented in 1993 to improve the population size structure. Current regulations are found in Table 3.

Stocking history: Bastrop Reservoir has not required stocking with any species since 1997, when Channel Catfish were stocked to supplement the population. Florida Largemouth Bass were introduced starting in 1983 to increase Florida Largemouth Bass genetic influence. The complete stocking history is in Table 4.

Vegetation/habitat management history: Bastrop Reservoir has had a diverse and dynamic submersed aquatic vegetation community history. Aquatic plants offered excellent fish habitat and consistently met optimal levels for maintaining fish production for phylophitic species (Durocher et al. 1984, Dibble et al. 1996). The exotic species Hydrilla has been present in the reservoir and has been monitored closely with annual surveys to prevent operational issues at the power plant. Other exotics, Eurasian water milfoil and slender naiad remained present in the reservoir; though haven't presented operational concerns.

Water transfer: There are no inter-basin water diversion structures at Bastrop Reservoir.

Methods

Surveys were conducted to achieve survey and sampling objectives in accordance with the objective-based sampling (OBS) plan for Bastrop Reservoir (TPWD unpublished). Primary components of the OBS plan are listed in Table 5. All survey sites (Appendix A) were randomly selected and all surveys were conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2017).

Electrofishing – Largemouth Bass, sunfishes, Gizzard Shad, and Threadfin Shad were collected by electrofishing (1 hour at 12, 5-min stations). Catch per unit effort (CPUE) for electrofishing was recorded as the number of fish caught per hour (fish/h) of actual electrofishing.

Tandem hoop nets – Channel Catfish were collected using 18 tandem hoop-net series at 18 stations. Nets were baited with soap and deployed for 2-night soak durations. CPUE for tandem hoop netting was recorded as the number of fish caught per tandem hoop net series (fish/series).

Statistics – Sampling statistics (CPUE for various length categories), structural indices [Proportional Size Distribution (PSD), terminology modified by Guy et al. 2007], and condition indices [relative weight (W_r)] were calculated for target fishes according to Anderson and Neumann (1996). Index of Vulnerability (IOV) was calculated for Gizzard Shad (DiCenzo et al. 1996). Standard error (SE) was calculated for structural indices and IOV. Relative standard error (RSE = 100 X SE of the estimate/estimate) was calculated for all CPUE statistics.

Habitat – A structural habitat survey was conducted in 2014. Vegetation surveys were conducted annually from 2015 to 2018. Habitat was assessed with the digital shapefile method (TPWD, Inland Fisheries Division, unpublished manual revised 2017).

Results and Discussion

Habitat: A structural habitat survey was last conducted in 2014. The habitat consisted primarily of natural shoreline (Table 6) with emergent native aquatic vegetation (Table 7). Native vegetation covered about 6% of the reservoir's surface area compared to 21.9% coverage by non-native vegetation (Table 7). Non-native Hydrilla has been steadily expanding in coverage from 3.5 acres in 2015 to 199.0 acres in 2018. By contrast, native submerged aquatic vegetation has been steadily decreasing since 2015 from 189.2 acres to 55.0 acres. Other native species were present in the system as well as non-native species. Non-native Eurasian water milfoil *Myriophyllum spicatum* ranged from 21.6 to 27.1 acres from 2015 to 2017, but was not detected in 2018.

Prey species: Gizzard Shad, Threadfin Shad, and Bluegill electrofishing catch rates were 56.0/h, 13.0/h, and 130.0/h, respectively. Index of Vulnerability was very low, indicating that 2% of Gizzard Shad were vulnerable to existing predators. Gizzard Shad electrofishing CPUE has been consistently low in recent surveys (Figure 1). In 2018 the majority of Gizzard Shad were in the 10- to 15-inch range. Threadfin Shad catch rate was low in 2018 (13.0/h) and in 2014 (1.0/h). Total CPUE of Bluegill in 2018 was 130.0/h and has been in decline in recent surveys; CPUE was 177/h in 2014, 302/h in 2010 (and 290/h in 2008). Bluegill size structure continued to be dominated by smaller individuals, < 5 inches (Figure 2).

Channel Catfish: Bastrop Reservoir has supported a Channel Catfish fishery for years and has been promoted as a prime catfish destination in the district. Gill netting total catch rate for Channel Catfish in 2003, 2007 and 2011 was 9.4/nn, 7.6/nn and 4.4/nn, respectively; with a historical average total catch rate of 6.5/nn since 1998 (De Jesus and Magnelia 2011). However, a declining trend was noticeable. In addition, some anglers expressed concern about low catch rates. Since 2014-2015, Channel Catfish have been sampled using hoop nets instead of gill nets. Hoop nets have been shown to be an effective means of targeting Channel Catfish and also allows for live release (Cunningham and Cofer 2000 and Wallace et

al., 2011). We believe hoop netting would give a more accurate representation of the Channel Catfish population. The total 2015 catch rate for Channel Catfish was 0.2 fish per series; while stock-size catch rate was 0.1 fish per series. This represented a total of three fish caught over 17 tandem series of two nights and did not meet the objective of collecting a minimum of 50 stock-size (≥11 inches) Channel Catfish for an RSE of 25 with 9 tandem sets. In 2015, the hoop nets were set in the spring for logistical reasons, so seasonal sampling error might have underrepresented the Channel Catfish population. However, the results were similar in 2016 when the nets were set under optimal conditions in summer (Figure 3). We were unable to determine if the observed results in 2016 were representative of the population. Thus, sampling with hoop nets continued in 2018. We collected 40 stock-size fish with an RSE of 28 which was deemed an acceptable level of abundance and precision. Stock CPUE was 2.2 fish per series and CPUE-12 was 2.1. We will continue with hoop netting to more fully evaluate this technique for Channel Catfish in Bastrop Reservoir. Body condition was sub-optimal, as relative weights (W_r) for most length classes fell below 90 (Figure 3).

Largemouth Bass: The electrofishing catch rate of stock-length Largemouth Bass in 2018 was high (133.0/h), as was the case in 2016 (208.0/h) and 2014 (122.0/h) surveys (Figure 3). Since 2014, population size structure has shifted to a greater number of fish below the slot, and fewer, smaller fish within the slot. In 2018, PSD was 39 compared to 60 and 77 in 2016 and 2014 respectively. The catch rate of Largemouth Bass greater than 14 inches (CPUE14) decreased to 21/h in 2018 whereas it was 63/h in 2016 and 75/h in 2014 (Figure 3). Bass above 21-inches in length have been in low abundance (DeJesus and Farooqi 2015) as only one fish (24-inch Largemouth Bass sampled in 2016) was sampled from 2010 to 2018. It is expected that slow growth within the slot length limit makes it rare to see individuals live long enough to surpass the upper slot length of 21 inches. While trophy-size fish are seldom reported or sampled, this fishery has maintained itself as a quality-size, high-catch fishery. While body condition in 2014 was good for the majority of fish (W_r ranged from 94 to 102), it has been gradually declining since then. By 2018, body condition (W_r) was low, ranging from 73 to 87 (Figure 3). The last three surveys have documented high stock-length CPUEs for Largemouth Bass, a steady decline in the number of slot-length fish, low IOV for Gizzard Shad, and a decline in Threadfin Shad CPUE. In addition, the practice of catch-and-release fishing among bass anglers is strong and recommended large-scale harvest of sub-slot fish to help improve population structure has been minimal. Consideration of an alternative harvest regulation (such as a 16-inch maximum) may be appropriate to see if improvement of size structure is feasible. Genetic analysis was not performed in 2018, but historically, Florida Largemouth Bass influence has remained relatively constant as Florida alleles have ranged from 74 to 86%, despite no Florida Largemouth Bass stockings since 1992 (De Jesus and Farooqi 2015).

Fisheries Management Plan for Bastrop Reservoir, Texas

Prepared – July 2019

ISSUE 1: Largemouth Bass growth within the slot has been historically poor, with few fish in older age classes exceeding 18 inches in length. There was only one bass collected during electrofishing surveys since 1998 that exceeded 21 inches in length. The reservoir is showing signs of a crowded Largemouth Bass population.

MANAGEMENT STRATEGIES

1. Conduct a year-long creel survey in 2020-2021 to determine angler harvest preferences and catch characteristics for Largemouth Bass.
2. Conduct an additional fall bass-only electrofishing survey in 2021 to monitor population characteristics.
3. Conduct a category-3 age-and-growth survey in 2021 to determine growth rates with better precision than typical category-2 surveys.
4. Consider changing harvest regulations for Largemouth Bass if predicated by the creel survey, electrofishing survey, and age-and-growth survey data during the next report cycle. Use predictive modeling to assess potential outcomes.
5. Continue to promote harvest of sub-slot bass when possible, collaborating with partners such as TTZ.

ISSUE 2: Hydrilla has expanded significantly since 2015 to cover 22% of the reservoir area. This plant can potentially affect power plant operations if it grows out of control around the intake area. The plant is monitored annually as a Tier II maintenance effort.

MANAGEMENT STRATEGIES

1. Communicate with the LCRA to discuss the current situation and assist with management, if necessary.
2. Continue to monitor aquatic vegetation on an annual basis to monitor the community.

ISSUE 3: Many invasive species threaten aquatic habitats and organisms in Texas and can adversely affect the state ecologically, environmentally, and economically. For example, zebra mussels (*Dreissena polymorpha*) can multiply rapidly and attach themselves to any available hard structure, restricting water flow in pipes, fouling swimming beaches, and plugging engine cooling systems. Giant salvinia (*Salvinia molesta*) and other invasive vegetation species can form dense mats, interfering with recreational activities like fishing, boating, skiing, and swimming. The financial costs of controlling and/or eradicating these types of invasive species are significant. Additionally, the potential for invasive species to spread to other river drainages and reservoirs via watercraft and other means is a serious threat to all public waters of the state.

MANAGEMENT STRATEGIES

1. Cooperate with the controlling authority to post appropriate signage at access points around the reservoir.
2. Educate the public about invasive species through the use of media and the internet.
3. Make a speaking point about invasive species when presenting to constituent and user groups.

Keep track of (i.e., map) existing and future inter-basin water transfers to facilitate potential invasive species responses.

Objective-Based Sampling Plan and Schedule (2019–2023)

Sport fish, forage fish, and other important fishes

Sport fishes in Bastrop Reservoir include Largemouth Bass and Channel Catfish. Known important forage species include Bluegill, Redear Sunfish, Gizzard Shad and Threadfin Shad.

Negligible fisheries

White Crappie: White Crappie were stocked in Bastrop reservoir in 1992 and are present, but population abundance is very low, based on poor captures in historic trap netting surveys. A creel survey in 2004 did not identify directed effort for this species, revealing little interest by anglers to pursue this species at Bastrop reservoir. Sampling for White Crappie is not a priority for the 2019-2023 sampling period.

Blue Catfish: Blue Catfish were stocked in Bastrop Reservoir from 1969 to 1971 and are expected to be present in low abundance. Anecdotal catch reports for this species by anglers in recent years are the only evidence of their existence in the lake. Water conditions at this power plant reservoir do not provide the typical habitat features of lakes where Blue Catfish flourish. Our gill netting surveys since 2006 have failed to collect Blue Catfish specimens. Sampling for Blue Catfish is not a priority for the 2019-2023 sampling period.

Flathead Catfish: Flathead Catfish were present in low abundance, based on gill netting surveys conducted between 1998 and 2011. During this time, CPUE total averaged 0.8 fish/nn, and ranged between 0.2 and 2.0 fish/nn. A creel survey in 2004 did not identify directed effort for this species, revealing little interest by anglers to pursue this species at Bastrop reservoir. Sampling for Flathead Catfish is not a priority for the 2019-2023 sampling period.

Survey objectives, fisheries metrics, and sampling objectives

Largemouth Bass: Largemouth Bass are the most popular sport fish in Bastrop Reservoir based on a 2004 creel survey. The popularity and reputation for quality Largemouth Bass fishing at this reservoir warrant sampling time and effort. Results from a 2004 creel survey showed directed angling effort for Largemouth Bass to be 17 hours/acre and accounted for 69% of the total directed effort. Largemouth Bass are managed with a 14- to 21-inch slot regulation. While few fish grow past the slot, this lake is known for quality fish and good angling catch rates (0.77/h in 2004). Trend data on CPUE, size structure, and body condition have been collected biennially since 2002 with fall nighttime electrofishing. The population exhibits good relative abundance, and anglers are anecdotally somewhat satisfied with the

fishing. Most were satisfied with the restrictive harvest regulation in the 2004 creel survey. However, monitoring surveys ever since have revealed a decline in population characteristics. Continuation of biennial trend data in this clear reservoir with night electrofishing in the fall will allow for determination of any large-scale changes in the Largemouth Bass population. A minimum of 12 randomly selected 5-min electrofishing sites will be sampled in fall 2022, but sampling will continue at random sites until 50 stock-size fish are collected and the RSE of CPUE-S is ≤ 25 (the anticipated effort to meet both sampling objectives is 12-15 stations with 80% confidence). Exclusive of the original 12 random stations, three additional random stations will be pre-determined in the event some extra sampling is necessary. If failure to achieve either objective has occurred after one night of sampling and objectives can be attained with 6-12 additional random stations, another night of effort will be expended. A bass-only survey will be conducted in fall 2021, which could be used to supplement a category-3 age-and-growth survey the same fall to collect a target of 200 fish between 5.9 inches and 19.7 inches (10 per inch-group). A year-long creel survey in 2021-2022 will be conducted to gather Largemouth Bass catch characteristics and angler opinions.

Channel Catfish: The 2004 creel survey indicated Channel Catfish angling comprised >3.7% of total angling effort (second to Largemouth Bass). Gill netting total CPUE ranged from 4.4 to 9.4 fish/nn (6.6 fish/nn average) from 2001 to 2011, providing only an average of 32 stock-size and larger fish per survey. We would like to collect information allowing us to monitor size structure and body condition with greater precision. Hoop nets have been shown to be an effective means of targeting Channel Catfish and also allows for live release (Cunningham and Cofer, 2000 and Wallace et al., 2011). We switched from standard gill nets, set overnight to tandem hoop nets set for two nights starting in 2015. We anticipate that setting a minimum of nine tandem hoop nets, with a soak time of two nights, will achieve our sampling objective (50 Channel Catfish ≥11 inches; RSE of CPUE-S ≤ 0.25). A minimum of nine randomly selected tandem hoop netting sites will be sampled in summer 2022, but sampling will continue at random sites until 50 stock-size fish are collected and the RSE of CPUE-S is ≤ 25 (the anticipated effort to meet both sampling objectives is nine stations with 75% confidence). Exclusive of the original nine random stations, nine additional random stations will be pre-determined in the event additional sampling is necessary. If failure to achieve either objective has occurred after one soak session, and objectives can be attained with up to nine additional random stations, another soak session of effort will be expended.

Sunfish and Threadfin Shad: Bluegill, Redear Sunfish, Redbreast Sunfish, Threadfin Shad, and Gizzard Shadwell are the primary forage at Bastrop Reservoir. Like Largemouth Bass, trend data on CPUE and size structure of these sunfish have been collected biennially since 1996. Abundance of Threadfin Shad will also be measured as a function of CPUE during those surveys. Continuation of sampling, as per Largemouth Bass above, will allow for monitoring of large-scale changes in sunfish relative abundance and size structure. Sampling effort based on achieving sampling objectives for Largemouth Bass will result in sufficient numbers of sunfish for size structure estimation (PSD and IOV; 50 fish minimum at 12 randomly selected 5-min electrofishing sites with 80% confidence) but not for relative abundance estimates (RSE ≤ 25 of CPUE-Total; anticipated effort is 25-30 stations). At the sampling effort needed to achieve sampling objectives for Largemouth Bass, the expected RSE for CPUE-T is 30 for sunfish species combined. No additional effort will be expended to achieve an RSE of 25 for CPUE of sunfish. Instead, Largemouth Bass body condition can provide information on forage abundance, vulnerability, or both relative to predator density. Relative weight of Largemouth Bass ≥ 8” TL will be determined from their length/weight data (maximum of 10 fish weighed and measured per inch class).

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Tables and Figures

Table 1. Characteristics of Bastrop Reservoir, Texas.

Characteristic	Description
Year constructed	1965
Controlling authority	Lower Colorado River Authority
County	Bastrop
Reservoir type	Power plant cooling reservoir
Shoreline Development Index	10.5
Conductivity	972 µS/cm

Table 2. Boat ramp characteristics for Bastrop Reservoir, Texas, September 2014. Reservoir elevation at time of survey was 450 feet above mean sea level. This is a stable-level reservoir. Satellite imagery indicated there were no changes in boat ramp characteristics since 2014.

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Elevation at end of boat ramp (ft)	Condition
North Shore Park	30.16571 -97.28069	Y	54	443	Good
South Shore Park	30.14109 -97.28503	Y	36	443	Good; some aquatic vegetation encroaching

Table 3. Harvest regulations for Bastrop Reservoir.

Species	Bag limit	Length limit
Flathead Catfish	5	18-inch minimum
Catfish: Channel and Blue	25	12-inch minimum
Bass: Largemouth	5*	14- to 21-inch slot
Crappie: White and Black Crappie, their hybrids and subspecies	25	10-inch minimum

*Only one may be over 21 inches

Table 4. Stocking history for Bastrop, Texas. Life stages are fry (FRY), fingerlings (FGL), advanced fingerlings (AFGL), adults (ADL) and unknown (UNK). Life stages for each species are defined as having a mean length that falls within the given length range. For each year and life stage the species mean total length (Mean TL; in) is given. For years where there were multiple stocking events for a particular species and life stage the mean TL is an average for all stocking events combined.

Species	Year	Number	Life Stage	Mean TL (in)
Black Crappie x White Crappie	1993	90,400	FRY	0.9
	1994	110,753	FRY	0.9
	1995	103,738	FRY	0.9
	Total	304,891		
Blue Catfish	1969	4,425	UNK	UNK
	1970	4,615	UNK	UNK
	1971	4,644	UNK	UNK
	Total	13,684		
Channel Catfish	1969	5,517	AFGL	7.9
	1970	4,683	AFGL	7.9
	1971	4,610	AFGL	7.9
	1982	500	UNK	UNK
	1990	6,208	ADL	11.2
	1997	8,300	AFGL	7.0
	Total	29,818		
Florida Largemouth Bass	1983	41,713	FGL	2.0
	1984	17,056	FGL	3.0
	1990	90,551	FRY	0.8
	1991	771	ADL	9.0
	1991	90,872	FGL	1.3
	1992	59,509	FGL	1.1
	1992	31,101	FRY	0.9
	Total	331,573		
Green Sunfish x Redear Sunfish	1972	1,980	UNK	UNK
	Total	1,980		
Kemp's Largemouth Bass	1985	46,314	FGL	1.0
	1986	45,400	FGL	1.0

Table 4. Stocking history for Bastrop, Texas. Life stages are fry (FRY), fingerlings (FGL), advanced fingerlings (AFGL), adults (ADL) and unknown (UNK). Life stages for each species are defined as having a mean length that falls within the given length range. For each year and life stage the species mean total length (Mean TL; in) is given. For years where there were multiple stocking events for a particular species and life stage the mean TL is an average for all stocking events combined.

Species	Year	Number	Life Stage	Mean TL (in)
	Total	91,714		
Palmetto Bass (Striped X White Bass hybrid)	1972	1,800	FGL	1.5
	1973	9,760	FGL	1.5
	1974	10,400	UNK	UNK
	1975	9,086	UNK	UNK
	Total	31,046		
Peacock Bass	1978	519	UNK	UNK
	1979	3,234	UNK	UNK
	Total	3,753		
White Crappie	1992	94,577	FRY	0.6
	Total	94,577		

Table 5. Objective-based sampling plan components for Bastrop Reservoir, Texas 2018–2019.

Gear/target species	Survey objective	Metrics	Sampling objective
Electrofishing			
Largemouth Bass	Abundance	CPUE–Stock	RSE-Stock ≤ 25
	Size structure	PSD, length frequency	N ≥ 50 stock
	Condition	W_r	10 fish/inch group (max)
Bluegill [a]	Abundance	CPUE–Total	RSE ≤ 25
	Size structure	PSD, length frequency	N ≥ 50
Gizzard Shad [a]	Abundance	CPUE–Total	RSE ≤ 25
	Size structure	PSD, length frequency	N ≥ 50
	Prey availability	IOV	N ≥ 50
Tandem hoop netting			
Channel Catfish	Abundance	CPUE–stock	RSE-Stock ≤ 25
	Size structure	PSD, length frequency	N ≥ 50 stock
	Condition	W_r	10 fish/inch group (max)

[a] No additional effort will be expended to achieve an RSE ≤ 25 for CPUE of Bluegill and Gizzard Shad if not reached from designated Largemouth Bass sampling effort. Instead, Largemouth Bass body condition can provide information on forage abundance, vulnerability, or both relative to predator density.

Table 6. Survey of structural habitat types, Bastrop Reservoir, Texas, 2014. Shoreline habitat type units are in miles and standing timber is acres. A survey was not completed in 2018, but a review of satellite imagery indicated that very little had changed since 2014.

Habitat type	Estimate	% of total
Bulkhead	1.68 miles	10.0
Bulkhead with boat docks	0.18 miles	1.0
Natural	14.64 miles	84.0
Natural with boat docks	0.02 miles	< 1.0
Rocky	0.87 miles	5.0
Rocky with boat docks	0.03 miles	< 1.0
Standing timber	21.00 acres	2.0

Table 7. Survey of aquatic vegetation, Bastrop Reservoir, Texas, 2015–2018. Surface area (acres) is listed with percent of total reservoir surface area in parentheses.

Vegetation	2015	2016	2017	2018
Native submersed	189.2 (21.8)	157.9 (17.4)	123.4 (13.6)	55.0 (6.1)
Native floating-leaved	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	1.0 (0.1)
Native emergent*	7.0 (< 1.0)	7.0 (< 1.0)	7.0 (< 1.0)	7.0 (< 1.0)
Non-native				
Hydrilla (Tier II)**	3.5 (0.4)	66.0 (7.3)	114.0 (12.6)	199.0 (21.9)
Eurasian watermilfoil (Tier III)**	21.6 (2.5)	26.3 (2.9)	27.1 (2.9)	0.0 (0.0)

* Bulrush coverage changes little over time at Bastrop Reservoir.

**Tier II is Maintenance Response, Tier III is Watch Status.

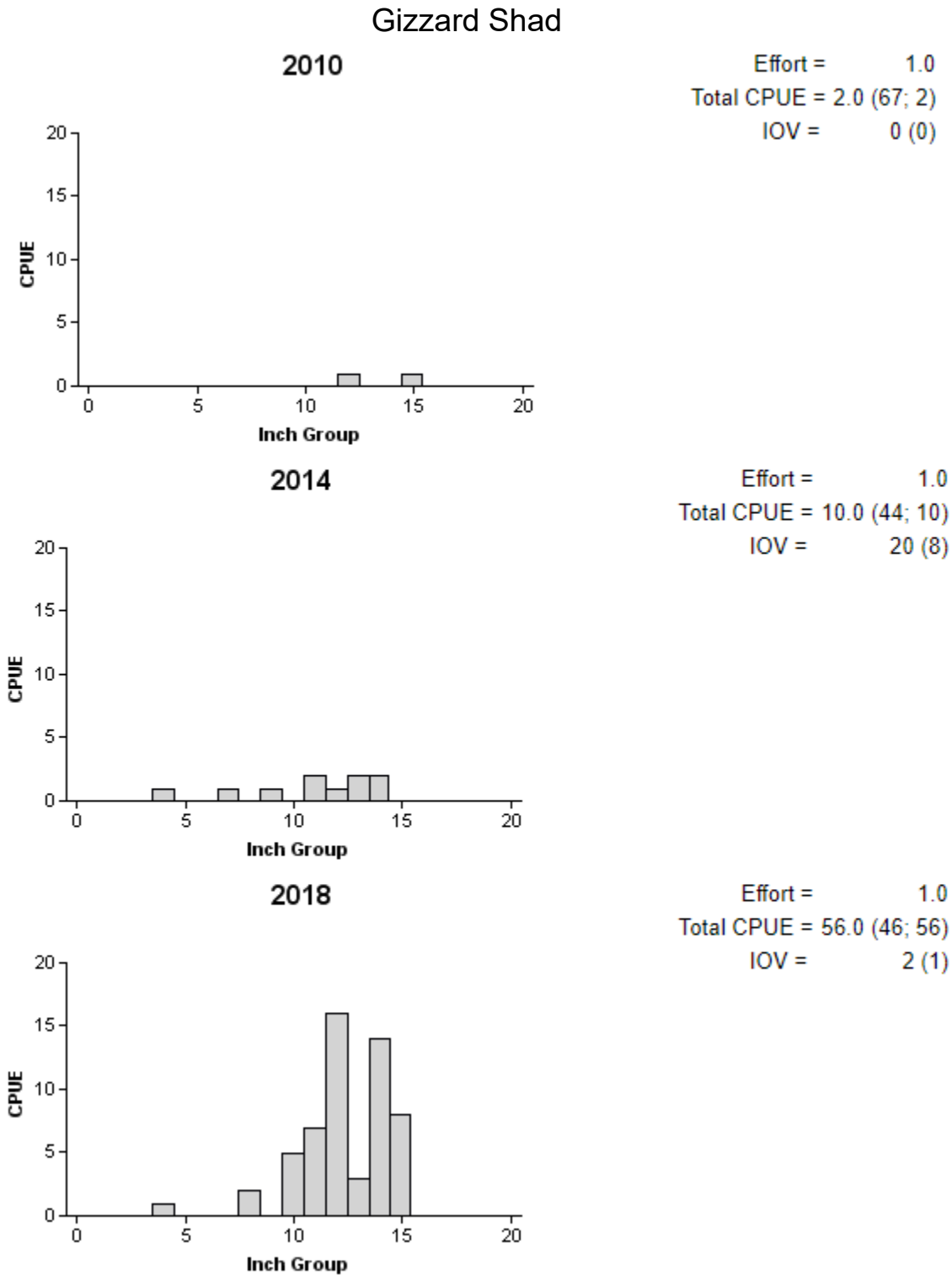


Figure 1. Number of Gizzard Shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Bastrop Reservoir, Texas, 2010, 2014, and 2018.

Bluegill

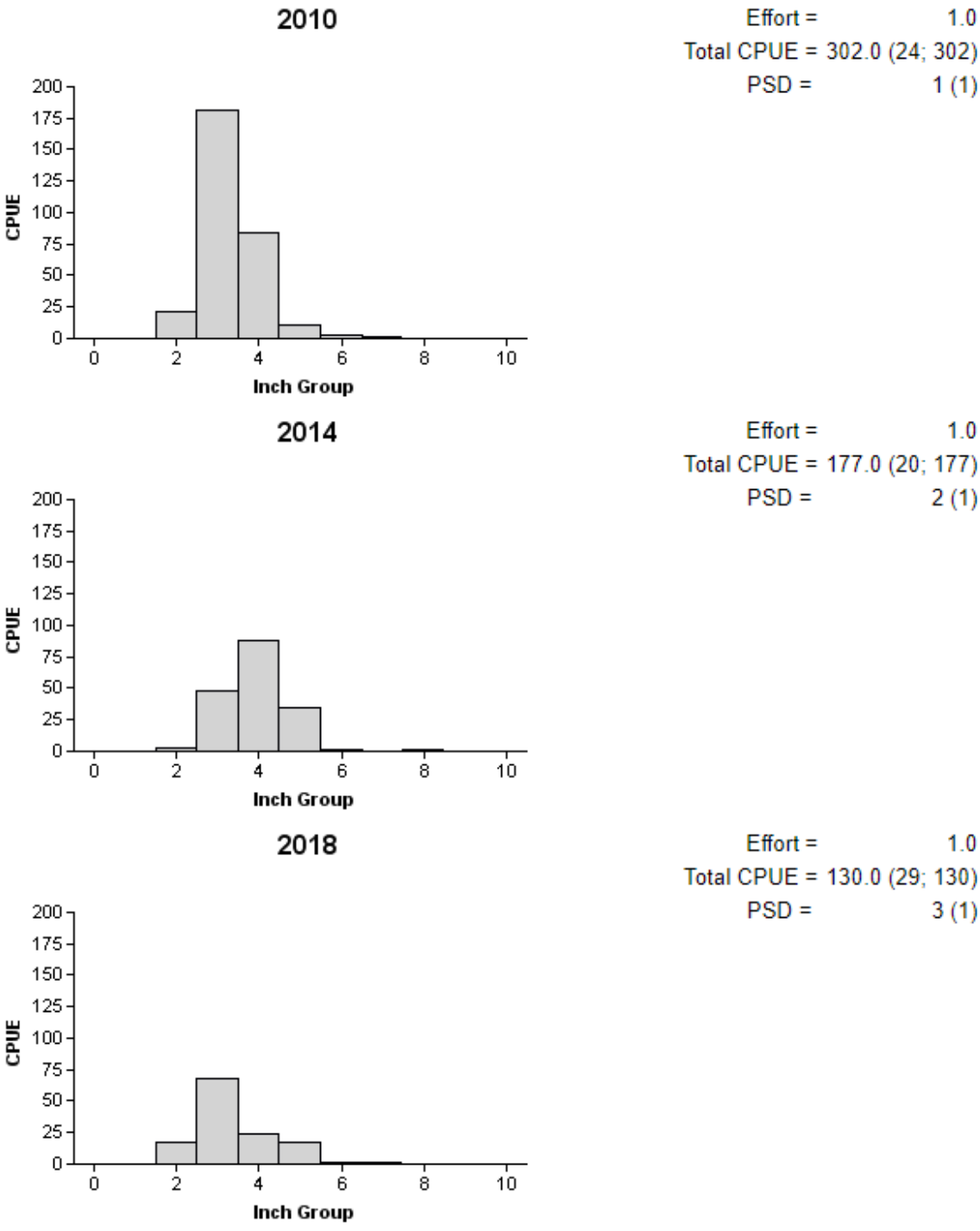


Figure 2. Number of Bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Bastrop Reservoir, Texas, 2010, 2014, and 2018.

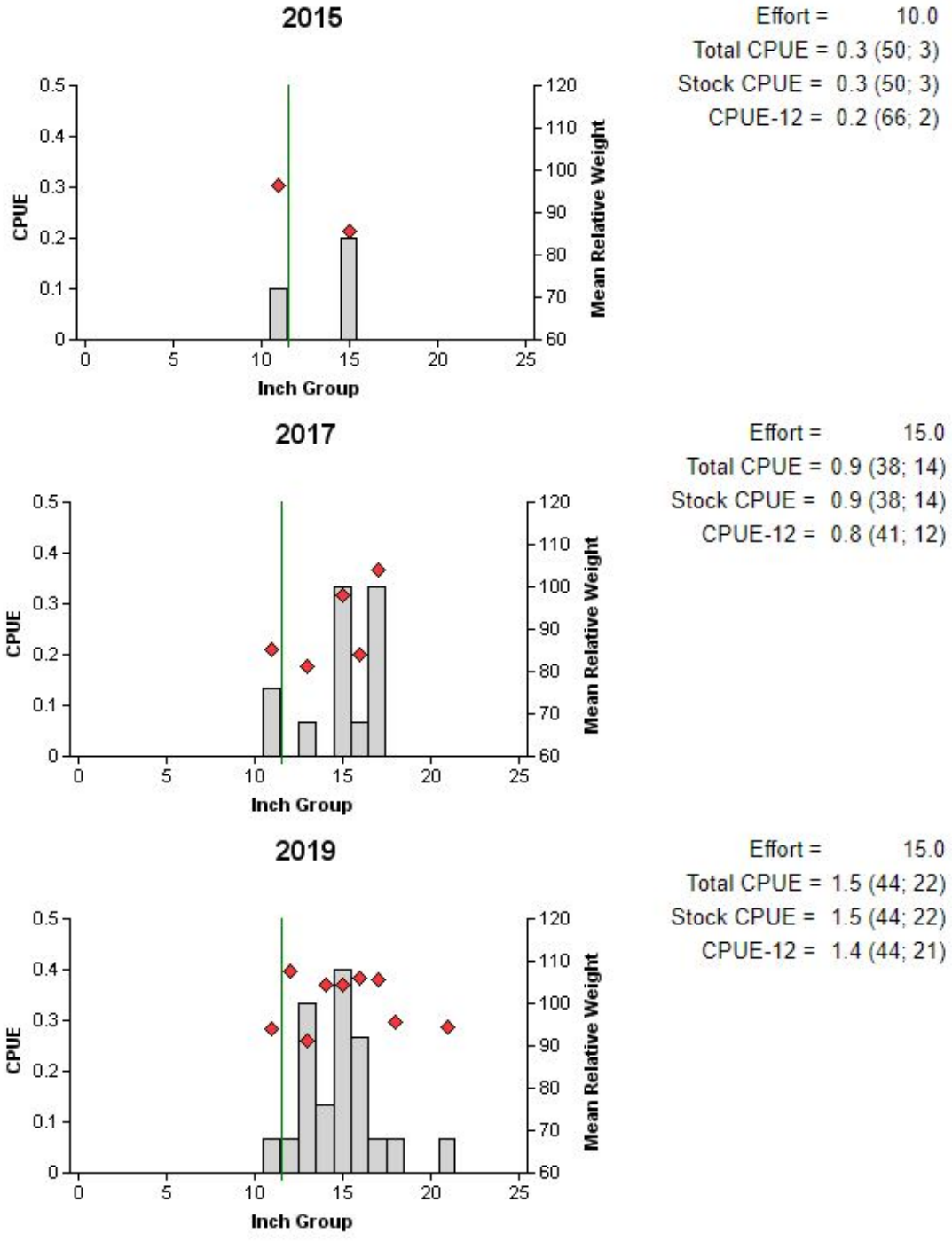


Figure 3. Number of Channel Catfish caught per hoop net series (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for tandem hoop net surveys, Bastrop Reservoir, Texas, 2015 (spring), 2016 (summer) and 2018 (summer).

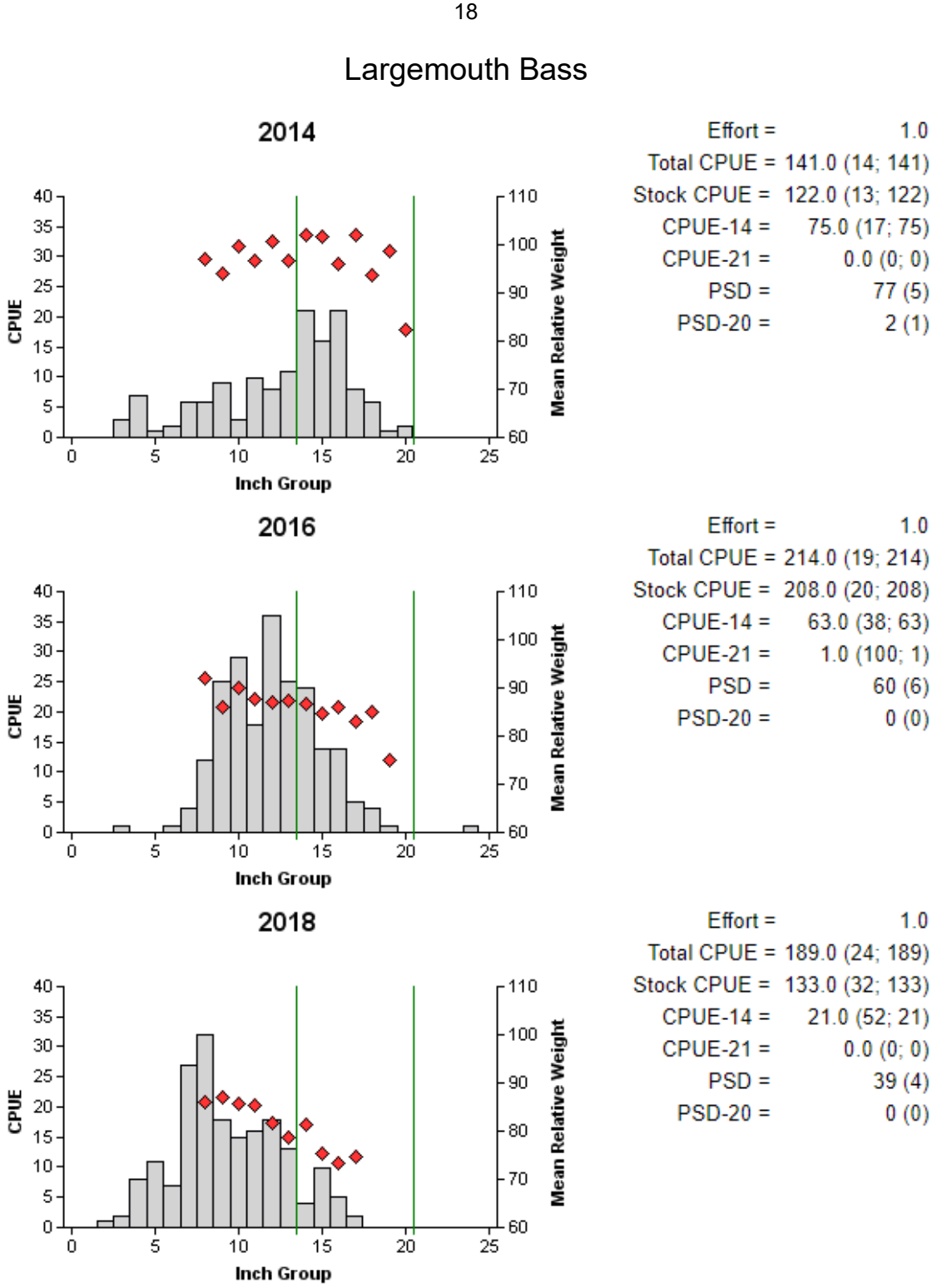


Figure 4. Figure 4. Number of Largemouth Bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Bastrop Reservoir, Texas, 2014, 2016, and 2018. Slot length limit indicated by vertical lines.

Proposed Sampling Schedule

Table 8. Proposed sampling schedule for Bastrop Reservoir, Texas. Survey period is June through May. Baited tandem hoop netting surveys are conducted in the early summer, while electrofishing surveys are conducted in the fall. Standard survey denoted by S and additional survey denoted by A.

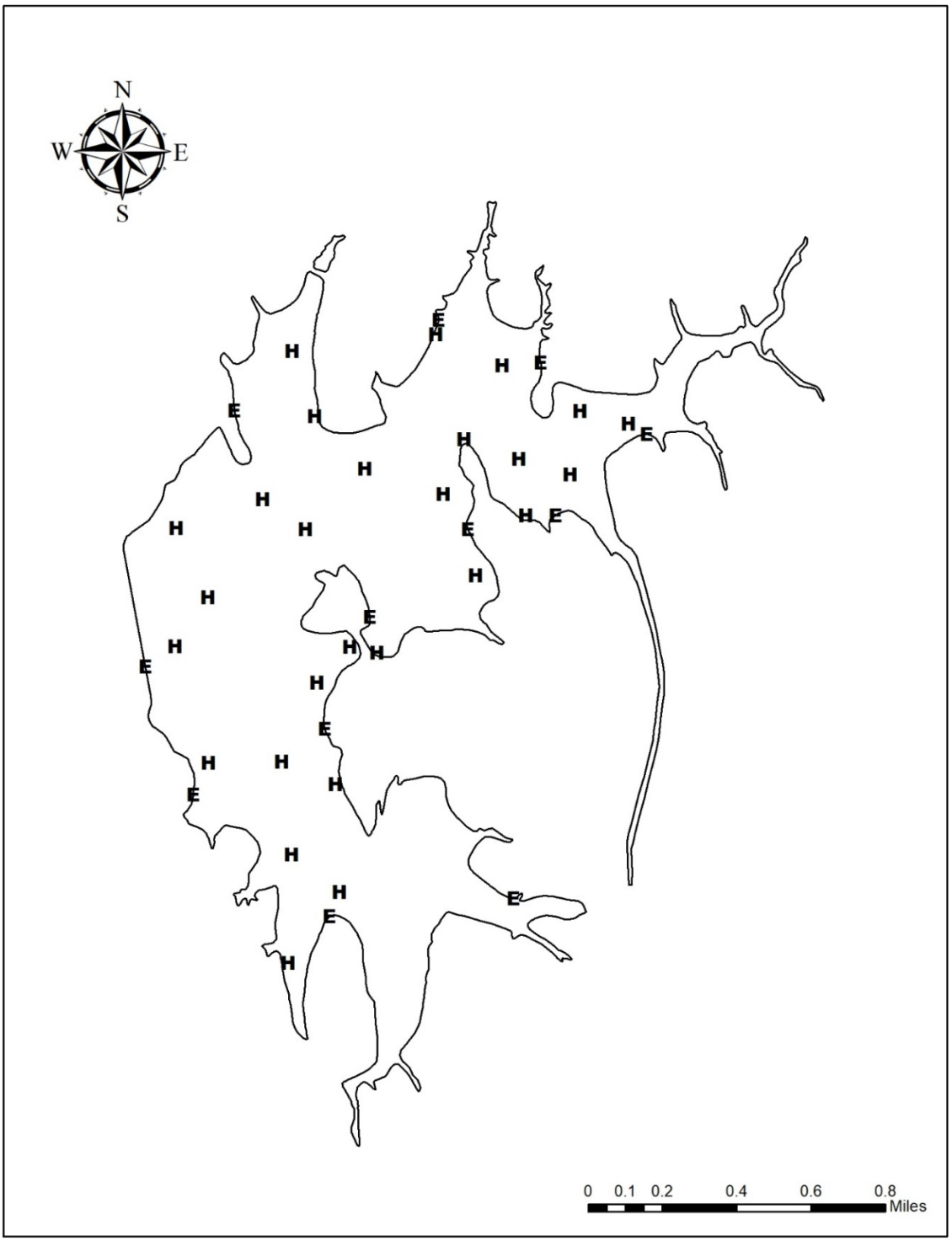
	Survey year			
	2019-2020	2020-2021	2021-2022	2022-2023
Angler Access				S
Structural Habitat				S
Vegetation	A	A	A	S
Electrofishing – Fall		A		S
Baited tandem hoop netting				S
Creel survey		S		
Report				S

APPENDIX A

	Electrofishing		Hoop Netting	
Species	CPUE	N	CPUE	N
Gizzard Shad	56.0	56 (46)		
Threadfin Shad	13.0	13 (29)		
Channel Catfish			2.8	51 (32)
Redbreast Sunfish	3.0	3 (72)		
Bluegill	130.0	130 (29)		
Redear Sunfish	20.0	20 (26)		
Red Spotted Sunfish	6.0	6 (72)		
Largemouth Bass	189.0	189 (24)		

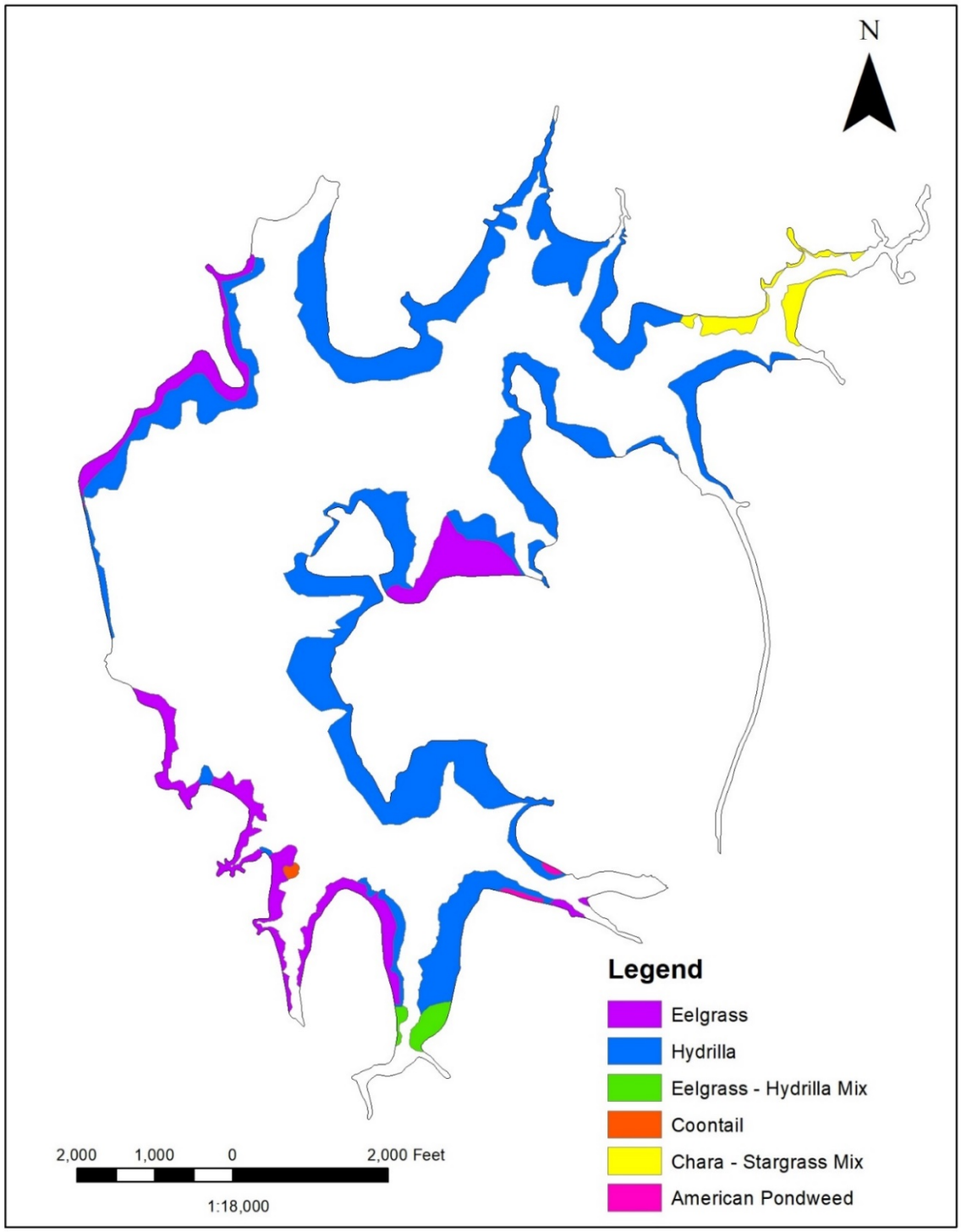
Number (N) and catch rate (CPUE, RSE in parentheses) of all target species collected from all gear types from Bastrop Reservoir, Texas, 2018. Sampling effort was 18 tandem series for hoop netting and 1 hour for electrofishing.

APPENDIX B



Location of sampling sites, Bastrop Reservoir, Texas, 2018. Hoop net and electrofishing stations are indicated by H and E, respectively. Water level was near full pool at time of sampling.

APPENDIX C



Aquatic vegetation survey coverage map for Bastrop Reservoir, Texas, September 2018.

Life's better outside.®

In accordance with Texas State Depository Law, this publication is available at the Texas State Publications Clearinghouse and/or Texas Depository Libraries.

Attachment LP1-TECH-9
Addendum to Source Water Biological Data

SECTION 1: SPECIES MANAGEMENT

Section (1)(c): Federally Listed Species and Critical Habitat Designations

A portion of Bastrop County that includes all of Lake Bastrop is included in the critical habitat designation of the Houston toad (43 FR 4022, 4025, January 31, 1978). However, as discussed below in Section 2(d), no available information indicates any life stages of the Houston toad are or may be present in the portion of Lake Bastrop that is in the vicinity of the cooling water intake structure as that term is defined in, and applies under, the Cooling Water Intake regulations (79 FR 48,300, 48,381, August 15, 2014).

SECTION 2: SOURCE WATER BIOLOGICAL DATA

Section (2)(a): Efforts to Identify Data Sources

The Texas Parks and Wildlife Department (TPWD) manages the fishery in Lake Bastrop and is a significant source for biological data in the impoundment. The TPWD produces a Fisheries Management Survey Report,[1] which is updated approximately every three years. These reports include population indices, fishing regulations, habitat surveys, stocking records, species accounts, and management strategies. The most recent TPWD report available to the public is dated 2018 and is available on the TPWD website.

LCRA has used the TPWD survey information as a basis for developing biological information required by the 316(b) regulation when describing Lake Bastrop. When new data has been collected, such as for the development of the impingement monitoring report, this information has been provided in LCRA reports. In addition to the TPWD surveys, the following LCRA reports have been developed for 316(b):

- Proposal for Information Collection, Lost Pines Power Park, Bastrop County, Prepared by PBS&J (dated June 2005);
- Lost Pines Power Park Impingement Monitoring Data Report, report prepared by PBS&J (dated September 2007); and
- Supplemental Information for 316(b) BTA Determination for Sim Gideon/Lost Pines Power Park (LPPP)-(Submitted with the SGP and LP1 applications on February 27, 2009).

The June 2005 PBS&J document addresses fishery information for Lake Bastrop as follows: "the fisheries in Lake Bastrop are routinely monitored by TPWD, which provides good information regarding the species composition of the reservoir. Searches of the University of Texas Library, Texas A&M University Library, Texas State University Library, and the TCEQ archives were conducted to obtain any additional fisheries studies of Lake Bastrop. Outside of the TPWD studies, the only other published studies located

[1] This document is "Performance Report" required by the Federal Aid in Sport Fish Restoration Act.

for Lake Bastrop were by Yeh (1971) and Day (1981)." These two studies are discussed in the 2005 document.

Additionally, LCRA has obtained information on threatened, endangered, or other protected species from the sources referenced in Section (2)(d) below.

Section (2)(b)-(c):

The TPWD report and the LCRA documents listed above generally provide the best information known to be available that is requested in these sections.

Section (2)(d):

There are no threatened, endangered, or other protected species that might be susceptible to impingement or entrainment at the Lost Pines 1 or Sim Gideon Power Plant cooling water intake structures.

Houston toads depend on both terrestrial and aquatic habitats. Terrestrial habitat is used by the Houston toads for sheltering, feeding, and dispersal.[2] Houston toads require aquatic habitats to breed and reproduce. "Houston toads are known to breed in small pools of water and ephemeral ponds. [] They also have been heard calling from or have been captured in ditches, lakes, puddles in roads, moist areas in yards, flooded pastures, potholes, streams, stock tanks and permanent ponds." (USFWS 2022 at p. 11). "Survival of eggs, tadpoles and emerging juveniles may be low in permanent water bodies, because they are more likely to harbor predators, like birds, mammals, snakes, turtles, fish, aquatic invertebrates and bullfrogs." (USFWS 2022 at p. 10).

LCRA is not aware of the reason that the entire Lake Bastrop was included in the habitat as designated in 1978. However, the "action area" for purposes of 40 CFR Section 125.95(f) and 40 CFR Section 122.21(r)(4) is the vicinity of CWIS and the intake embayment. As described in "Supplemental Information for 316(b) BTA Determination for Sim Gideon/Lost Pines Power Park (LPPP),"[3] Lake Bastrop was created in 1965 to provide water for Sim Gideon Power Plant by impounding Spicer Creek, a Colorado River tributary in north-central Bastrop County. Lost Pines 1 Power Plant is located adjacent to Sim Gideon Power Plant and went on-line in 2001. Lost Pines 1 also withdraws water from Lake Bastrop. All units at Sim Gideon/Lost Pines Power Park share an intake embayment on the southeast arm of the reservoir, and the intake embayment ranges from 16 feet deep in front of Sim Gideon Power Plant to 19 feet deep in front of Lost Pines 1 Power Plant. Plant drawings show that the circulating water intake pipe (when the lake is at operating elevation of 450 feet) withdraws water from approximately 15 feet below the lake surface in front of the Lost Pines 1 Power Plant intake. Thus, notwithstanding that Lake Bastrop was included in the critical habitat designation for the Houston toad, available information

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[2] U.S. Fish and Wildlife Service (USFWS), Revised Recovery Plan for the Houston Toad (*Anaxyrus [=Bufo] houstonensis*) (May 2022), at 10-12, *available at* https://ecos.fws.gov/docs/recovery_plan/Houston%20Toad%20Final%20Revised%20Recovery%20Plan_May%202022_508_RD%20signed.pdf.

[3] Application submitted to TCEQ in 2009

indicates that Lake Bastrop within the vicinity of the intake is not suitable habitat for Houston toads. Accordingly, withdrawal of water into the power plant's circulating water pipes at 15 feet below the lake surface would not have any impacts on the Houston toad.

This is supported by information that has been previously reviewed by TCEQ, EPA, and USFWS. These include:

(1) Appendix B (Locations of Federally Endangered and Threatened Aquatic and Aquatic-Dependent Species in Texas) of the Procedures to Implement the Texas Surface Water Quality Standards (RG-194, June 30, 2010). Neither Spicer Creek nor Lake Bastrop were identified as water bodies of concern for the Houston Toad within Segment No. 1434 of the Colorado River Basin.

(2) USFWS Final Biological Opinion on the U.S. Environmental Protection Agency's Section 316(b) rulemaking (dated May 19, 2014).[4] USFWS's consultation considered nearly 200 species "based on the overlap between the species' habitat and facilities with CWISs, and/or the level of effect on the species from CWISs that may result in incidental take." Consultation on the Houston toad was not required.

(3) Lost Pines Power Park Impingement Monitoring Data Report. Between October 2005 and September 2006, LCRA performed an impingement study at the CWIS of the Sim Gideon and Lost Pines 1 Power Plants. No life stages of Houston toads were recorded or collected.

Section (2)(e): Public Participation

N/A

Section (2)(f):

N/A.

Section (2)(g):

Threadfin shad showed high mortality in the Lost Pines Power Park Impingement Monitoring Data Report (dated September 2007), which is a characteristic of a fragile species.

[4] Issued by the USFWS and the National Marine Fisheries Service based on consultation with EPA, pursuant to the Endangered Species Act

ATTACHMENT LP1-TECH-10
Existing Entrainment Studies

The Lost Pines 1 Power Plant (LP1) is a natural gas-fired combined cycle electric power generation facility located on Lake Bastrop in Bastrop, Texas. Lake Bastrop is a 906acre impoundment that was created in the 1960s to act as a cooling lake for the adjacent Sim Gideon Power Plant and also serves as a cooling lake for LP1. LP1 utilizes a closed-cycle recirculating system (CCRS) to achieve Best Technology Available (BTA) for impingement. The CCRS also serves as an entrainment technology because water in the lake is recirculated for continual use as plant cooling water.

Entrainment performance studies have not been performed at LP1. To find other entrainment studies that might be representative of LP1's operation, LCRA performed an internet search for publicly available studies. Searches included:

- Environmental Protection Agency (EPA) docket related to the 316(b) rule;
- Electric Power Research Institute (EPRI) website;
- Nuclear Regulatory Commission (NRC) website; and
- general internet search

Other studies considered included:

- Desalination Plant Intakes: Impingement and Entrainment Impacts and Solutions (WateReuse Association Desalination Committee, 2011)
- Entrainment Survival: Status of Technical Issues and Role in Best Technology Available (BTA) Selection (EPRI, 2009)
- Impingement and Entrainment Survival Studies: Technical Support Document (EPRI, 2005)
- Review of Entrainment Survival Studies: 1970-2000 (EPRI, 2000)
- Entrainment-related studies available on the Nuclear Regulatory Commission website

Although the above studies provide some relevant information, the following two studies were identified as having greater relevance to LP1 operations because they examine the impacts that Texas electric generating facilities with recirculating cooling water systems with reservoirs have on fish and aquatic life.

Entrainment Studies

Study Title: *Evaluating Fish Impingement and Entrainment at the Comanche Peak Steam Electric Station (Bauml, George A., Thesis for the Degree of Master of Science, 1996).*

Relevance: This study was identified as having relevance to the LP1 facility because it was performed at a steam electric generating facility located in Texas that utilizes a fresh-water cooling water impoundment that recirculates cooling water. The study examined fish communities that have similarities to the existing fish communities in Lake Bastrop. The Texas Parks and Wildlife Department's 2018 Fisheries Management Survey Report describes the fish community in Lake Bastrop as including blue gill, gizzard shad, threadfin shad, and other sunfish as the predominant prey species, and channel catfish and largemouth bass as predator species. The results of the study provide information regarding how fish communities may be affected by a steam electric generating facility that uses a closed cycle recirculating system.

The definition of entrainment (*40 CFR § 125.92(h)*) "means any life stages of fish and shellfish in the intake water flow entering and passing through a cooling water intake structure and into a cooling water system, including the condenser or heat exchanger." The following study took sampling data from in front of the intake structures and assumed 100% mortality of entrained ichthyoplankton and maximum intake operation at the plant. The data should be interpreted as providing the worst-case scenario for impacts to ichthyoplankton that are entrained, i.e. pass through the intake structure and into the cooling water system.

Study Summary: The following summary is quoted directly from the document.

"This study was designed to determine if impingement and entrainment by cooling water intake at the Comanche Peak Steam Electric Station have an adverse impact upon the Squaw Creek Reservoir fish population. The yearly impingement of fish was estimated to be 262,994 of 14 species. The threadfin shad (*Dorosoma petenense*) accounted for 96% of this total. Entrainment of eggs and larvae for a five month period was estimated to be 15,989,987 and 42,448,794 respectively. Two fish population studies were performed on Squaw Creek Reservoir to help assess impact. It was determined that the losses due to impingement and entrainment have no adverse impact upon the fish population of Squaw Creek Reservoir."

Study Description (as it pertains to entrainment):

The objective of the entrainment study was to determine potential impacts to the reservoir's fish populations by identifying what organisms were being entrained, the specifics involved, and to estimate the loss of eggs, larva, and juveniles.

As described in the study, Squaw Creek Reservoir (SCR) is a 3,272-acre impoundment located on Squaw Creek in Hood and Somervell Counties, Texas. The reservoir was created in 1977 to serve as a cooling reservoir for the Comanche Peak Steam Electric Station (CPSES), which is a two-unit power plant with a net rating of 2,300 Megawatts (MW). Secondary water uses of the reservoir include recreational fishing. The study identified major predator species of fish as largemouth bass, smallmouth bass, white bass, white crappie, and channel catfish. The major forage species included threadfin shad, bluegill sunfish, gizzard shad, and inland silversides.

The entrainment study included weekly sampling from April 1994 to August 1994. The entrainment data was collected by sampling in front of the trash rakes in front of the intake structures. The percent composition of ichthyoplankton collection by genus was determined for eggs, larvae, and juveniles. A simple population modeling approach was used to estimate the potential impact on fish populations. The model converts the number of ichthyoplankton entrained into the number of adult fish that would have been produced had the ichthyoplankton not been entrained. Approximately 29.7 million eggs, 44.4 million larva, and 1.3 million juveniles that represented six genera were estimated to be entrained during the study period. As described in the study, the model estimated that the adult loss as a result of the eggs, larva, and juveniles entrained ranged from 22 adults for largemouth bass to 300,000 adults for threadfin shad. See Table 1 for the model results for estimated adult loss.

Estimated Adult Loss
Model Results

Species	Number Entrained	Lifetime Fecundity	Survival Egg to Larv	Larv From One Female	Survival Larv to Adult	Number of Adults Lost
FWD (Eggs)	5,610,864	1,800,000	0.005	6,500	0.00031	2
FWD (Larv)	4,588,465	1,800,000	0.005	6,500	0.00031	1,412
ISS (Eggs)	922,635	95,000	0.005	475	0.00421	2
ISS (Larv)	730,549	95,000	0.005	475	0.00421	3,287
TFShad	3,586,877	9,550	0.005	48	0.04188	150,236
GZShad	3,586,877	1,560,000	0.005	7,800	0.00026	920
WBass	5,365,234	3,390,000	0.005	16,950	0.00012	633
LMBass	4,437,467	550,000	0.750	412,500	0.00000	22
WCrappie	12,782,933	462,000	0.750	346,650	0.00001	74
BGSunfish	14,834,933	97,000	0.750	72,750	0.00003	409

Table 1. The results of the equivalent adult loss model and the numbers used in the calculation of these results.

The impingement and entrainment estimates were then evaluated according to the species' ability to compensate for its losses. For example, the study notes that the gizzard shad likely accounts for the large percentage of the 7 million *Dorosoma* genus larva entrained. Although losses are large, the conclusion remains that there is not a significant impact because the fish are a forage species with low survival rates even as adults. In addition, the species is adapted to compensating for enormous losses by maintaining their populations.

Conclusion: The following conclusion is quoted directly from the document.

"The overall conclusion of this thesis is that losses due to impingement and entrainment at the CPSES intake structure are not sufficient to cause adverse impact to the fish community in SCR."

The Comanche Peak study can be viewed in its entirety at the following internet location:
https://digital.library.unt.edu/ark:/67531/metadc278497/m2/1/high_res_d/1002656817-bauml.pdf

Study Title: *Aquatic Ecology-Main Cooling Reservoir and Circulating Water Intake Structure Study Unit 3 and 4 Licensing Project (ENSR, Corporation, August 2008, Prepared for STP Nuclear Operating Company, Wadsworth, Texas).*

Relevance: This study was identified as having relevance to the LP1 facility because it was performed at a steam electric generating facility located in the Colorado River basin in Texas that utilizes a cooling water impoundment that recirculates cooling water. The fish and aquatic life in the reservoir is heavily influenced by estuarine species due to the proximity of the South Texas Project (STP) to the Texas coast. The results of the study are relevant regarding how fish communities, whether fresh-water or estuarine, are affected by a steam generating facility that uses a closed cycle recirculating system. In terms of the definition of entrainment, samples were collected in front of the intake structure during the

entrainment part of the study. The data can be interpreted to assume that the organisms collected in the study would have been entrained in the cooling water system (would have passed through the cooling water intake structure into the cooling water system).

Summary: The following summary is quoted directly from the study document.

"This report summarizes the results of ENSR's aquatic assessment of the Main Cooling Reservoir (MCR) and the Circulating Water Intake Structure (CWIS) for the circulating water system for Units 1 and 2. The study was conducted in conjunction with the STP Nuclear Operating Company's Unit 3 and Unit 4 Combined Operating License (COL) application development for the proposed expansion project located proximal to Units I and 2 at the South Texas Project Electric Generating Station (STPEGS) in Matagorda County, Texas. From May 2007 to April 2008, biological samples were collected from the MCR and the CWIS at the STPEGS facility. The objective of the aquatic assessment was to collect current data over a one-year period to characterize the aquatic species within the MCR, and to evaluate impingement and entrainment impacts to establish, to the extent possible, relationships between the presence of aquatic organisms and the current STPEGS intake design and operating parameters."

Study Description (as it pertains to entrainment):

As described in the study, the STPEGS facility utilizes an approximately 7,000-acre reservoir called the Main Cooling Reservoir (MCR) to provide closed-cycle cooling water for up to four generating units, which produce approximately 2,700 MW. During the study period, two generating units were operational.

The study assessed the aquatic species of the MCR and the CWIS. For the MCR part of the study, the samples were collected over four quarterly sampling periods through one year using gill nets, trawls, beach seines, and plankton nets. The sampling occurred at fixed stations located in stratified areas of the reservoir. The objective was to characterize the aquatic species in the reservoir. For the CWIS part of the study, the study was designed to determine if daily or seasonal patterns were affected by the operation of the circulating water pump and intake screens. For the CWIS part of the study related to entrainment, samples were collected from behind the trash bars using plankton nets during the time period from May 2007 to April 2008. Samples were collected four times during a 24-hour period.

Data collected during the study show high numbers of certain aquatic organisms while the number of different species was low to marginal. Healthy populations of threadfin shad, silversides, blue catfish, common carp, ladyfish, and Atlantic croaker were identified in the reservoir.

The data from the CWIS part of the study show that a low number of fish species were entrained (<1%) at the circulating water intake structure. A total of 207,696 organisms were entrained, which represented 9 different fish families and 12 different classes of invertebrates. See Table 10 below for the species collected. The mud crab comprised 67% of the organisms entrained while ichthyoplankton species comprised less than 1% of the total composition of entrained organisms. The mud crab species is common on the Texas coast and is known to occur in estuarine and freshwater rivers and reservoir systems. Entrainment rates were highest during the spring months.

Table 10. Species collected during entrainment sampling in the MCR Circulating Water Intake Structure, 2007-2008.

Common Name	Scientific Name	Total
Finfish		
Anchovy	*Engraulid* sp.	30
Clupeid	*Clupeid* sp	544
Gobies	*Gobi* spp.	61
Naked goby	*Gobiosoma bosc*	5
Silversides	*Atheriniformes spp.*	2
Silversides	*Atheriniformes spp.*	169
Silversides	*Atheriniformes spp.*	30
Fish egg	Fish egg	103
Needlefish	*Beloniformes spp.*	3
Flying fish (eggs)	*Exocoetidae* sp. (eggs)	307
Egg Complex	*Carangidae-Labridae-Sciaenidae*	8
Perch-like fish	*Perciformes*	6
Wrasse fishes	*Labridae* sp.	3
	Subtotal	1,271
Invertebrates		
Amphipod	Amphipod spp.	141
Amphipod	*Cerapus* sp.	4
Brachyuran decapod	*Brachyura sp. (zoea)*	353
Fish Lice	*Branchiura spp.*	399
Cladoceran	*Cladocera spp.*	800
Copepod	*Copepoda spp.*	6,588
Decapoda	*Rhithropanopeus harrissi*	140,192
Decapoda	*Panopeidae sp.*	10,798
Decapoda Zoea	Decapoda	31,919
Harpacticoid copepod	Copepoda	12,212
Insect sp.	Insecta	24
Tongue biters	Isopoda	16
Mollusk	*Bivalvia* sp.	1
Mysid shrimp	*Mysida sp.*	2,660
Midge (sp.1)	Diptera	32
Mites/Ticks	*Acari*	12
Midge	*Chironomidae* sp.	78
Polychaete	*Nereis* sp.	4
Seed Shrimp	Ostracoda	78
Shrimp	*Caridea*	1
Unidentified		113
	Subtotal	206,425
	Total	**207,696**

Conclusion: The following conclusion is quoted directly from the document.

"Based on data collected from this combined study it is evident that MCR supports a very diverse aquatic system both for fishes and macroinvertebrates. Although the reservoir functions as a cooling water system, the day-to-day withdrawal of water through the CWIS and resultant influx of heated discharge water does not appear to have a negative impact on the fish and macroinvertebrate communities living in the MCR."

The STP study can be viewed in its entirety at the following internet location:
https://www.nrc.gov/docs/ML0908/ML090860875.pdf
(Study begins on page 48 of the document.)

ATTACHMENT

LP1 - TECH - 11 Pump Curves

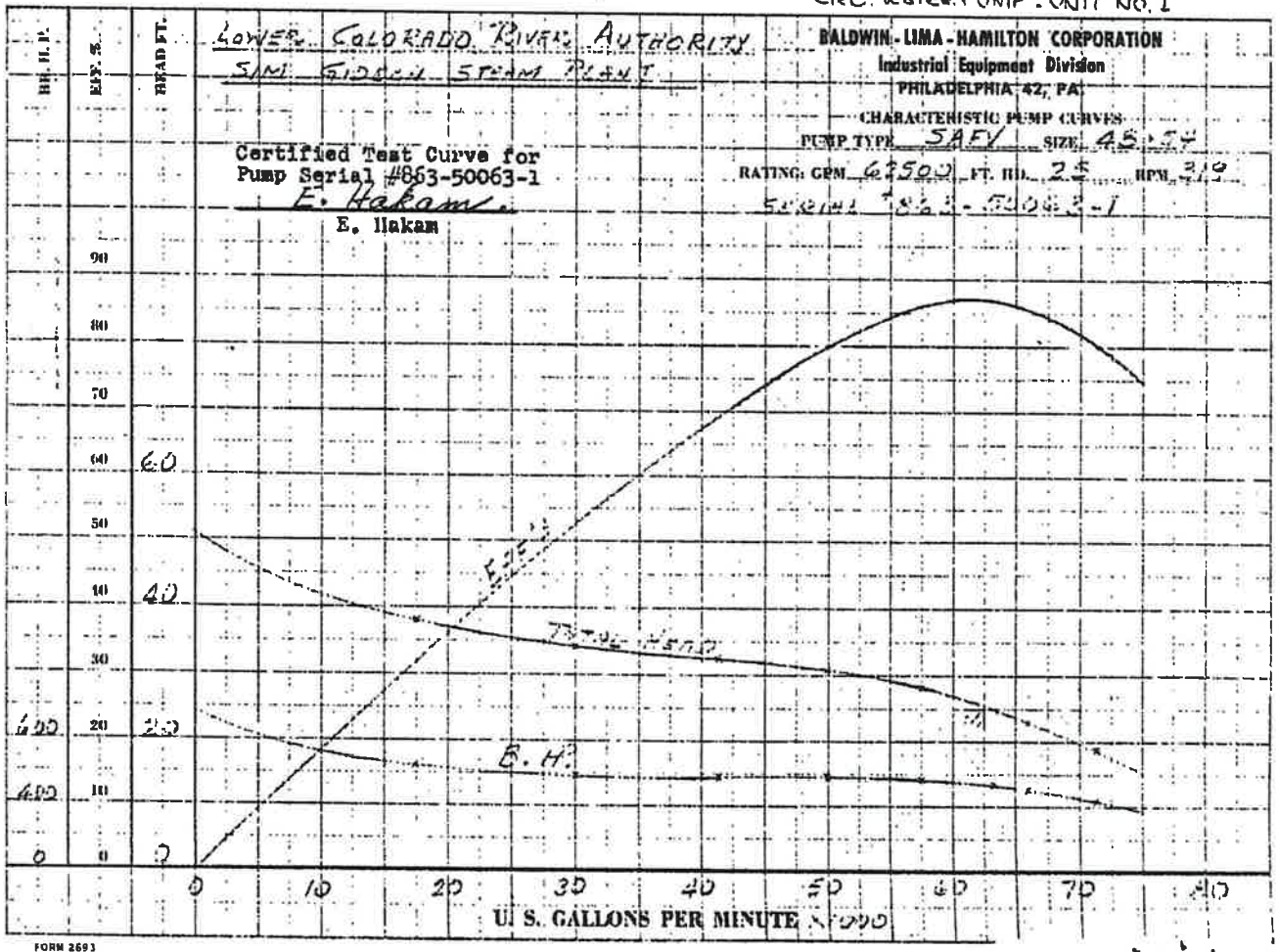
SGP - Unit 1 Circulating Water - both pumps

U1 (Both Pumps

REF.

CURVE NO. [illegible]

Circ. Water Pump - Unit No. 1



FORM 2693

P-104-M-4

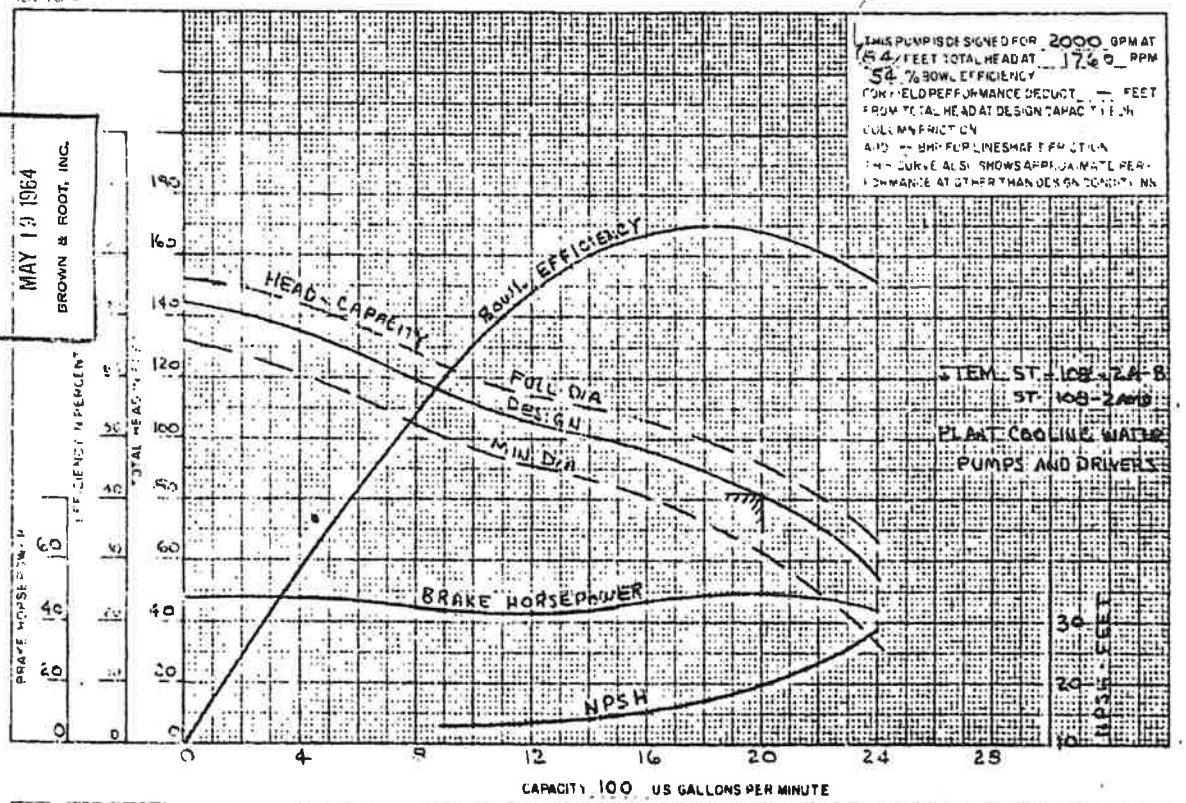
F-15387-A

(15)

LOWER COLORADO RIVER AUTHORITY		LOCATION: SIM GIDEON POWER PLANT	CIRC. WATER PUMP—PERFORMANCE CURVES	

-81/4-

THIS PUMP IS DESIGNED FOR 2000 GPM AT 54 FEET TOTAL HEAD AT 1760 RPM
54 % BOWL EFFICIENCY
FOR FIELD PERFORMANCE DEDUCT — FEET FROM TOTAL HEAD AT DESIGN CAPACITY FOR COLUMN FRICTION
AND — BHP FOR LINESHAFT FRICTION
THIS CURVE ALSO SHOWS APPROXIMATE PERFORMANCE AT OTHER THAN DESIGN CONDITIONS



11½200 IMPELLER	12" BOWL	12HH200 PUMP	WORTHINGTON CORPORATION	5-11-64 DATE	VTP-10292-3 SERIAL NO
7½" IMPELLER DIA	50 HP MOTOR DRIVER	2 NO OF STAGES	VERTICAL PUMP DIVISION	CUST NO	OTP-22140 ORDER NO
TEST NO	1760 R.P.M.	CWK DRAWN BY	HARRISON, N.J. U.S.A. BELLFLOWER, CALIFORNIA U.S.A.	QUOTE NO	P-108-M-2

14615

(15)

LOWER COLORADO RIVER AUTHORITY		LOCATION		
		SIM GIDEON POWER PLANT	COOLING WATER PUMP HEAD-CAP CURVE	

SGP - Unit 2 Circulating Water - both pumps

U 2 (Both pumps)

CIRCULATING WATER PUMP

HYDRAULIC PERFORMANCE WARRANTY

Guaranteed at designated point only and is contingent on
1 Proper and adequate flow to pump suction.
2 Proper submergence and NPSH available.
3 Fluid free of gas, air and abrasive matter.
4 Impeller with proper lateral adjustment.

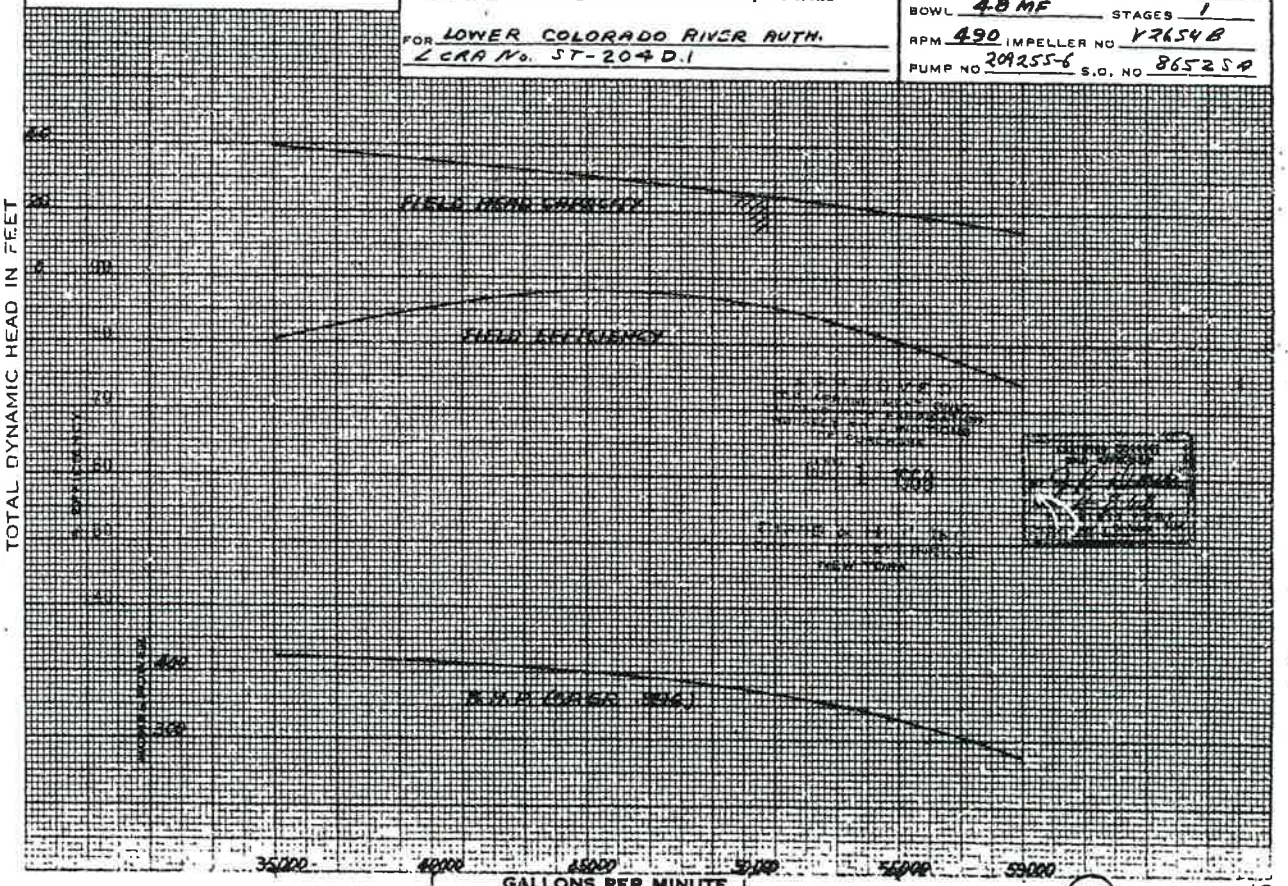
PEERLESS PUMP

HYDRODYNAMICS DIVISION

FMC CORPORATION ® Los Angeles 31, Calif · Indianapolis 6, Ind

FOR LOWER COLORADO RIVER AUTH.
LCRA No. ST-204D.1

CURVE NO 2844643 R
PUMP TYPE HYDROFOIL
COLUMN 15'-10" OF 48"
BOWL 48 MF STAGES 1
RPM 490 IMPELLER NO V7654B
PUMP NO 209255-6 S.O. NO 865254



PLOTTED BY A. del B. FROM TEST NO. NONE

P-204-M-4

(15) ST-204D-1
FORM E-1

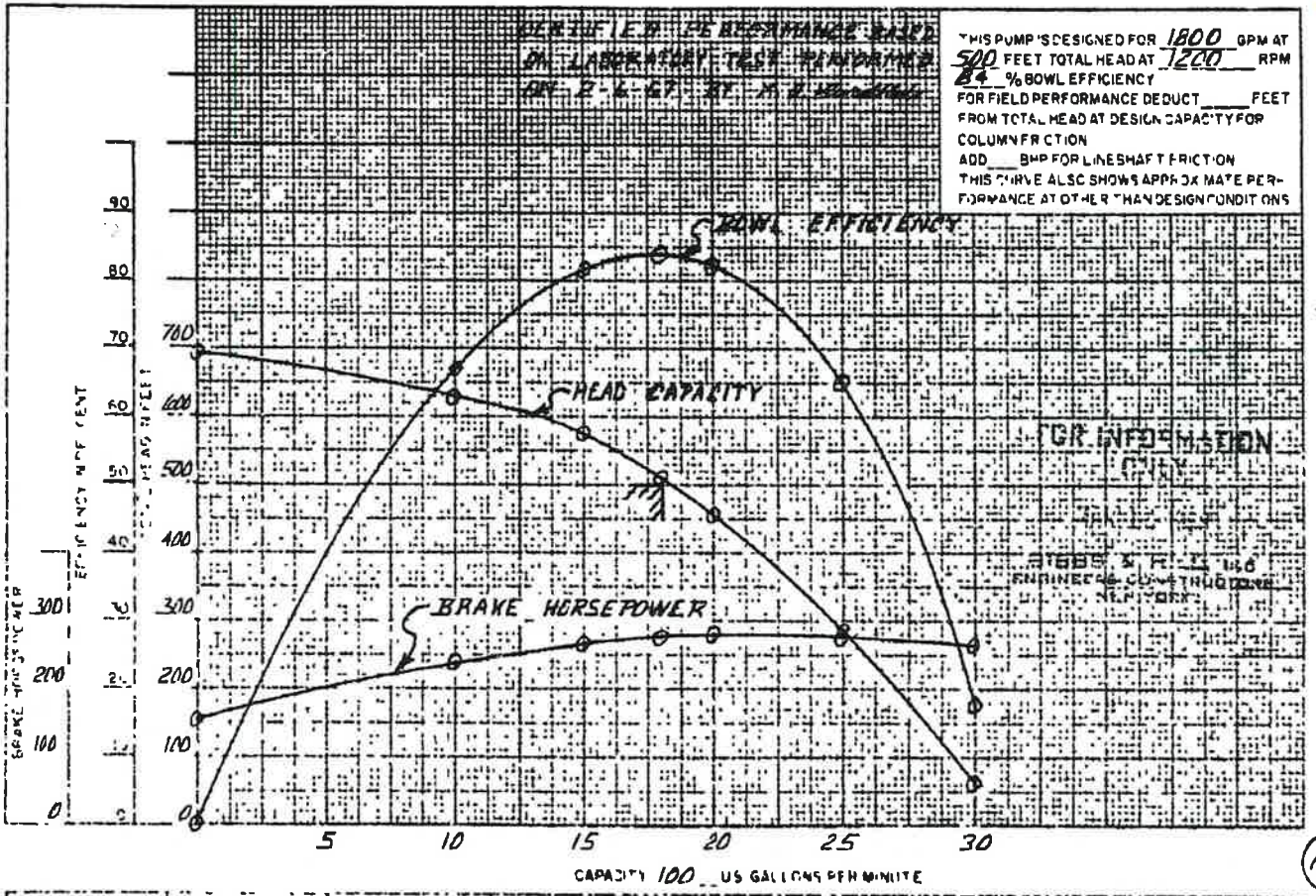
LOWER COLORADO RIVER AUTHORITY		LOCATION: SIM GIDEON POWER PLANT	COND. PUMP HEAD-CAP CURVE

SGP - Unit 2 Auxiliary Water - both pumps

U2 Aux

(Both pumps)

DEN 7868-A



THIS PUMP IS DESIGNED FOR 1800 GPM AT 500 FEET TOTAL HEAD AT 1200 RPM
84 % BOWL EFFICIENCY
FOR FIELD PERFORMANCE DEDUCT ____ FEET FROM TOTAL HEAD AT DESIGN CAPACITY FOR COLUMN FRICTION
ADD ___ BHP FOR LINE SHAFT FRICTION
THIS CURVE ALSO SHOWS APPROXIMATE PERFORMANCE AT OTHER THAN DESIGN CONDITIONS

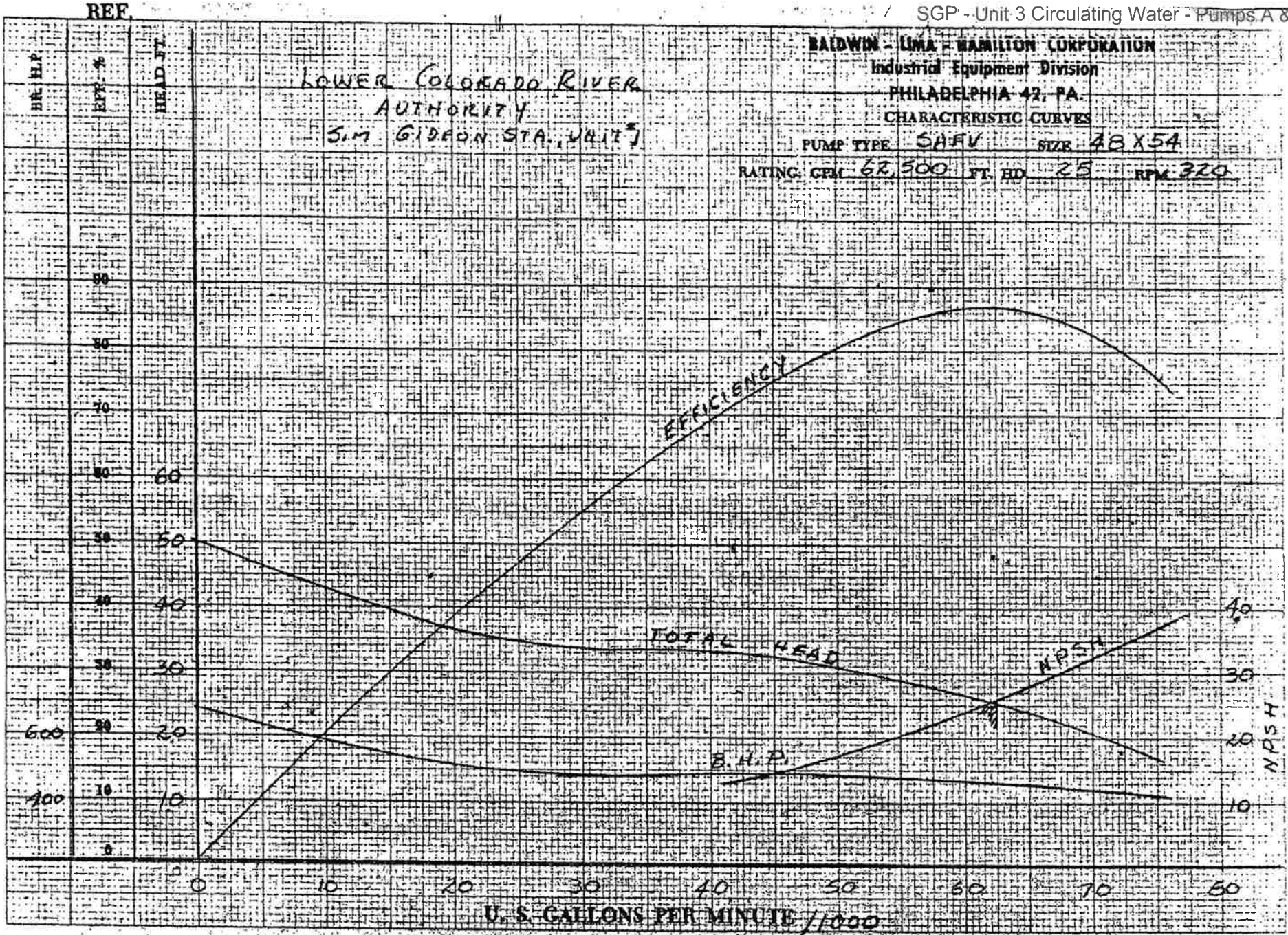
15

BRONZE IMPELLER	C.I.N.E. MFR.	15H-277 P. NO.	WORTHINGTON CORPORATION	2-6-67 DATE	VTP-18152 SERIAL NO
10 3/8" IMP. DIA	200 HP MOTOR	12 NO. OF STAGES	VERTICAL PUMP DIVISION	USER NO	DTP-26709 ORDER NO
1989 TEST NO	1189 RPM	L.R.L ORDER NO	PEMBROKE, COLORADO, U.S.A. — SIERRA MADRE, CALIFORNIA, U.S.A.		P-204-M-2

NONE

LOWER COLORADO RIVER AUTHORITY	DRAWN BY	LOCATION	CIRC. PUMP HEAD-CAP CURVE	DATE 11/15/67
	CHECKED BY	SIM GIDEON POWER PLANT		SCALE AS SHOWN
	APPROVED BY			DWG. NO. P-204-M-2
	DESIGNED			

REF.



#2693

CURVE NO. F-14843

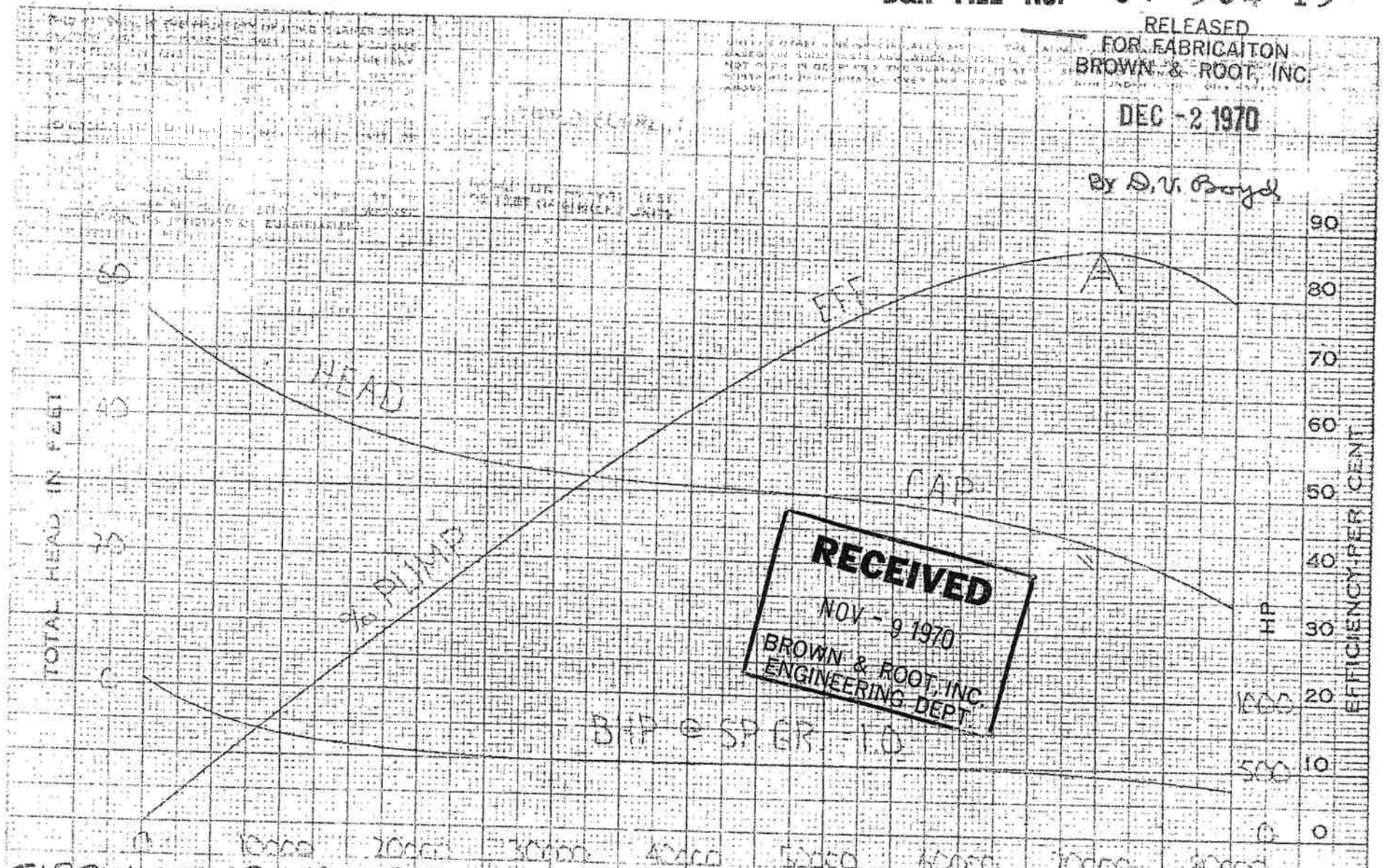
3(A + C)

304 - 2c

Circulator Pump 3B

BYRON JACKSON **B&R FILE NO. ST 304-13**

RELEASED FOR FABRICAITON
BROWN & ROOT, INC.
DEC - 2 1970
By D. V. Boyd



RECEIVED
NOV - 9 1970
BROWN & ROOT, INC.
ENGINEERING DEPT.

CIRCULATING WATER PUMPS
LOWER COLORADO RIVER AUTHORITY - ITEM - ST-304-2C
SIM GIDEON STEAM PLANT - CONTRACT ST-304

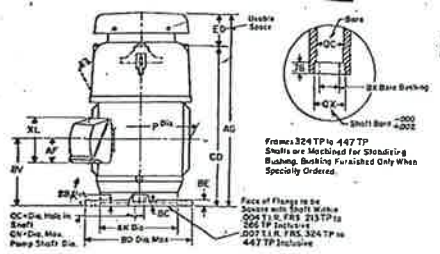
NUMBER AND TYPE	RPM	ASSEMBLY NO.	IMPELLER NO. / DIA.	BYRON JACKSON TEST
65 PMR 1STG. VERT. CIRC.	350	FACTORY NO. 681-H-0775	8-3631 + 7 3/4 UNDER / OVER	T-31963
		DATE 10-27-70	DATA BY EJS	DRAWN BY EJS

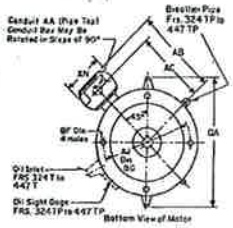
Westinghouse

B&R FILE No.

Vertical P-Base Hollow Shaft
High Thrust Motors
TEFC, Explosion Proof

Squirrel Cage, Life-Line T
Frames 213TP-447TP





Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Frame Series	P	AG	AJ	AK①	BB	BC	BD	BE	BF	BV	CD	GA	GC	GN	ED	GX	Approx. Net Wt. Lbs.
213-5TP	11.29	24.34	9.125	8.250	.188	.250	10.00	.76	.4375	8.00	22.05	13.22	1.325	1.0000	4.00	...	275
254-5TP	13.25	28.50	9.125	8.250	.188	.125	10.00	.76	.4370	9.88	23.92	15.38	1.375	1.2500	4.50	...	350
284-5TP	14.72	31.45	9.125	8.250	.188	.250	10.00	.76	.4370	11.75	25.37	17.34	1.375	1.2500	4.50	...	460
284-5TP/HD	14.72	30.20	14.750	13.500	.250	.250	16.50	.76	.6875	10.50	25.87	17.34	1.375	1.2500	4.50	...	540
324-6TP	17.00	35.18	14.750	13.500	.250	.250	16.50	.88	.6875	11.50	31.00	21.12	1.875	1.7500	5.10	2.06	800
364-5TP	19.12	38.56	14.750	13.500	.250	.250	16.50	.88	.6875	12.25	32.50	22.62	1.875	1.7500	5.20	2.06	1100
404-5TP	21.50	43.13	14.750	13.500	.250	.250	16.50	.76	.6875	13.50	37.25	25.50	2.000	1.9375	5.50	2.38	1410
444-5TP	24.50	49.20	14.750	13.500	.250	.250	16.50	.88	.6875	16.00	42.00	28.76	2.000	1.9375	6.88	2.38	1950
447TP	24.16	53.70	14.750	13.500	.250	.250	16.50	.88	.6875	17.25	45.58	28.76	20.00	1.9375	6.88	2.38	....

Frame Series	Conduit Box Dimensions — Standard Conduit Box AA	AC	AF	XL	XN	Oversize Conduit Box AA	AC	AF	XL	XN
Totally Enclosed Fan Cooled										
213-5	½	9.12	7.44	2.88	5.62	4.76	1½	9.12	7.44	2.88	5.62	4.76
254-6	1½	11.30	8.98	3.38	6.76	5.88	1½	11.30	8.98	3.38	6.76	5.88
284-6	1½	12.24	9.82	3.38	6.76	5.88	1½	12.24	9.82	3.38	6.76	5.88
324-6	1½	13.24	10.92	3.38	6.76	5.88	2½	15.62	12.80	8.62	10.26	7.76
364-5	2½	17.64	13.82	8.62	10.26	7.76	2½	17.64	13.82	8.62	10.26	7.76
404-5	2½	18.76	14.84	8.62	10.26	7.76	4	19.20	14.96	8.62	13.62	10.00
444-5-7	2½	20.32	16.50	8.62	10.26	7.76	4	20.76	16.50	8.62	13.62	10.00
Explosion Proof										
213-5	½	8.82	7.50	2.68	6.12	5.38	½	8.82	7.50	2.68	6.12	5.38
254-6	1½	11.88	9.24	3.62	7.88	7.26	1½	11.88	9.24	3.62	7.88	7.26
284-6	1½	12.80	10.18	3.62	7.88	7.26	1½	12.80	10.18	3.62	7.88	7.26
324-6	1½	13.80	11.18	3.62	7.88	7.26	2½	17.24	12.68	7.00	12.26	11.00
364-5	2½	18.32	13.78	7.00	12.26	11.00	2½	18.32	13.78	7.00	12.26	11.00
404-5	2½	19.44	14.88	7.00	12.26	11.00	4	20.80	16.50	10.88	16.26	13.00
444-5-7	2½	21.00	16.44	7.00	12.26	11.00	4	20.80	16.50	10.88	16.26	13.00

① AK dimension tolerances: 8.250 to 13.500 = −.000, +.003; 16.500 = −.005, +.005. AK dimension concentricity with shaft, 8.250 to 13.500 = .004 T.I.R.; 16.500 = .007 T.I.R.

② Alternate base.

Reproduced from Drawing 284-D-808, sub 4

RECEIVED
NOV - 7 1969
BROWN & ROOT, INC.
ENGINEERING DEPT

RELEASED FOR FABRICATION
BROWN & ROOT, INC.
DATE DEC 11 1969 By D.V. Boyd

Approval

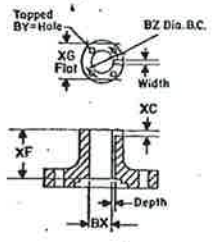
Customer Allied Chemical & Dye Corp. Texas — Customer Order 6902-16B
G.O. H11-40103 — Item 3 — Application PLANT COOLING WATER PUMPS
Hp 60 — Rpm 1770 — PH 3 — HZ 60 — Volts 460
Frame 365TP — Enclosure TEFC — Style
Certified By [illegible] — Date 8-11-69

1.15 SERVICE FACTOR

February, 1969
New Information
E, C/1728/DS

TEFC, Explosion Proof

Squirrel Cage, Life-Line T
Frames 213TP-447TP



Frame Series	Coupling Dimensions ② BK ③	Keyway Width	Keyway Depth	BY ④	BZ	XC	XF	XG	Coupling Style No.
Standard Bore for Frame Size									
213-5	.751	.3875	.109	10-32	1.375	.38	1.82	1.75	788C555S01
254-6	1.001	.2500	.140	10-32	1.375	.38	1.82	1.75	788C555S03
284-6	1.001	.2500	.140	10-32	1.375	.38	1.82	1.76	788C555S03
324-6	1.125	.2500	.140	.250-20	1.750	.50	2.00	3.00	186C188G02
364-5	1.188	.2500	.140	.250-20	1.750	.50	2.00	3.00	186C188G02
404-5	1.438	.3750	.203	.250-20	2.125	.62	2.50	3.50	186C187G01
444-5-7	1.688	.3750	.203	.250-20	2.500	.62	2.50	3.50	186C187G03
Maximum Bore for Frame Size									
213-5	1.001	.2500	.140	10-32	1.375	.38	1.82	1.75	788C555G03
254-6	1.251	.2500	.140	.250-20	1.750	.38	1.82	1.75	788C555G05
284-6	1.251	.2500	.140	.250-20	1.750	.38	1.82	1.75	788C555G05
324-6	1.751	.3750	.203	.250-20	2.500	.50	2.00	3.00	186C188G06
364-5	1.751	.3750	.203	.250-20	2.500	.50	2.00	3.00	186C188G06
404-5	1.938	.5000	.265	.250-20	2.500	.62	2.50	3.50	186C187G05
444-5-7	1.938	.5000	.265	.250-20	2.500	.62	2.50	3.50	186C187G05

③ For other couplings not listed, consult manufacturer.
④ Manufacturer's tolerance: +.001, −.000 for shaft dia. 1.500 and below; +.0015, −.0000 for shaft dia. above 1.500.
⑤ .62 depth.

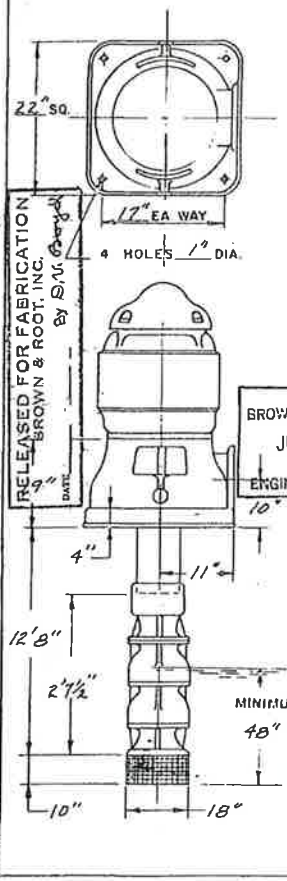
Reproduced from Drawing 284-D-812, sub 4.

Westinghouse Electric Corporation
Medium Ac Motor and Gearing Division, Buffalo, N. Y. 14240
Printed in USA

SGP - Unit 3 Auxiliary Water

VOM-LINE CLOSE COUPLED PUMP

OPEN LINESHAFT CONSTRUCTION



RELEASED FOR FABRICATION BROWN & ROOT, INC. By D.V. Boyd DATE

MODEL 60CW-14R.H-1
17AC10 DISCHARGE HEAD
60 HP V.H.S. ELECTRIC MOTOR
1770 RPM 60 CYCLE 3 PHASE 460 V.
WESTINGHOUSE
T.E.F.C.
1 STAGE 14RH BOWLS
2500 GPM 75 FT. PER CURVE 1454A
WEIGHTS: PUMP 1592
MOTOR 600

DISCHARGE FLANGE 10" 125 LB. A.S.A.

RECEIVED
BROWN & ROOT, INC.
JUN 10 1969
ENGINEERING DEPT

B&R FILE NO. ST-308-3

COLUMN PIPE
1 3/16" SHAFTING
MAX. O.D. BOWL ASSEMBLY 18"
SUCTION BELL MOUTH W/GALVANIZED
STEEL STRAINER.
LOWER COLORADO RIVER AUTHORITY
BASTROP STEAM PLANT
P.O. #907 ITEM ST 308-1A, 2A, 4A
PLANT COOLING WATER PUMPS

MINIMUM SUBMERGENCE

LAYNE & BOWLER PUMP CO.

PROPOSAL FOR
SPEC ITEM
CERTIFIED 3-31-69
BY L. & B. NO

BA 3496-A

H 3

Aux

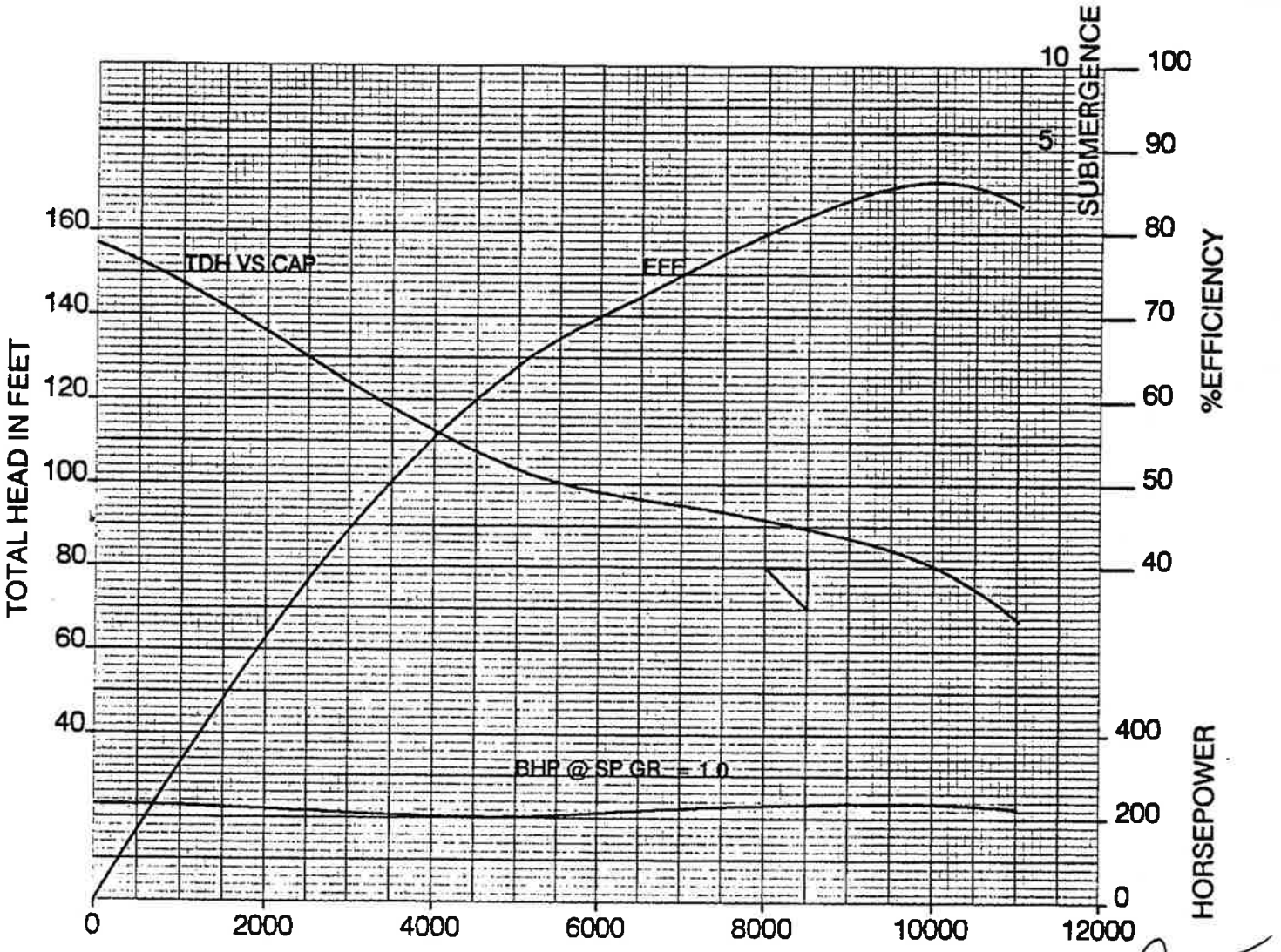
Title: Cooling Water Pumps
No: P-308-M-2

15

IMPELLER LIFT .025"

WITNESS TEST

16 DISCHARGE TAP



Witnessed: Kathy L. Dow 6/7/00

Pump Size & Type		Speed	Impeller Number	Actual Diameter	Maximum Diameter	Stages	Eye Area
23HQO	1 STG.	1180	329627VE	15.000"	15.000"	1	
Prepared By	RW	Date					Tulsa Operations
Customer	H.B. Zachry Co.	7 JUNE 00					

Serial No.	Customer No.	Item No.	Certified By	Date	Curve No.	Revision
99-SH-1674	5082-2-11218	1-635-PMP-0101	Steve Johnson	7-JUN-00	23HQO-75	

FLOWSERVE Rotating Equipment Division

Byron Jackson® Products

United Centrifugal™ Pumps

PUMP TEST DATA

PUMP SIZE AND TYPE				
23HQO			1 STG.	
IMPELLER DRAWING	DIAMETER	VANES	UNDER FILE	STGS.
329627VE	15.000"		STD. #2.5	1

GUARANTEED PUMPING CONDITIONS						
SPEED	CAPACITY	HEAD	EFF.	NPSH	SUBM.	SP.GR.
1180	8500	80	81.0%			1.0

DISCHARGE PIPE I.D. 16 SUCTION PIPE I.D.

TEST MOTOR NO. 56 H.P. 300 POLES 6 VOLTS 2300

POWER METER MULTIPUER 2.9808

NOTES- Test water temperature = 80 deg.F
Test specific gravity = .9960

TESTED BY RW

CUSTOMER H.B. Zachry Co.

CUSTOMER ORDER NO. 5082-2-11218

ITEM NO. 1-635-PMP-0101

JOB NO. 99-SH-1674 SERIAL NO. 99-SH-1674

NOTES-
Impeller Lift = .025"
Witness Test : 6/7/00
Submergence tested @ 6 ft.

READING NO.	PUMP SPEED R.P.M.	DISCHARGE HEAD GAUGE USED R2000 PSI READ	DISCHARGE HEAD PSI CORRECTED	DISCHARGE HEAD FEET OF WATER	ELEVATION HEAD	DIFFERENTIAL VELOCITY HEAD	TOTAL DYNAMIC HEAD IN FEET OF WATER	CAPACITY MEASURED WITH 16" MAGNETIC FLOWMETER READ	CAPACITY G.P.M.	POWER WATER HORSE POWER	POWER BRAKE HORSE POWER	POWER WATT METER READING	POWER KILOWATTS INPUT	POWER B.H.P. SP.GR. 1.0000	PUMP EFFICIENCY	VIBRATION TOP OF HEAD IN-LINE WITH DISCHARGE IPS PK.UNFILT.	VIBRATION TOP OF HEAD 90 DEG. FROM DISCHARGE IPS PK.UNFILT.	NOISE (dBa) @ 1 METER
1	1189.0	66.0	66.0	153.1	6.30	.00	159.4		.0	.0	233.5	63.5	189.28	234.4	.0			
2	1190.0	46.7	46.7	108.3		.75	115.4		3955.0	114.8	209.9	57.2	170.50	210.8	54.7	.110	.118	88
3	1191.0	41.5	41.5	96.3		1.32	103.9		5247.0	137.1	209.2	57.0	169.91	210.0	65.5	.141	.191	
4	1190.0	38.8	38.8	90.0		2.02	98.3		6490.0	160.5	222.7	60.6	180.64	223.6	72.1	.157	.121	
5	1189.0	37.0	37.0	85.8		2.75	94.9		7563.0	180.4	232.7	63.3	188.68	233.7	77.5	.116	.094	
6	1189.0	34.9	34.9	80.9		3.52	90.8		8565.0	195.5	238.3	64.8	193.16	239.3	82.1	.135	.071	87
7	1188.0	32.4	32.4	75.1		4.34	85.8		9508.0	205.1	240.1	65.3	194.65	241.1	85.4	.058	.045	
8	1189.0	28.9	28.9	67.0		5.17	78.5		10379.0	204.9	238.3	64.8	193.16	239.3	86.0	.064	.056	
9	1189.0	24.1	24.1	55.9		5.94	68.1		11120.0	190.5	229.0	62.3	185.70	229.9	83.2	.067	.040	86
10																		
11																		
12																		
1	DATA COMPUTED TO A CONSTANT SPEED OF 1180 RPM						157.0		.0					229.1	.0			
2							113.4		3921.8					205.5	54.7			
3							102.0		5198.5					204.3	65.5			
4							96.7		6435.5					218.0	72.1			
5							93.4		7505.8					228.4	77.5			
6							89.4		8500.2					233.9	82.1			
7							84.6		9444.0					236.3	85.4			
8							77.3		10300.4					233.9	86.0			
9							67.1		11035.8					224.7	83.2			
10																		
11																		
12																		

DATE OF TEST: 7 JUNE 00

PUMP SERIAL NO. 99-SH-1674

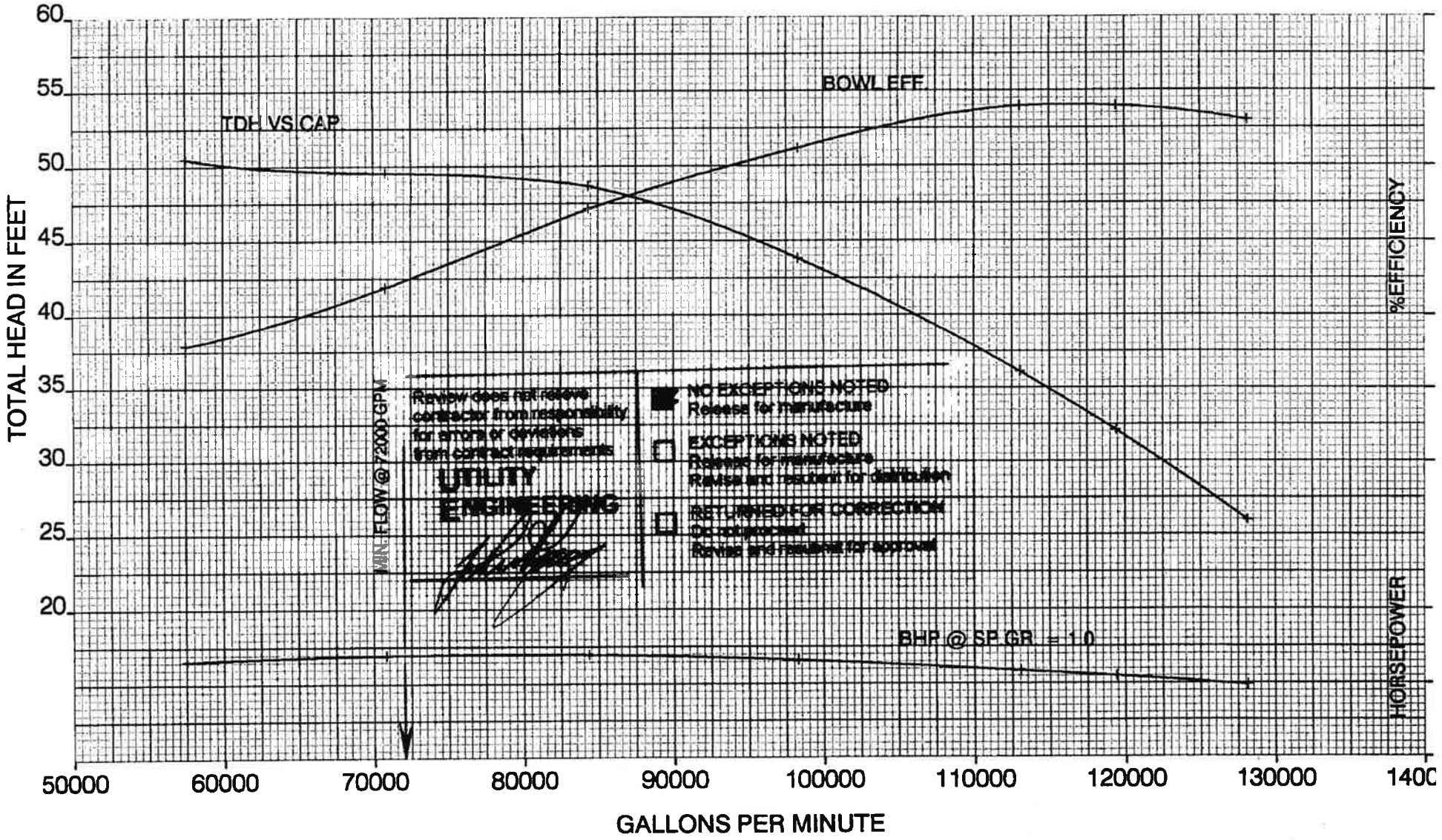
TEST NO. 23HQO-75

COLD WATER PERF. TEST

IMPELLER LIFT = 0.160"

M991023-630N011 RP

LOST PINES 1 POWER PROJECT 10/18/20



UNDERFILE: 5/8 x 6

Pump Size & Type	Speed	Impeller Number	Actual Diameter	Maximum Diameter	Stages	Eye Area
81 PMR - 1 STG VCT	358	R-3522 (4V)	2.75 °∠		1	1600 sq
						Verno
Prepared By A. TSOUNIS	Date					Operatic
Customer H.B. ZACHRY Co.	14 September 2000					

Serial No.	Customer No.	Item No.	Certified By	Date	Curve No.

FLOWSERVE
Rotating Equipment Division

PUMP TEST DATA

PERFORMANCE TEST

Los Angeles Oper

PUMP SIZE & TYPE:

81 PMR - 1 STG VCT

IMPELLER LIFT = 0.160"

IMP.NO.	DIA.	VANES	U.FILE	STAGE		GUARANTEED PUMPING CONDITIONS							
R-3522	2.75° <	4	5/8 x 6	1	DISCHARGE PIPE I.DIA. 65.25 Inches	RPM	GPM	HEAD	SP. GR.	B. EFF.	NPSH		TESTED BY M. AVILA
					DIFF.VEL. HD. 1.429 FEET AT 100,000 GPM	358	115500	32	1.0	85			FOR H.B. ZACHRY Co.
					MOTOR NO.: CL. E0320-1 HP: 1350 POLES: 20 VOLTS: 4160								CUST. P. O. NO. 5082-2-11218
					WATTMETER MULTIPLIER: 3754.86 P.T.: 35/1 C.T.: 400/5								JOB NO. 99 SH 1669
					MTR EFF.: 1/4 1/2: 3/4: 4/4: 5/4:								ITEM No. : 1-630-PMP-C101
													ROUTE SHT. No.:

				DISCHARGE DATA						HEAD Vs FLOW							POWER READING							
TEST POINT	FLOW 36 x 24 VENTURI			DISCHARGE PRESSURE		WATER TEMP	WATER SP. GR.	DIFF. PRESS.	DIFF. VEL. HD.	ELEV. HEAD	TOTAL HEAD	FLOW 66 x 33 VENTURI			TOTAL FLOW SUM OF BOTH VENTURIS	WATER HORSE POWER	WATT-METER ROG.	EQUIV. HP INPUT	MOTOR EFF.	VOLTS x	AMPS x	BRAKE HORSE POWER	PUMP EFF	
UNITS	PSID	CORR.	GPM	READ PSIG	CORR.	°F		PSID	FEET	FEET	FEET	PSID	CORR.	GPM			kW	HP	%	VOLTS	AMPS	HP	%	
GAGE NO.	200-33092			15565		1563						200-2407			GPM		4393							
RANGE	10 ΔP			0-30#								10 ΔP												
1	0.57	-0.019	14281	18.2	0.154	76	0.9989	18.4	0.47	7.58	50.50	1.60	0.004	43230	57511.7	732.6	0.370	1389.30	0.9450	119	2.78	1312.89	55.8	
2	0.58	-0.019	14406	17.7	0.142	76	0.9989	17.8	0.72	7.58	49.56	2.72	0.010	56399	70805.1	885.2	0.391	1468.15	0.9450	119	2.99	1387.40	63.8	
3	0.57	-0.019	14281	17.2	0.131	76	0.9989	17.3	1.02	7.58	48.68	4.19	0.021	70049	84330.7	1035.5	0.393	1475.66	0.9450	119	3.00	1394.50	74.3	
4	0.78	-0.025	16706	15.0	0.080	76	0.9989	15.1	1.38	7.58	43.84	5.67	0.041	81570	98276.5	1086.7	0.372	1396.81	0.9450	119	2.89	1319.98	82.3	
5	1.93	-0.063	26279	11.5	0.041	76	0.9989	11.5	1.83	7.58	36.10	6.42	0.041	86762	113041.1	1029.4	0.330	1239.10	0.9450	119	2.72	1170.95	87.9	
6	4.77	-0.051	41313	9.7	0.026	76	0.9989	9.7	2.04	7.58	32.11	5.20	0.035	78096	119409.2	967.3	0.310	1164.01	0.9450	119	2.63	1099.99	87.9	
7	5.05	-0.047	42508	6.9	0.031	76	0.9989	6.9	2.35	7.58	25.96	6.25	0.042	85625	128133.1	839.0	0.275	1032.59	0.9450	119	2.50	975.79	86.0	

THE FOLLOWING DATA COMPUTED TO A CONSTANT SPECIFIC GRAVITY OF 1.0

		FEET	TOTAL GPM	BHP	EFF.
1	**Distance from floor to centerline of:**	50.50	57511.7	1314.28	55.8
2	Discharge Pressure gauge: 62.0 inches	49.56	70805.1	1388.87	63.8
3	Water to Floor: 29.0 inches	48.68	84330.7	1395.98	74.3
4		43.84	98276.5	1321.38	82.3
5		36.10	113041.1	1172.19	87.9
6		32.11	119409.2	1101.15	87.9
7		25.96	128133.1	976.83	86.0