IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF LOUISIANA
SHREVEPORT DIVISION

THE UNITED STATES OF AMERICA and THE STATE OF LOUISIANA,	)	
Plaintiffs,	)	**Case No.** 5:13-cv-3065
v.	)	
THE CITY OF SHREVEPORT, LOUISIANA,	)	
Defendant.	)	

CONSENT DECREE

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WHEREAS, Plaintiff, the United States of America ("United States"), by the authority of the Attorney General of the United States and through its undersigned counsel, acting at the request and on behalf of the United States Environmental Protection Agency ("EPA"), filed a Complaint (the "Complaint") concurrently with the lodging of this Consent Decree alleging that Defendant, the City of Shreveport, Louisiana ("Shreveport"), has violated and will continue to violate Sections 301 and 309 of the Clean Water Act, 33 U.S.C. §§ 1311 and 1319 ("CWA"), and terms and conditions of its Louisiana Pollutant Discharge Elimination System ("LPDES") Permits issued under Section 402 of the CWA, 33 U.S.C. § 1342, for its two major publicly-owned treatment works ("POTWs"), the Lucas POTW and the North Regional POTW, and the corresponding wastewater collection systems located in or around the City of Shreveport, Louisiana;

WHEREAS, Plaintiff, the State of Louisiana ("State"), through the Louisiana Department of Environmental Quality ("LDEQ"), acting with concurrence of the Louisiana Attorney General, has joined this Complaint and seeks injunctive relief and civil penalties for Shreveport's alleged violations of the Louisiana Water Control Law ("LWCL"), LA. R. S. 30:2071 *et seq*. and the regulations promulgated pursuant thereunder at LAC 33:IX 501;

WHEREAS, LDEQ has been authorized by EPA to administer the National Pollutant Discharge Elimination System "NPDES" program pursuant to Section 402(b) of the CWA, 33 U.S.C. § 1342(b);

WHEREAS, the State is also a Plaintiff in this action and joined as a Party under Section 309(e) of the CWA, 33 U.S.C. § 1319(e), which requires the state in which a municipality is

located to be joined as a party whenever the municipality is a party to a civil action brought by the United States under Section 309 of the CWA;

WHEREAS, Shreveport is a "municipality" pursuant to Section 502 of the CWA, 33 U.S.C. § 1362;

WHEREAS, Shreveport owns and operates municipal wastewater collection, retention and transmission systems ("WCTS") that consist of a sanitary sewer system ("SSS") that is designed to collect and convey municipal sewage (domestic, commercial and industrial) to the Lucas and North Regional POTWs (the "POTWs") pursuant to LPDES Permit Numbers LA0041394 and LA0042188 (the "LPDES Permits") issued to Shreveport by the LDEQ;

WHEREAS, Shreveport has reported to EPA and LDEQ numerous sanitary sewage overflows ("SSOs") from its WCTS since at least 2005;

WHEREAS, the United States and the State contend that these SSOs are violations of the CWA, the LWCL, and the LPDES Permits;

WHEREAS, this Consent Decree requires Shreveport to develop, submit, finalize, and implement plans for the continued improvement of the SSS of its WCTS and POTWs to eliminate SSOs;

WHEREAS, the Parties to this Consent Decree have negotiated in good faith and have reached a settlement of the issues raised in the Complaint;

WHEREAS, Shreveport's agreement to this Consent Decree is not an admission of liability, and, except for Shreveport's consent to jurisdiction and venue as provided in Section I of this Consent Decree, this Consent Decree is not an adjudication or admission of any fact or law;

WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest;

NOW THEREFORE, with the consent of the Parties, it is hereby ORDERED, ADJUDGED, and DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 309(b) of the CWA, 33 U.S.C. §§ 1319(b), and over the Parties. This Court has supplemental jurisdiction over the state law claims asserted by the State pursuant to 28 U.S.C. § 1367. Venue is proper in the Western District of Louisiana pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and 28 U.S.C. §§ 1391(b) and 1395(a), because the violations alleged in the Complaint are alleged to have occurred in this judicial district. For purposes of this Consent Decree, or any action to enforce this Consent Decree, Shreveport consents to the Court's jurisdiction over this Consent Decree and any such action and over Shreveport and consents to venue in this judicial district.

2. For purposes of this Consent Decree, Shreveport agrees that the Complaint states claims upon which relief may be granted pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and the LWCL, LA. R.S. 30:2076(A)(3).

II. APPLICABILITY

3. The obligations of this Consent Decree apply to and are binding upon the United States, the State, and Shreveport and any successors, assigns, or other entities or persons otherwise bound by law.

4. No transfer of ownership or operation of the SSS, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve Shreveport of its obligation to ensure that the terms of this Consent Decree are implemented with respect to any of the other remaining portions of the SSS that are owned or operated by Shreveport. Within twenty-one (21) Days prior to such transfer, Shreveport shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed written agreement, to the United States and LDEQ in accordance with Section XV (Notices) of this Consent Decree. Shreveport shall require, as a condition of any sale or transfer, that the purchaser or transferee agrees in writing to be bound by this Consent Decree and submit to the jurisdiction of the Court for its enforcement. Any attempt to transfer ownership or operation of the SSS without complying with this Paragraph constitutes a violation of this Consent Decree.

5. Within thirty (30) Days after the Effective Date of the Consent Decree, Shreveport shall provide a copy of this Consent Decree to all officers, employees, and agents whose duties might reasonably include compliance with any substantive provision of this Consent Decree, as well as to any contractor retained to perform work required under this Consent Decree.

6. In any action to enforce this Consent Decree, Shreveport shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

III. OBJECTIVES

7. All plans, measures, reports, construction, maintenance, operational requirements, and other obligations in this Consent Decree or resulting from the activities required by this

Consent Decree shall have the objective of causing Shreveport to achieve and maintain full compliance with the CWA, the LWCL, and the LPDES Permits, including the goal of eliminating all SSOs.

IV. DEFINITIONS

8. Unless otherwise defined herein, terms used in this Consent Decree shall have the meaning given to them pursuant to the Clean Water Act, 33 U.S.C. §§ 1251 *et. seq.*, and pursuant to the regulations promulgated under the Act. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

(a). "Adequate Capacity" shall mean that capacity needed to collect, convey, and treat anticipated peak wet weather flows, without SSOs and/or overloading at the WWTP.

(b). "Basin" shall mean Sewershed.

(c). "Building /Private Property Backup" shall mean a Sanitary Sewer Overflow in the form of wastewater release or backup into a building or onto private property that is caused by blockages, flow conditions, or other malfunctions in the WCTS. A wastewater backup or release that is caused by blockages, flow conditions, or other malfunctions of a Private Lateral is not a Building/Private Property Backup for purposes of this Decree.

(d). "Bypass" shall have the meaning set forth at 40 C.F.R. § 122.41(m).

(e). "Calendar Quarter" shall mean the three (3) month periods ending on March 31, June 30, September 30, and December 31.

(f). "Calendar Year" shall mean the twelve (12) month period starting on January 1 and ending on December 31.

(g). "Certification" or "Certify" shall require attestation authoritatively based on education, knowledge, and expertise in a specialized field.

(h). "City" shall mean the City of Shreveport, Louisiana, including all of its departments, agencies, instrumentalities, such as the Department of Water and Sewerage, and any successors thereto.

(i). "CCTV" shall mean closed circuit television.

(j). "CMOM" or "Capacity, Management, Operations, and Maintenance" shall mean a flexible program of accepted industry practices to properly manage, operate, and maintain sanitary wastewater collection, transmission and treatment systems, investigate capacity-constrained areas of these systems, and respond to SSO events.

(k). "Complaint" shall mean the Complaint filed by the United States and the State in this action.

(l). "Consent Decree" shall mean this Consent Decree and any appendices attached hereto as listed Section XXIV (Appendices). In the event of a conflict between this document and any appendix, this document shall control.

(m). "Critical Response Time" shall mean the time interval between activation of the high wet well level alarm and the first Sanitary Sewer Overflow under peak flow conditions.

(n). "Clean Water Act" or "CWA" shall mean the Clean Water Act, as amended, 33 U.S.C. §§ 1251, *et seq.* and the regulations promulgated there under.

(o). "Date of Entry" shall mean the date on which this Consent Decree is entered by the United States District Court for the Western District of Louisiana.

(p). "Date of Lodging" shall mean the date this Consent Decree is lodged with the Clerk of the Court for the United States District Court for the Western District of Louisiana pending solicitation of public comments.

(q). "Day" shall be defined pursuant to Fed. R. Civ. P. 6 (a) (1) for purposes of computing time periods stated in days or longer units.

(r). "Defendant" shall mean the City of Shreveport, Louisiana, including all of its departments, agencies, and instrumentalities, and any successors thereto.

(s). "Deliverable" shall mean any written document required to be prepared and/or submitted by or on behalf of Shreveport pursuant to this Consent Decree.

(t). "DOJ" shall mean the United States Department of Justice and any of its successor departments or agencies.

(u). "EPA" shall mean the United States Environmental Protection Agency and any of its successor departments or agencies.

(v). "Effective Date" shall have the definition provided in Section XVI (Effective Date).

(w). "Force Main" shall mean any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump which is intended to convey wastewater under pressure.

(x). "Gravity Sewer Line" or "Gravity Sewer" shall mean a pipe that receives, contains, and conveys wastewater not normally under pressure, but is intended to flow unassisted under the influence of gravity.

(y). "Infiltration" shall mean water other than wastewater that enters a sewer system (including sewer service connections, Private Laterals, and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes, as defined by 40 C.F.R. § 35.2005(b)(20).

(z). "Inflow" shall mean water other than wastewater that enters a sewer system (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage, as defined by 40 C.F.R. § 35.2005(b)(21).

(aa). "I/I" shall mean the total quantity of water from Inflow and Infiltration without distinguishing the source.

(bb). "LDEQ" shall mean the State of Louisiana Department of Environmental Quality and any successor departments or agencies.

(cc). "LPDES" shall mean the Louisiana Pollutant Discharge Elimination System authorized under Section 402 of the CWA, 33 U.S.C. § 1342.

(dd). "LWCL" shall mean the Louisiana Water Control Law, LA. R.S. 30:2017 *et seq*., and the regulations promulgated pursuant thereunder at LAC 33: IX 501 (A) and (D).

(ee). "Major Gravity Line" shall mean any of the following:

(i). Gravity Sewer Lines that are twelve (12) inches in diameter or larger;

(ii). Eight (8) Inch Gravity Sewer Lines that are necessary to accurately represent flow attributable to a service area in each of the Sewersheds;

(iii). Gravity Sewer Lines that convey wastewater from one pumping station service area to another pumping station service area; and

(iv). Gravity Sewer Lines that have caused or contributed to, or that Shreveport knows will likely cause or contribute to capacity-related SSOs.

(ff). "Month" shall mean shall mean one calendar month running from the numbered day to the same numbered day of the following calendar month, regardless of whether the particular month has 28, 29, 30 or 31 days. In the case where a triggered event would occur on a day of the month which does not exist (for example, on February 30), then the event shall be due on the first (1st) day of the following month (for example, March 1).

(gg). "Paragraph" or "¶" shall mean a portion of this Consent Decree identified by an Arabic numeral.

(hh). "Parties" shall mean the United States of America on behalf of the EPA, the State of Louisiana through the LDEQ, and Shreveport.

(ii). "Permits Nos. LA0041394 and LA0042188" shall mean Louisiana Pollutant Discharge Elimination System ("LPDES") Permit numbers LA0041394 and LA0042188, issued to the City pursuant to Section 402 of the Clean Water Act, 33 U.S.C. §1342, for its Wastewater Treatment Plants and any future extended, modified, or reissued permits.

(jj). "Plaintiffs" shall mean the United States of America on behalf of the EPA and the State of Louisiana through the LDEQ.

(kk). "Private Lateral" shall mean that portion of the Wastewater Collection and Transmission System, not owned by the City, used to convey wastewater from a building, buildings, or structure to that portion of the Wastewater Collection and Transmission System owned by the City.

(ll). "Pumping Station" shall mean facilities owned or operated by Shreveport that are comprised of pumps which lift wastewater to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary to the operation of that pumping station.

(mm). "Sanitary Sewer Assessment" or "SSA" shall refer to evaluation of the WCTS in accordance with the requirements set forth in Section VI (Compliance Requirements).

(nn). "Sanitary Sewer Overflow" or "SSO" shall mean an overflow, spill, diversion, or release of wastewater from or caused by the City's WCTS. This term shall mean:

(i) Any discharges to waters of the State or United States from the City's WCTS; and

(ii) Any release of wastewater from the City's WCTS to public or private property that does not reach waters of the United States or the State, including Building/Private Property Backups.

(oo). "Sanitary Sewer System" or "SSS" shall mean the portion of Shreveport's WCTS designed to convey only municipal sewage (domestic, commercial and industrial wastewaters) to Shreveport's WWTP.

(pp). "Section" shall mean a portion of this Consent Decree identified by a Roman numeral.

(qq). "Sewer Service Connection" shall mean any location where Private Laterals meet any portion of the WCTS.

(rr). "Sewershed" shall mean a section of the City's WCTS that is a distinct drainage or wastewater collection area which is designated as such by the City on Appendix A.

(ss). "Sewer System" shall mean the WCTS and the WWTP.

(tt). "State" shall mean the State of Louisiana through the LDEQ, including all of its departments, agencies, and instrumentalities, and any successor departments, agencies, and instrumentalities.

(uu). "Sub-basin" shall mean a portion of the Sewershed.

(vv). "Subparagraph" shall mean a portion of a paragraph identified by lowercase letters.

(ww). "Timely" when applied to the submittal of a Deliverable shall mean submitted no later than the deadline established in this Consent Decree (or in a document approved pursuant to this Consent Decree) and containing all of the elements pertaining to the submittal as set forth in this Consent Decree (or in a document approved pursuant to this Consent Decree). "Timely," when applied to the implementation of any Work shall mean implemented no later than the deadline established in this Consent Decree (or in a document approved pursuant to this Consent Decree) and in accordance with the elements pertaining to such Work as set forth in this Consent Decree (or in a document approved pursuant to this Consent Decree).

(xx). "United States" shall mean the United States of America, acting on behalf of EPA, including its departments, agencies, instrumentalities, and any successor departments, agencies, and instrumentalities.

(yy). "Wastewater Collection and Transmission System" or "WCTS" shall mean the municipal wastewater collection, retention, and transmission systems, including all pipes, interceptors, Force Mains, Gravity Sewer Lines, lift stations, Pumping Stations, manholes, and appurtenances thereto, that are owned or operated by the City, that are designed to collect and convey municipal sewage (domestic, commercial, and industrial) to Shreveport's WWTP. The WCTS is comprised of the SSS.

(zz). "Wastewater Treatment Plant" or "WWTP" shall mean the sewage treatment plants operated by the City and located at 11301 East Kings Highway and 2303 North Regional Road in Shreveport, Caddo Parish, Louisiana, and all components, devices, or systems used in the storage, treatment, recycling, and reclamation of municipal wastewater.

(aaa). "Work" shall mean all activities Shreveport is required to perform under this Consent Decree.

V. REVIEW, APPROVAL, AND IMPLEMENTATION OF DELIVERABLES

9. Public Document Repository ("PDR"). Where Deliverables are required to be submitted to EPA, Shreveport shall establish a PDR for hard copies of such Deliverables and a website for electronic versions of such Deliverables. Within seven (7) Days after a Deliverable is submitted to EPA, Shreveport shall place a copy of that Deliverable in each PDR location, along with a one (1) page instruction flyer containing a brief synopsis of the Deliverable and instructions on how to navigate to the City's website. If a Deliverable is required to be submitted and approved, within seven (7) Days after EPA's approval of all or part of the Deliverable pursuant to ¶ 12 (a). – (d)., or correction of deficiencies of a Deliverable pursuant to ¶¶ 14 and 16, Shreveport shall place a copy of such version of the Deliverable in each PDR along with the

a copy of the EPA written approval or correction of the document. This copy shall replace all previous copies of that Deliverable in each PDR until termination of this Consent Decree.

10. Shreveport shall maintain an updated list of all Deliverables in each PDR. As identified within Section VI (Compliance Requirements) and Section VIII (Reporting Requirements) of this Decree, required Deliverables shall include: SSA Reports; the City's Self Certification Summaries and/or Certifications; the Hydraulic Model Report; the Capacity Assessment Report; Annual Reports; Remediation Measures Plans; and Capacity Assessment Plans. As set forth herein, some Deliverables will be subject to EPA review and approval and others to EPA review and comment.

11. Copy to LDEQ. The City shall provide a copy of any Deliverable to LDEQ at the same time such Deliverable is due to EPA.

12. EPA Action on Deliverables Requiring Approval. After review of any Deliverable that is required to be submitted and approved pursuant to this Consent Decree, EPA, after consultation with LDEQ, shall in writing:

(a). approve the submission;

(b). approve of submission upon specified conditions;

(c) approve part of the submission and disapprove the remainder; or

(d). disapprove the submission.

13. Approved Deliverables. If a Deliverable is approved by EPA pursuant to ¶ 12. (a)., Shreveport shall take all actions required by the Deliverable in accordance with the schedules and requirements of the Deliverable as approved. If the Deliverable is conditionally approved or approved only in part pursuant to ¶ 12. (b). and (c)., Shreveport shall, upon written

direction from EPA, after consultation with LDEQ, take all actions required by the approved Deliverable that EPA, after consultation with LDEQ, determines are technically severable from any disapproved portions, subject to Shreveport's right to dispute only the specified conditions or the disapproved portions under Section XI (Dispute Resolution) of this Consent Decree. Following EPA approval of any Deliverable or portion thereof, such Deliverable or portion thereof so approved shall be incorporated into and become enforceable under this Consent Decree.

14. Disapproved Deliverables. If the Deliverable is disapproved in whole or in part pursuant to ¶ 12. (b). or (c)., Shreveport shall, within thirty (30) Days or such other time as EPA and Shreveport agree to in writing, correct all deficiencies and resubmit to EPA the Deliverable, or disapproved portion thereof, for approval, in accordance with ¶¶ 12 and 13. If the resubmission is approved in whole or in part, Shreveport shall proceed in accordance with ¶ 13.

15. Resubmitted Deliverables. If a resubmitted Deliverable, or portion thereof, is disapproved in whole or in part, EPA, after consultation with LDEQ, may again require Shreveport to correct any deficiencies, in accordance with ¶ 14, or may itself correct any deficiencies, subject to Shreveport's right to invoke Dispute Resolution under Section XI (Dispute Resolution) of this Consent Decree and the right of EPA to seek stipulated penalties as set forth in ¶ 17, below. Upon EPA's correction of any deficiencies, such resubmitted plan, report, or other item, or portion thereof will be incorporated into and become enforceable under this Consent Decree and shall be implemented by Shreveport according to the approved schedule subject to Shreveport's right to invoke Dispute Resolution.

16. Deliverables Submitted for EPA Review and Comment. EPA may provide written comments (as opposed to approval) on certain Deliverables as set forth in provisions of this Consent Decree. If EPA provides comments identifying deficiencies in such a Deliverable and requests that Shreveport respond to those comments, the City shall provide a written response to EPA within thirty (30) Days of receipt of such comments. If Shreveport fails substantively to address EPA's comments, such failure is subject to Stipulated Penalties as set forth in ¶ 17, below.

17. Stipulated Penalties Accruing. Any stipulated penalties applicable to the untimely submission of the original Deliverable, as provided in Section IX (Stipulated Penalties) of this Consent Decree, shall accrue during the thirty (30) Day period or other specified period, but shall not be payable unless the resubmitted Deliverable is untimely or is disapproved in whole or in part; provided that, if the original submission was so deficient as to constitute a material breach of Shreveport's obligations under this Consent Decree, the stipulated penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

18. Certification. In all Deliverables, notices, documents, or reports required to be submitted to the United States and State pursuant to this Consent Decree, Shreveport shall, pursuant to 40 C.F.R. § 122.22, sign and certify such Deliverables, notices, documents, and reports as follows:

> *I 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 such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

VI. COMPLIANCE REQUIREMENTS

19. The City shall perform assessments and engineering analyses in order to identify all measures necessary to bring its WCTS into compliance with the requirements of the CWA and regulations promulgated thereunder, and the City's LPDES Permits Nos. LA0041394 and LA0042188. The City shall comply with all requirements, schedules, and deadlines set forth in this Section, performing all tasks according to such requirements, schedules, and deadlines as expeditiously as possible, but no later than within the time limit specified for each requirement, schedule, or deadline. All requirements, schedules, and deadlines shall be completed no later than twelve years from the Effective Date of this Consent Decree.

A. SSAs

20. The City shall conduct SSAs to evaluate its WCTS, including all components in each Sewershed. Each SSA phase shall include the City's assessment and evaluation of its WCTS components within the basins included in that SSA phase. All SSAs shall be conducted in accordance with the requirements and time schedule set forth in Section VI (Compliance Requirements), herein. Each SSA shall be comprised of the basins identified herein and completed according to the prioritization, schedule, and specifications set forth herein:

(a) SSA Phase 1 (Cedar Grove) shall be completed within twelve (12) months from the Effective Date of this Consent Decree;

(b) SSA Phase 2 (Southside, Queensboro, North Highlands, Westside, and Choctaw Bayou) shall be completed within thirty (30) months from the Effective Date of this Consent Decree;

(c) SSA Phase 3 (Cooper Road, Wallace, and Broadmoor) shall be completed within forty-eight (48) months from the Effective Date of this Consent Decree;

(d) SSA Phase 4 (Stoner, North Pierre Bayou, Bickham Bayou, Country Club, and LSU Basin) shall be completed within sixty-six (66) months from the Effective Date of this Consent Decree; and

(e) SSA Phase 5 (Princess Park, Texas Pierre, Boggy Bayou, Agurs, Highland, Springfield, Gilmer Bayou, Shorewood, Flournoy Bayou, Page Bayou, Cross Bayou, Lower Cross Lake, and Lakeview) shall be completed within eighty-four (84) months from the Effective Date of this Consent Decree.

21. Each SSA shall identify: physical degradation of the WCTS, including the condition of pipes, Force Mains, and pump stations that cause and/or contribute to SSOs; Sewer Sheds with I/I to determine the extent these conditions cause and/or contribute to SSOs and overloading of the WWTP; sources of I/I within the Sewer Shed and quantify these; SSOs and quantify these; areas subject to Building/Private Property Backups; and cross connections and unauthorized connections.

22. Each SSA shall include investigation of the WCTS to locate and determine estimates of wet weather flows associated with individual sources of I/I and to locate and determine physical degradation of the WCTS, causing or contributing to SSOs. Investigative activities shall provide detailed characterization of significant sewer defects in Sub-basins and

identification of all remedial measures needed. These activities shall include: smoke testing all pipes that are 15 inches in diameter and smaller of the WCTS, including Private Laterals; visual inspections of all manholes and associated pipes; dye testing if appropriate; flow isolation if appropriate; CCTV inspections of at least 30% of the applicable portion of the WCTS (including 100% of the pipes that are greater than 15 inches in diameter) in each SSA phase to identify sewers in need of repair, rehabilitation, or replacement; and building inspections, including Private Laterals and roof drain outlets.

23. As part of each SSA, the City shall conduct a review of existing data pertaining to SSOs, sewage flows, WWTP and WCTS attributes (including pipe diameters, pipe segment lengths, diversion structure characteristics, catchment characteristics, invert elevations, and pipe interior roughness coefficients) as well as rainfall and groundwater levels. The City shall evaluate the accuracy, completeness, and adequacy of this data to appropriately characterize the WCTS's condition and sources of extraneous wet weather flow(s). This data review shall identify any additional information necessary and shall obtain the additional information to conduct the SSA.

24. Each SSA shall include a Pumping Station and Force Main Evaluation to evaluate current design and effective capacity, equipment condition, and operational redundancy for the WCTS at all pumping stations and force mains. For purposes of the evaluation and analysis of pump stations that have been newly constructed or undergone major reconstruction within the three (3) years prior to the Effective Date of this Consent Decree, Shreveport may use information and documentation from contract documents and contract specifications as a basis for the pump station evaluation and analysis.

The Pumping Station and Force Main Evaluation shall include an analysis of the following:

(a). the adequacy of station capacity, to be compared with criteria set forth in Design of Wastewater and Stormwater Pumping Stations, Water Environment Federation Manual of Practice FD-4 (1993);

(b). the Critical Response Time;

(c). the adequacy of station condition, based upon both physical inspection and operating mechanical failure history for five years prior to the date of the lodging of this Consent Decree;

(d). the adequacy of station design and equipment, including redundancy of pumps, electrical power supply, as well as other equipment, in keeping with Recommended Standards for Wastewater Facilities, Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (2004), see http://10statesstandards.com\wastewaterstandards.html;

(e). the ability of maintenance personnel to take corrective action within the critical response time calculated for each Pumping Station;

(f). the adequacy of the critical equipment list for each Pumping Station, identifying onsite redundancy and by-passing pumping capacity, or written procedure for immediate replacement with working replacement equipment stocked at the City's warehouse;

(g). the adequacy of the current Pumping Station backup power and emergency capabilities, to be achieved via emergency generators, emergency pumping capabilities, or separate power feeds from separate substations;

(h). the condition of each Force Main in the City's WCTS, with such assessment based upon direct inspection of the Force Main where possible, or if direct inspection is infeasible, with such assessment deduced from the condition and performance of similar Force Mains. This assessment also shall include an evaluation of the existing Force Main operating pressures and maximum anticipated pressures which could occur due to pump failure, valve failure, pump start-up or shut-down, or other causes; and

(i). the Force Main contingency plan, including all Force Mains in the City's WTSC, describing risks of uncontrollable discharge and steps to be taken in the event of Force Main failure, including emergency repair, repair equipment, spare parts, use of redundant Force Mains, and use of other operational measures necessary to prevent discharges from Force Mains. The contingency plan shall include an evaluation of the need for redundant Force Mains at critical Pumping Stations.

25. Each SSA shall be performed in accordance with all provisions set forth in: Handbook: Sewer System Infrastructure Analysis and Rehabilitation, EPA Publication: EPA/625/6-91/030 (1991); Existing Sewer Evaluation and Rehabilitation, Water Environment Federation Manual of Practice FD-6, 3rd edition (2009); A Guide to Short Term Flow Surveys of Sewer Systems, Water Research Centre Engineering (1987); and The National Association of Sewer Service Companies Manual of Practice (1995).

B. SSA REPORTS

26. The City shall submit SSA Reports for review and comment in accordance with Section V (Review, Approval, and Implementation of Deliverables) for each of the five phases identified in ¶ 20. (a).-(e). Each SSA Report shall document the City's compliance with the

provisions set forth in Section VI. A. and meet the requirements set forth in Section VI. B., herein. The SSA reports shall be completed and submitted within the following time frames:

(a) SSA Phase 1 Report shall be completed no later than fourteen (14) months from the Effective Date of this Consent Decree;

(b) SSA Phase 2 Report shall be completed no later than thirty-two (32) months from the Effective Date of this Consent Decree;

(c) SSA Phase 3 Report shall be completed no later than fifty (50) months from the Effective Date of this Consent Decree;

d) SSA Phase 4 Report shall be completed no later than sixty-eight (68) months from the Effective Date of this Consent Decree; and

(e) SSA Phase 5 Report shall be completed no later than eighty-six (86) months from the Effective Date of this Consent Decree.

27. Each SSA Report shall include an analysis of historical and current flow monitoring, inspection, and rainfall data collected during the evaluations and assessments set forth in Section VI. A. ¶¶ 21-25. The Report shall also:

(a). identify Sewersheds with I&I where these conditions are causing and/or contributing to SSOs and overloading at the WWTP;

(b). identify and quantify sources of I/I within the Sewersheds including Private Laterals;

(c). identify the quantity and volume of SSOs;

(d). identify areas subject to Building/Private Property Backups;

(e). identify portions of the system in which physical degradation of the WCTS is causing or contributing to SSOs;

(f). identify cross connections and unauthorized connections;

(g). describe the data management system used to organize, analyze, and report existing information collected when conducting the SSA;

(h). describe the quality control program used to ensure accuracy and reliability regarding data collected when conducting the SSA;

(i). identify portions of the WCTS experiencing levels of I/I that cause or contribute to SSOs and/or Building/Private Property Backups;

(j). identify specific sources of I/I to the WCTS by manhole/line segment, street address, type (e.g., Infiltration or Inflow), source (e.g., "wall leakage"), and estimated flow from the source;

(k). summarize investigative activities performed in each Sub-basin, including the type of activity, number of activities performed, observations made under each activity, and results in each Sub-basin;

(l). summarize structural defects identified in the WCTS including the number of each type of defect by line segment, manhole number or street address, and estimates of peak flow or impact on sewer capacity from all defects in each line segment, based on a consistently applied set of stated criteria;

(m). summarize, by Sub-basin, of the number and length of surcharged sewer segments and the number of structures at overflow under each condition investigated;

(n). map each Sub-basin for each condition investigated, illustrating each pipe segment operating in surcharge and each manhole or structure at which an SSO or a Building/Private Property Backup may occur;

(o). summarize the investigation and analysis regarding Pumping Stations and Force Mains;

(p). describe each Pumping Station;

(q). detail the results of the evaluation at each Pumping Station;

(r). detail the backup power and emergency pumping capability at each Pumping Station;

(s). detail the lightning strike protection equipment at each Pumping Station;

(t). detail each Pumping Station failure, including power-loss-related, and lightning strike-related SSOs that occurred in the five years prior to the date of the lodging of this Consent Decree, including the date of failure, cause of failure, how long the failure lasted, how the failure was corrected, and the volume discharged during failure;

(u). identify all measures to ensure compliance with the critical equipment list contained within Design of Wastewater and Stormwater Pumping Stations, Water Environment Federation Manual of Practice FD-4 (1993), and correct identified deficiencies including all appropriate backup power and lightning strike-protection measures necessary to minimize power-loss related SSOs;

(v). include an inventory listing each Force Main and indicating associated Pumping Station and Force Main construction material, date of age or installation, diameter, length, typical flow rates, inspection and maintenance history, and any redundant or standby

Force Mains, their carrying capacity as a percentage of the Pumping Station discharge and standard operating regime, including emergency standby and wet weather standby;

(w). include a report describing the condition of each Force Main in the City's collection system, the inspection method used, and identification of each Force Main determined to be at risk of failure; and

(x). include a Force Main contingency plan as set forth in Section VI. A. ¶ 24. (i).

28. The City shall certify, in keeping with the requirements of Section V, ¶ 18, that it it has met its obligations in assessing the WCTS and in preparing the SSA Reports according to the requirements herein. In doing so, the City shall review each of the SSA Reports prior to submission to EPA, which review shall include an audit of all supporting documentation for that report. The City shall prepare a summary based upon review of that documentation, describing the activities conducted to meet its Section VI. A obligations in performing the SSA and identify and explain any and all shortcomings. Upon submission of the SSA report to EPA, the City shall also submit the summary and certification, which attests to the City's compliance with SSA Section VI. A. requirements and that the City's report accurately reflects such compliance. All documents shall be submitted to EPA in searchable electronic form in keeping with Section V (Review, Approval, and Implementation of Deliverables), ¶ 16.

29. Upon review of each SSA report, summary, and certification, EPA shall notify the City of report deficiencies and the City shall correct those deficiencies in keeping with the schedule set forth in Section V (Review, Approval, and Implementation of Deliverables), ¶ 16.

C. SEWER SYSTEM REMEDIATION MEASURES PLANS

30. The City shall submit sewer system remediation measures plans to EPA for review and approval, in accordance with Section V (Review, Approval, and Implementation of Deliverables) ¶ ¶ 12 -15, within four months from the date of completion of each respective SSA phase set forth in Section VI. A. ¶ 20. Each plan shall include specific measures and schedules that, when implemented, shall address SSOs in present and future conditions.

31. Each sewer system remediation measures plan shall:

(a). identify all measures necessary to eliminate sources of I/I;

(b). identify all measures necessary to eliminate all SSOs caused by physical degradation of sewers, root intrusion, inadequate Pumping Station capacities, or poor Pumping Station or Force Main reliability;

(c). provide a Pump Station repair and upgrade plan for completing all repairs, renovations, upgrades, and corrective measures necessary to ensure continuous operation of each Pumping Station and eliminate Pumping Station SSOs;

(d). as a result of the evaluation and analysis conducted pursuant to Section VI. A. ¶ 24 (h). and (i)., provide a Force Main repair and upgrade plan for completing all repairs, renovations, upgrades, and corrective measures necessary to ensure continuous operation of each Force Main and eliminate Force Main SSOs.

(e). provide estimated capital, O&M, and present value costs for each identified remedial measure, in consistent, year-specific dollars; and provide a schedule, including a fixed end-date for design, construction, placement, and completion for all proposed

measures, identifying the dates for initial design, complete design, complete permitting, award contract, commencing construction, and completing construction for each measure proposed.

32. The City shall analyze each sewer system remediation measures plan and shall certify, in keeping with the requirements of Section V. ¶18, that the plan addresses the deficiencies identified in the corresponding SSA report. Each plan shall be submitted to EPA for review and approval in electronic form. The City's certification shall be submitted for review and comment in electronic form along with the plan.

33. Upon approval by EPA, the City shall implement the remedial measures in each sewer system remediation measures plan in accordance with the schedule contained therein and shall certify to EPA on an annual basis those measures which have been completed in keeping with Section VIII (Reporting Requirements), ¶ 60.

34. Remediation measures specified in each sewer system remediation measures plan shall be completed as follows:

(a) Phase 1, no later than forty-two (42) months from the Effective Date of this Consent Decree;

(b) Phase 2, no later than sixty (60) months from the Effective Date of this Consent Decree;

(c) Phase 3, no later than seventy-eight (78) months from the Effective Date of this Consent Decree;

(d) Phase 4, no later than ninety-six (96) months from the Effective Date of this Consent Decree;

(e) Phase 5, no later than one hundred and fourteen (114) months from the Effective Date of this Consent Decree.

D. HYDRAULIC MODEL

35. The City shall develop a computerized model of its WCTS relying upon a hydraulic modeling software package within twelve months from the Effective Date of this Consent Decree. The City shall use the computerized model to assess the hydraulic capacity of the WCTS and identify remedial measures to address capacity and condition limitations of the WCTS. The model shall enable the City to identify the existing hydraulic capabilities of the WCTS and compare those capabilities with future projected average and peak dry and wet weather flows for twenty years from the Effective Date of the Consent Decree. The hydraulic model shall detail the WCTS response to wet weather events and evaluate the impacts of proposed remedial measures and removal of I/I flow, as follows:

(a). The City shall configure the hydraulic model to represent the WCTS to identify the causes of all capacity related SSOs and assess proposed remedial measures to eliminate those SSOs. The WCTS hydraulic model shall include all Major Gravity Lines, pumping stations, SSOs, and Force Mains.

(b). The City shall configure the hydraulic model using current physical data, such as invert and ground elevations, pipe diameters, slopes, pipe run lengths, manning roughness factors, manhole sizes and configurations, and Pumping Station performance factors. The physical data including rainfall data, actual hydrographs, and WCTS flow data, shall be used to verify the accuracy of the hydraulic model.

(c). The City shall calibrate and verify the hydraulic model using all data set forth in Section VI. D. ¶ 35. (b)., applying three or more separate data sets per each for calibration and verification. The City shall use existing sensitivity analyses for the selected model or perform its own sensitivity analyses, such that calibration effectiveness is maximized.

36. The City shall certify, in keeping with the requirements of Section V., ¶ 18, that it has complied with ¶ 35, above, in that the hydraulic model accurately assesses the hydraulic capacity of the WCTS. To be able to so certify, the City shall review supporting documentation for the model and prepare a summary that evaluates whether the model complies with the requirements set forth in this Section, and if not, set forth an explanation of shortcomings. The City shall submit for review and comment the summary and certification in searchable electronic form within twelve (12) months of the Effective Date of the Consent Decree.

37. Upon receipt of the information submitted pursuant to Section VI. D. ¶ 36, EPA may require the City to provide, within two (2) months of its request, a detailed hydraulic model report, which shall include:

(a). a description of the hydraulic model;

(b). specific attributes, characteristics, and limitations of the hydraulic model;

(c). identification of all input parameters, constants, assumed values, and expected outputs;

(d). digitized map(s) and schematics that identify and characterize portions of the WCTS in the hydraulic model, including the specific gravity sewer lines;

(e). identification of input data;

(f). configuration of the hydraulic model;

(g). procedures and protocols for performance of sensitivity analyses (i.e., how the hydraulic model responds to changes in input parameters and variables);

(h). procedures for calibrating the hydraulic model to account for values representative of the WCTS and WWTP using actual system and WWTP flow data; and

(i). procedures to verify the hydraulic model's performance using additional independent actual system and WWTP flow data.

38. Upon review of the hydraulic model report submitted in keeping with ¶ 37, EPA may require that the City correct deficiencies in accordance with the time period set forth in Section V (Review, Approval, and Implementation of Deliverables) ¶ 16 .

E. CAPACITY ASSESSMENT

39. The City shall commence a capacity assessment of the WCTS and WWTP within sixteen (16) months from the Effective Date of this Consent Decree. The capacity assessment shall utilize information gathered from: (1) development of the hydraulic model; (2) information from any SSA analyses; (3) the collection system remedial measures plans, Pumping Station and Force Main evaluation, siphons and respective related appurtenances data, and all SSOs; and (4) and any other information about the WCTS necessary to develop a technically sound assessment.

40. The capacity assessment shall identify existing hydraulic capacities of the WCTS and compare those to future projected average and peak dry and wet weather flows for the period of twenty years from the Effective Date of the Consent Decree. The capacity assessment shall identify those portions of the WCTS that are expected to cause or contribute to SSOs and/or overloading at the WWTP under existing and future projected average and peak dry and wet

weather flows, and the degree to which those portions experience or cause SSOs and/or overloading at the WWTP under current or projected future conditions,

41. The capacity assessment shall include:

(a). verified existing rainfall and flow data, and, where necessary, additional rainfall and flow data collected by monitoring WWTP flows at key locations throughout the WCTS and monitoring rainfall and groundwater at appropriate WCTS locations;

(b). additional dry and wet weather flow and rainfall monitoring as needed, where review of existing data is inadequate to satisfy the capacity assessment;

(c). dry weather monitoring to allow characterization of base flows and Infiltration rates;

(d). wet weather monitoring following events of duration and intensity which cause significant I/I so as to allow the collection of rainfall and flow monitoring data with the rainfall and flow monitoring network designed, installed, operated, and maintained to provide representative, accurate, and precise data of sufficient quality for at least ninety percent of the scheduled operation time for each flow meter;

(e). network of rain gauge stations in accordance with sound engineering practice to monitor the rainfall contribution to a Sewershed within the City's jurisdictional boundaries;

(f). flow data using permanent and/or temporary flow monitors placed at locations in the WCTS necessary to allow the characterization of flow from each Sewershed service area and inspect, maintain, and, if necessary, calibrate all flow monitors at least once per week;

(g). existing flows for each Sewershed and sub-basin within the WCTS;

(h). average and peak daily dry weather flow;

(i). average dry weather Infiltration rate in gpd/inch diameter-mile;

(j). peak wet weather flow and peaking factors, i.e., the ratio of peak flow to average dry weather flow;

(k). the nominal and actual peak flow capacity of all major gravity lines, Force Mains, syphons, Pumping Stations, and WWTPs; and

(l). a summary of activities undertaken to configure, calibrate, and verify the hydraulic model used in conducting the capacity assessment, as well as a report on model runs.

42. In developing the capacity assessment, the City shall certify, in keeping with the requirements of Section V. ¶ 18, that the assessment reflects the hydraulic capacity of the WCTS as required under this Section. The City shall review supporting documentation and prepare a summary that evaluates whether the capacity assessment complies with the requirements set forth in this Section, and if not, set forth an explanation of shortcomings. Upon submission of the capacity assessment summary to EPA, the City also shall submit its certification for review and comment in accordance with Section V (Review, Approval, and Implementation of Deliverables). All documents shall be submitted to EPA in searchable electronic form within twenty-two (22) months from the Effective Date of this Consent Decree.

43. The City shall submit a capacity assessment report to EPA within twenty-two (22) months from the Effective Date of this Consent Decree in keeping with Section V (Review, Approval, and Implementation of Deliverables) ¶ 16 . The report shall:

(a). specify existing flows for each Sewershed and sub-basin within the WCTS;

(b). specify average and peak daily dry weather flow;

(c). specify average dry weather Infiltration rate in gpd/inch diameter-mile;

(d). specify peak wet weather flow and peaking factors, i.e., the ratio of peak flow to average dry weather flow;

(e). provide a summary of flow monitoring activities, including a map designating the boundaries of each Sewershed, the location and type of each flow monitor, the problems encountered in conducting flow monitoring activities, and a description of calibration and verification activities, including scattergraphs and calibration and verification graphs;

(f). specify the nominal and actual peak flow capacity of all major gravity lines, Force Mains and syphons, Pumping Stations, and WWTPs;

(g). provide a summary of activities undertaken to configure, calibrate, and verify the hydraulic model used in conducting the capacity assessment, as well as a report on model runs.

(h). provide a summary of the technical approach applied for capacity assessment analyses and of how the capacity assessment was conducted, specifying measures taken to assess capacity;

(i). identify all portions of the WCTS with insufficient capacity to convey peak wet weather flows, assuming insufficient capacity is the inability of the sewer, Pumping Station, or Force Main to convey peak flows without surcharge sufficient to cause SSOs under either predicted peak wet weather or predicted average conditions, or both; and

(j). identify any insufficient capacity in the WWTP, assuming insufficient capacity is the inability to provide full treatment to all flow reaching the plant and discharge those flows in full compliance with the LPDES Permits.

44. Upon review, EPA shall notify the City of any deficiencies in the capacity assessment report and require correction of these deficiencies within the time period specified in Section V ((Review, Approval, and Implementation of Deliverables), ¶ 16.

F. CAPACITY ASSESSMENT REMEDIATION MEASURES PLAN

45. The City shall submit to EPA for review and approval a capacity assessment remediation measures plan within twenty-six (26) months from the Effective Date of this Consent Decree. This plan shall include measures and schedules which, when implemented, will result in Adequate Capacity in the WCTS and/or the WWTP, such that SSOs and overloading at the WWTP and WWTP LPDES Permit noncompliance will be eliminated under current and anticipated future increased capacity conditions. The capacity assessment remediation measures plan shall be submitted pursuant to Section V (Review, Approval, and Implementation of Deliverables), ¶¶ 12 -15.

46. The City shall, in keeping with the requirements of Section V., ¶ 18, audit its capacity assessment remediation measures plan and certify, that the plan provides measures which will result in Adequate Capacity in the WCTS and/or its WWTP, such that SSOs and overloading at the WWTP, and WWTP LPDES Permit noncompliance will be eliminated under current and anticipated future increased capacity conditions. The City shall submit for review and comment the certification in conjunction with submission of the capacity assessment remediation measures plan in searchable electronic form.

47. The capacity assessment remediation measures plan shall:

(a). identify all measures necessary to achieve Adequate Capacity, and if insufficient capacity to accommodate projected peak wet weather flows existing in any portion of the WCTS or WWTP(s), and propose measures to provide Adequate Capacity to eliminate SSOs and/or overloading at the WCTS and WWTP(s). Specific remedial measures to address capacity limitations may include increases in Pumping Station and sewer capacity in the WCTS, construction of storage or equalization basin facilities, and increases in wastewater treatment capacity;

(b). identify upgrades and repair measures to achieve WWTP compliance with all LPDES Permit requirements;

(c). provide estimated capital, operation and maintenance, and present value costs for each identified remedial measure in year-specific dollars; and

(d). provide a fixed end-date schedule to design, construct, and implement all proposed measures as expeditiously as possible, including interim dates for initial design, design completion, completed permitting, contract award, construction commencement, and completed construction for each proposed measure. The schedule shall provide that all tasks shall be completed as expeditiously as possible but in no event later than the deadline set forth in ¶ 50.

48. Should the capacity assessment remediation measures plan require revision of the sewer system remediation measures plan(s) developed according to Section VI. C., the City shall identify all measures requiring revisions within the capacity assessment remediation measures plan, and upon approval of these revisions by EPA, amend the sewer system remediation measures plan(s) to include the approved revisions.

49. Upon approval by EPA, the City shall implement the remedial measures in the capacity assessment remediation measures plan in accordance with the schedule contained therein and shall certify to EPA on an annual basis those measures which have been completed. The certification shall be submitted annually in accordance with Section VIII (Reporting Requirements), ¶ 60.

50. The measures specified within the capacity assessment remediation measures plan shall be completed no later than twelve (12) years from the Effective Date of this Consent Decree.

G. COLLECTION SYSTEM MANAGEMENT, OPERATION, AND PREVENTATIVE MAINTENANCE PROGRAM

51. The City shall develop and implement a collection system management, operation, and preventative maintenance (CMOM) program pursuant to the requirements set forth within this paragraph. The CMOM shall address all Basins identified within Section VI (Compliance Requirements), and be adapted, as necessary, on an ongoing basis, such that Shreveport remains in compliance with all applicable requirements of the CWA, the LWCL, and all regulations and LPDES Permits issued thereunder pertaining to it. Unless otherwise stated, each requirement shall be completed within one year from the Effective Date of this Consent Decree. The CMOM shall include:

(a). a current WCTS component and critical equipment inventory;

(b). procedures for reassessing the WCTS, including reassessments of the basins identified in SSA Phases 1, 2, and 3, which reassessments shall commence no later than

eight (8) years from the Effective Date of this Consent Decree and be completed no later than twelve (12) years from the Effective Date of this Consent Decree, to be comprised of:

(i). a condition reassessment of the WCTS;

(ii). a reinvestigation of the WCTS, including Private Laterals, using methods such as smoke testing, visual inspections, dyed water flooding, flow isolation, and CCTV, with a minimum of fifteen per cent of the WCTS investigated per year and CCTV used for at least eight per cent of that annual investigation, and with the first three (3) phases of the WCTS to be completed by year twelve; and

(iii). a report regarding reassessment of the basins identified in SSA Phases 1, 2, and 3 identified in ¶ 51. (b). above, to be submitted annually in accordance with Section VIII (Reporting Requirements), ¶ 60, beginning in year nine (9) and every year thereafter through year twelve (12), documenting the actions required under ¶ 51. (b). (i).-(ii)., specifying:

(aa). defects in the WCTS that materially threaten the structural integrity of the pipe or structure;

(bb). defects in the WCTS that allow Infiltration, Inflow, or exfiltration;

(cc). pipe defects, including, but not limited to, cracks, holes, corrosion, misaligned joints, root intrusion, sags, or improper lateral taps that make the pipe or structure prone to grease, root, or debris blockages;

(dd). a sliding scale ranking the defects of each inspected pipe or structure by severity;

(ee). whether the pipe or structure requires short or long term repair;

(ff). changes needed to cleaning frequency; and

an estimate of the remaining life expectancy of the pipe or structure.

(c). procedures for a sewer overflow response plan, to include investigations of SSOs using CCTV or other applicable inspection methods, as soon as practicable but no later than twenty-four hours after notice of such SSOs, with inspection of Gravity Sewer pipes in high maintenance areas as well as blockage associated with such SSOs;

(d). procedures to clean WCTS Gravity Sewer pipe lines as necessary, but requiring a minimum of fifteen per cent of all such lines be cleaned annually, commencing on the Effective Date of this Consent Decree, with the cleaning of all WCTS Gravity Sewer pipe lines completed no later than eighty-four (84) months from the Effective Date of this Consent Decree;

(e). procedures for routine annual preventative maintenance of Pumping Stations and Force Mains;

(f). procedures for sealing and maintenance of manholes as necessary;

(g). procedures for identification and remediation of problem construction;

(h). procedures, including testing of new sewer installations, to ensure new sewers and connections are properly designed and constructed in accordance with approved City design standards to prevent overflows;

(i). procedures to ensure repair, rehabilitation, and replacement projects are properly designed, constructed, and tested to prevent overflows, including the repair of all defects in manholes, Gravity Sewer pipes, and Private Laterals within ninety days of discovery of that

defect, except if line replacement is required, wherein repair shall be completed within one hundred and eighty days of such discovery, with the City maintaining a log documenting the date and type of each sewer pipe and/or structure repair completed during the previous year, and a log of all sewer line defects at risk of collapsing and therefore needing expeditious repair/replacement, to include the date of discovery of such defect, the repair or replacement schedule for that defect, and the projected date for completion of such repair and replacement;

(j). a Fats, Oils, and Grease (FOG) control program to include, at a minimum:

(i). the legal authority to control the discharge of FOG into the WCTS, including the ability to implement a permit and enforcement program;

(ii). specification of accepted devices to control the discharge of FOG into the WCTS;

(iii). establishment of standards for the design and construction of FOG control devices including standards for capacity and accessibility;

(iv). establishment of FOG control device management, operations, and maintenance standards or best management practices that address onsite record keeping requirements, cleaning frequency, cleaning standards, use of additives, and ultimate disposal;

(v). establishment of construction inspection protocols, including scheduling, inspection report forms, and inspection record keeping requirements, to assure that FOG control devices are constructed in accordance with established design and construction standards;

(vi). establishment of compliance inspection protocols, including scheduling, inspection report forms, and inspection record keeping requirements to assure that

FOG control devices are being managed, operated, and maintained in accordance with the established management, operations, and maintenance standards or best management practices;

(vii). establishment of a FOG disposal manifest system;

(viii). establishment of an enforcement program, including specific enforcement mechanisms, to ensure compliance with the FOG control program;

(ix). establishment of a compliance assistance program to facilitate training of FOG generators and their employees;

(x). establishment of a public education program directed at reducing the amount of FOG entering the WCTS from private residences;

(xi). establishment of staffing (technical and legal) and equipment requirements to ensure effective implementation of the FOG control program;

(xii). a FOG characterization study that shall indentify the sources of FOG causing problems in the WCTS and the best method or mechanism for addressing those sources;

(xiii). a list of current commercial establishment FOG generators, including a description of their FOG generating processes and average daily discharge volume; and

(xiv). establishment of performance indicators to be used by the City to measure the effectiveness of the FOG Control Program;

(k). a root control program to schedule corrective measures, including short-term mitigation and routine maintenance of root intrusion and rehabilitation of areas in which root intrusion has caused recurring blockages, such as sewer replacement or relining and an

inspection program for known problem areas, to be implemented within one hundred-eighty days from the Effective Date of this Consent Decree;

(l). a procedure for documenting complaints, work orders, updates to equipment inventory, and changes to WCTS components, including entry of such information into a data management system to provide accurate information for scheduling and tracking preventative maintenance activities;

(m). procedures for corrective maintenance response and reporting procedures;

(n). procedures to ascertain that personnel are trained and certified in accordance with Louisiana law such that they are qualified to conduct, operate, maintain, and use equipment and infrastructure to promptly identify causes of noncompliance with the CWA;

(o). a quality control program to assess WCTS failures and operational variables leading to such failures;

(p). procedures for annual updates of operation and maintenance manuals;

(q). procedures to address Private Laterals which are sources of I&I and contribute to SSOs, with such procedures to include provision for the City to obtain legal authorization to require owner(s) of Private Laterals to take action to prevent SSOs, with such authorization to include:

(i). the City's right to require owner(s) of Private Laterals to repair, rehabilitate, replace, or take other appropriate action within a specified time period to prevent SSOs;

(ii). the City's right to disconnect water services should that owner(s) fail to comply with the requirements of (i) in a timely manner; and

(iii). restore water services at such time when the requirements set forth in (i) have been completed.

(r). procedures and an ongoing schedule in order to appropriately reassess WCTS capacity in keeping with the requirements set forth under Section VI. E. ¶¶ 40 and 41.

52. The City shall review the CMOM program, and certify, in keeping with the requirements of Section V., ¶ 18, that the Section VI. G. ¶ 51 criteria have been attained, and if not, set forth an explanation of shortcomings. Upon submission of the CMOM program to EPA, the City also shall submit the summary and certification. All documents shall be submitted to EPA in searchable electronic form within twelve (12) months from the Effective Date of this Consent Decree. EPA shall notify the City of any deficiencies and require correction of these deficiencies within a specified time period.

53. The City shall submit a report annually, in accordance with Section VIII (Reporting Requirements), ¶ 60, which report shall describe all CMOM Section VI. G. ¶ 51 implementation activities completed within the previous year.

H. WASTEWATER TREATMENT PLANT OPERATION AND REVENTATIVE MAINTENANCE (O&M) PROGRAM

54. The City shall comply with the requirements of the Wastewater Treatment Plant Operation and Maintenance Program(s) attached at Appendix B.

VII. CIVIL PENALTY

57. Shreveport shall pay the sum of six hundred and fifty thousand dollars ($650,000) as a civil penalty in accordance with the provisions of Paragraphs 58 and 59.

58. Within thirty (30) Days after the Effective Date of this Consent Decree, Shreveport shall pay to the United States fifty per cent (50%) of the civil penalty amount of six hundred and fifty thousand dollars ($650,000), or three hundred and twenty-five thousand dollars ($325,000), due by FedWire Electronic Funds Transfer ("EFT") to the U.S. Department of Justice in accordance with written instructions to be provided to Shreveport following lodging of the Consent Decree, to be forwarded by the Financial Litigation Unit of the U.S. Attorney's Office for the Western District of Louisiana; 300 Fannin Street, Suite 3201; Shreveport, Louisiana 71101-3068; Telephone (318) 676-3635. At the time of payment, Shreveport shall send a copy of the EFT authorization form and EFT transaction record, together with a transmittal letter to the United States, stating that the payment is for the civil penalty owed pursuant to the Consent Decree in United States *et al.* v. City of Shreveport, and referencing the district court civil action number and DOJ case # 90-5-1-1-2767/1 in accordance with Section XV (Notices) of this Consent Decree by email to acctsreceivable.CINWD@epa.gov and by first class mail to:

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

In the event that full cash payment to the United States is not made within thirty (30) Days of the Date of Entry, Shreveport shall pay to the United States interest on the balance due from the original due date to the date of payment, at the rate calculated pursuant to 28 U.S.C. § 1961.

59. Within thirty (30) days after the Effective Date of this Consent Decree, Shreveport shall pay to the State fifty percent (50%) of the civil penalty amount of six hundred and fifty thousand dollars ($650,000), or three hundred and twenty-five thousand dollars($325,000), due

by certified check made payable to the Louisiana Department of Environmental Quality and forwarded by first class mail to the: Fiscal Director; Office of Management and Finance; Louisiana Department of Environmental Quality; PO Box 4303; Baton Rouge, Louisiana 70821-4303.

VIII. REPORTING REQUIREMENTS

60. Annual Reports. Beginning sixty (60) Days after the first (1st) full twelve (12) Month period following the Effective Date, and sixty (60) Days after each subsequent twelve (12) Month period until termination of this Consent Decree, Shreveport shall submit to EPA and LDEQ for review and comment an Annual Report in accordance with Section V (Review, Approval, and Implementation of Deliverables). Each Annual Report shall cover the most recent twelve (12) Month period and shall include:

(a). a summary of the CMOM Programs implemented or modified pursuant to this Consent Decree, including a comparison of actual performance with any performance measures that have been established.

(b). as to reporting for SSOs: For the first (1st) five (5) Annual Reports only, Shreveport shall include a trends analysis of the number, volume, duration, and cause of Shreveport's SSO Events for a twenty-four (24)-Month rolling period updated to reflect the SSO Events that occurred during the previous twelve (12)-Month period. Beginning with the sixth (6th) Annual Report, Shreveport shall include a trends analysis of the number, volume, duration, and cause of Shreveport's SSO Events for a five (5)-year rolling period updated to reflect the SSO Events that occurred during the previous twelve (12)-Month period. In reporting trends and other SSO data, Shreveport shall provide the information in such format as it deems appropriate.

(c). a description of projects and activities completed and milestones achieved during the previous applicable twelve (12)-Month period pursuant to the requirements of this Consent Decree, the status of compliance or non-compliance with the requirements of this Consent Decree and, if applicable, the reasons for non-compliance. If any non-compliance cannot be fully explained at the time the report is due, Shreveport shall include a statement to that effect in the report. Shreveport shall investigate to determine the cause of the non-compliance and then shall submit an amendment to the report for review and comment, including a full explanation of the cause of the non-compliance, in accordance with Section V. (Review, Approval, and Implementation of Deliverables), ¶ 16.

(d). a summary of significant projects and activities anticipated to be performed, and milestones anticipated to be achieved, in the successive applicable twelve (12) Month period to comply with the requirements of this Consent Decree.

(e). any additional information Shreveport determines is appropriate to demonstrate that Shreveport is implementing the remedial actions required under this Consent Decree in an adequate and timely manner.

61. Except as otherwise provided herein, whenever any violation of this Consent Decree or any other event affecting Shreveport's performance under this Consent Decree or its LPDES Permits may pose an immediate threat to the public health or welfare or the environment, Shreveport shall notify EPA and LDEQ orally or by electronic or facsimile transmission as soon as possible, but no later than twenty-four (24) hours after Shreveport first knew of the violation or event.

62. All reports shall be submitted to the persons designated in Section XV (Notices) of this Consent Decree for EPA and LDEQ, and shall be certified pursuant to Section V (Review, Approval, and Implementation of Deliverables), ¶ 18 of this Consent Decree. The certification requirement in Section V (Review, Approval, and Implementation of Deliverables), ¶ 18 does not apply to emergency or similar notifications where compliance would be impractical.

63. Compliance with this Section does not relieve Shreveport of any other reporting obligations required by the CWA, the LWCL, or implementing regulations, or by any other Federal, state, or local law, regulation, permit, or other requirement, including LPDES Permits.

64. Notification to EPA or LDEQ pursuant to this Section of an anticipated delay shall not by itself excuse the delay or otherwise satisfy the notification requirements set forth in Section X (Force Majeure).

65. Any information provided pursuant to this Consent Decree may be used by the United States and the State in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

IX. STIPULATED PENALTIES

66. Shreveport shall be liable for stipulated penalties to the United States and the State for violations of this Consent Decree as specified below, unless excused under Section X (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Consent Decree, including any work plan or schedule approved under this Consent Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules established by or approved under this Consent Decree.

67. If Shreveport fails to pay the required civil penalty to the United States and the State as set forth under Section VII (Civil Penalty) when due, Shreveport shall pay a stipulated penalty of $2,000 per day for each day that the payment is late.

68. The following stipulated penalties shall accrue for each violation identified below:

(a). Failure to Submit Timely and Complete Deliverables. Shreveport shall be liable to pay stipulated penalties to the United States and the State for each Day it fails to submit and/or complete the Deliverables required under Section VI (Compliance Requirements) and Section V (Review, Approval, and Implementation of Deliverables), as set forth below, for each Day it fails to submit a Deliverable by the specified due dates or to make any required material changes to such Deliverables within the required time frames. The stipulated penalties for failure to meet each Deliverable submission date shall be as follows:

Period of Noncompliance	Penalty per Violation per Day
1st to 30th Day	$500
30th to 60th Day	$1,500
More than 60 Days	$2,500

(b). Timely Completion of Compliance Requirements. Shreveport shall be liable to pay stipulated penalties to the United States and the State as set forth below for each Day it fails timely to satisfy any of the remedial requirements of Section VI (Compliance Requirements) of this Consent Decree. The stipulated penalties for failure to meet each such requirement shall be as follows:

Period of Noncompliance	Penalty per Violation per Day
1st to 30th Day	$750

31st to 60th Day	$1,500
60 to 180 Days	$2,500
More than 180 Days	$4,000

(c). SSOs that Reach Navigable Waters of the United States or State Waters. For each SSO that reaches navigable waters of the United States as defined in Section 502(7) of the CWA, 33 U.S.C. § 1362(7), or State waters as defined in the LWCL, LA. R. S. 30:2073(7) , Shreveport shall be liable to pay stipulated penalties to the United States and the State in the amount of:

If SSO Occurs	Penalty Per Violation Per Day
Within 3 years from the Effective Date	$500
Between 3 and 6 years from the Effective Date	$1,500
More Than 6 years from the Effective Date	$3,000

(d). SSOs that Do Not Reach Waters of the United States or State Waters. For each SSO that does not reach either navigable waters of the United States or waters of the State and falls within the definition of a SSO for the purposes of this Consent Decree, Shreveport shall be liable to pay stipulated penalties to the United States and the State as follows:

If SSO Occurs	Penalty Per Violation Per Day
Within 3 years from the Effective Date	$350
Between 3 and 6 years from the Effective Date	$750
More than 6 years from the Effective Date	$1,500

(e). Reporting Requirements. Shreveport shall be liable to pay stipulated penalties to the United States and the State in the amounts specified below for each Day after the due date specified in Section VIII (Reporting Requirements), ¶ 57, that the annual report is late:

Period of Noncompliance	Penalty Per Violation Per Day
1st through 14th Day	$350
15th through 30th Day	$750
31st Day and Beyond	$1,500

69. Stipulated penalties under Section IX (Stipulated Penalties) shall automatically begin to accrue on the first Day that an event occurs for which a stipulated penalty is payable and shall continue to accrue through the final Day of correction of the noncompliance. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree.

70. Shreveport shall pay stipulated penalties set forth pursuant to Section IX (Stipulated Penalties) ¶¶ 66-69 within thirty (30) Days of receipt of a written demand by the EPA (made in consultation with the LDEQ), and in keeping with those requirements set forth in Section VII (Civil Penalty) ¶¶ 58 and 59.

71. Subject to the provisions of Section XIII (Effect of Settlement/Reservation of Rights) of this Consent Decree, the stipulated penalties provided for herein shall be in addition to any other rights, remedies, or sanctions available to the United States and/or the State by reason of Shreveport's failure to comply with requirements of this Consent Decree and any and all applicable laws, regulations, and/or permits. Where a violation of this Consent Decree is also a violation of relevant statutory or regulatory requirements, Shreveport shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

72. Stipulated penalties shall continue to accrue as provided herein during any Dispute Resolution, but need not be paid until the following:

(a). If the dispute is resolved by agreement or a decision of EPA that is not appealed to the Court, Shreveport shall pay accrued penalties determined to be owing, within thirty (30) Days of the effective date of the agreement or the receipt of EPA's decision.

(b). If the dispute is appealed to the Court and the EPA prevails in whole or in part, Shreveport shall pay all accrued penalties determined by the Court to be owing, within sixty (60) Days of receiving the Court's decision or order, except as provided in (c)., below.

(c). If any Party appeals the District Court's decision, Shreveport shall pay all accrued penalties determined to be owing, together with interest, within fifteen (15) Days of receiving the final appellate court decision.

73. EPA may, in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due under this Consent Decree.

74. Shreveport shall be liable to pay stipulated penalties owing in the manner set forth and with the confirmation notices required by Section VII (Civil Penalty) except that the transmittal letters shall state that the payment is for stipulated penalties and shall state for which violation(s) the stipulated penalties are being paid.

75. If Shreveport fails to pay stipulated penalties according to the terms of this Consent Decree, Shreveport shall be liable for interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due. Nothing in this Section shall be

construed to limit the United States from seeking any remedy otherwise provided by law for Shreveport's failure to pay any stipulated penalties.

X. FORCE MAJEURE

76. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Shreveport, of any entity controlled by Shreveport, or of Shreveport's consultants and contractors, that delays or prevents the performance of any obligation under this Consent Decree despite Shreveport's best efforts to fulfill the obligation. The requirement that Shreveport exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any such event, (a), as it is occurring, and (b), after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. "Force Majeure" does not include Shreveport's financial inability to perform any obligation under this Consent Decree.

77. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, Shreveport shall provide written notice to EPA and LDEQ, within twenty-one (21) days from the date that Shreveport first knew that the event might cause a delay. Such written notice shall include the following: an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Shreveport's rationale for attributing such delay to a force majeure event if it intends to assert such a claim; and a statement as to whether, in the opinion of Shreveport, such event may cause or contribute to an endangerment to public health, welfare, or the environment. Shreveport

shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure event. Failure to comply with the above requirements shall preclude Shreveport from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Shreveport shall be deemed to know of any circumstance of which Shreveport, any entity controlled by Shreveport, or Shreveport's contractors knew or should have known.

78. If EPA, after a reasonable opportunity for review and comment by LDEQ, agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA, after a reasonable opportunity for review and comment by LDEQ, for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. EPA will notify Shreveport in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

79. If EPA, after a reasonable opportunity for review and comment by LDEQ, does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify Shreveport in writing of its decision.

80. If Shreveport elects to invoke the dispute resolution procedures set forth in Section XI (Dispute Resolution), it shall do so no later than fifteen (15) Days after receipt of EPA's notice. In any such proceeding, Shreveport shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be

warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Shreveport complied with the requirements of ¶¶ 76 and 77, above. If Shreveport carries this burden, the delay at issue shall be deemed not to be a violation by Shreveport of the affected obligation of this Consent Decree identified to EPA and the Court.

XI. DISPUTE RESOLUTION

81. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. Shreveport's failure to seek resolution of a dispute under this Section shall preclude Shreveport from raising any such issue as a defense to an action by the United States or the State to enforce any obligation of Shreveport arising under this Consent Decree.

82. Informal Dispute Resolution. Any dispute subject to Dispute Resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when Shreveport sends the United States a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed thirty (30) Days from the date the dispute arises, unless that period is modified by written agreement between the United States and Shreveport. The United States shall consult with the State during the period of informal negotiations. If the United States and Shreveport cannot resolve a dispute by informal negotiations, then the position advanced by the United States shall be considered binding unless, within forty-five (45) Days after the conclusion of the informal negotiation period, Shreveport invokes formal dispute resolution procedures as set forth below.

83. Formal Dispute Resolution. Shreveport shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States and the State a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting Shreveport's position and any supporting documentation relied upon by Shreveport. The United States shall serve its Statement of Position within sixty (60) Days of receipt of Shreveport's Statement of Position. The United States' Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States. The United States shall consult with the State during preparation of its Statement of Position. The United States' Statement of Position shall be binding on Shreveport, unless Shreveport files a motion for judicial review of the dispute in accordance with the following Paragraph.

84. Judicial Dispute Resolution. Shreveport may seek judicial review of the dispute by filing with the Court and serving on the United States and the State, in accordance with Section XV (Notices) of this Consent Decree, a motion requesting judicial resolution of the dispute. The motion must be filed within thirty (30) Days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Shreveport's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree. The United States shall respond to Shreveport's motion within the time period allowed by the Local Rules of this Court ("Local Rules"). The United States shall consult with the State during

preparation of its response. Shreveport may file a reply memorandum, to the extent permitted by the Local Rules.

85. Standard of Review.

(a). Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Decree, in any dispute brought under ¶¶ 83 and 84 pertaining to the adequacy or appropriateness of plans, procedures to implement plans, schedules or any other items requiring approval by EPA under this Consent Decree; the adequacy of the performance of work undertaken pursuant to this Consent Decree; and all other disputes that are accorded review on the administrative record under applicable principles of administrative law, Shreveport shall have the burden of demonstrating, based on the administrative record, that the position of the United States is arbitrary and capricious or otherwise not in accordance with law.

(b). Other Disputes. Except as otherwise provided in this Consent Decree, in any other dispute brought under ¶¶ 83 and 84, Shreveport shall bear the burden of demonstrating that its position complies with this Consent Decree and furthers the objectives of the Consent Decree.

86. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of Shreveport under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first (1st) day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided in ¶ 72. If Shreveport does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section IX (Stipulated Penalties).

XII. RIGHT OF ENTRY AND INFORMATION COLLECTION AND RETENTION

87. The United States, the State, and their representatives, including attorneys, contractors, and consultants, shall have the right of entry into any facility covered by this Consent Decree, at all reasonable times, upon presentation of credentials, to:

(a). Monitor the progress of activities required under this Consent Decree;

(b). Verify any data or information submitted to the United States or the State in accordance with the terms of this Consent Decree;

(c). Obtain samples and, upon request, splits of any samples taken by Shreveport or its representatives, contractors, or consultants;

(d). Obtain documentary evidence, including photographs and similar data; and

(e). Assess Shreveport's compliance with this Consent Decree.

88. Upon request, Shreveport shall provide EPA and LDEQ or their authorized representatives splits of any samples taken by Shreveport. Upon request, EPA and LDEQ shall provide Shreveport splits of any samples taken by EPA or LDEQ.

89. Until five (5) years after the termination of this Consent Decree, Shreveport shall retain, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate in any manner to Shreveport's performance of its obligations under this Consent Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United

States or the State, Shreveport shall provide copies of any documents, records, or other information required to be maintained under this Paragraph.

90. After the conclusion of the information-retention period provided in the preceding Paragraph, Shreveport shall notify the United States and the State at least ninety (90) Days prior to the destruction of any documents, records, or other information subject to the requirements of the preceding Paragraph and, upon request by the United States or the State, Shreveport shall deliver any such documents, records, or other information to EPA or LDEQ. Shreveport may assert that certain documents, records, or other information is privileged under the attorney-client privilege or any other privilege recognized by federal law. If Shreveport asserts such a privilege, it shall provide the following:

(a). the title of the document, record, or information;

(b). the date of the document, record, or information;

(c). the name and title of each author of the document, record, or information;

(d). the name and title of each addressee and recipient;

(e). a description of the subject of the document, record, or information; and

(f). the privilege asserted by Shreveport.

However, no documents, records, or other information created or generated pursuant to the requirements of this Consent Decree shall be withheld on grounds of privilege.

91. Shreveport may also assert that information required to be provided under this Section is protected as Confidential Business Information ("CBI") under 40 C.F.R. Part 2 and LA. R.S. 30:2030. As to any information that Shreveport seeks to protect as CBI, Shreveport shall follow the procedures set forth in 40 C.F.R. Part 2 and LAC 33:1. Chapter 5.

92. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States or the State pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of Shreveport to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XIII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

93. This Consent Decree resolves the civil claims of the United States and the State for the violations alleged in the Complaint filed in this action through the Effective Date of this Consent Decree. Pursuant to CWA Section 309(e), 33. U.S.C. § 1319(e), however, the United States specifically reserves its claims against the State and the State reserves any and all defenses.

94. The United States and the State reserve all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as expressly stated in ¶ 93. This Consent Decree shall not be construed to limit the rights of the United States or the State to obtain penalties or injunctive relief under the CWA, the LWCL, or their implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as expressly specified in ¶ 93 of this Section. The United States and the State further reserve all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, Shreveport's Sewer System, whether related to the violations addressed in this Consent Decree or otherwise.

95. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, civil penalties, other appropriate relief relating to the

Sewer System or Shreveport's violations, Shreveport shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to ¶ 93 of this Section.

96. This Consent Decree is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. Shreveport is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and Shreveport's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States and the State do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that Shreveport's compliance with any aspect of this Consent Decree will result in compliance with provisions of the CWA, the LWCL, or with any other provisions of federal, State, or local laws, regulations, or permits.

97. This Consent Decree does not limit or affect the rights of any of the Parties against any third parties, not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against Shreveport, except as otherwise provided by law.

98. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XIV. COSTS

99. The Parties shall bear their own costs of this action, including attorneys' fees, except the United States and the State shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty, any stipulated penalties due but not paid by Shreveport, and to enforce injunctive relief.

XV. NOTICES

100. Unless otherwise specified herein, whenever Deliverables, notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

To the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
Environmental Enforcement Section
U.S. Department of Justice; Attention: Elizabeth F. Kroop
Box 7611; Ben Franklin Station
Washington, D.C. 20044-7611

To the EPA:

Gladys Gooden-Jackson
Water Enforcement Branch (6EN-WC
EPA, Region 6
1445 Ross Ave; Suite 1200
Dallas, Texas 75202-2733

To the State (LDEQ):

Cheryl S. Nolan
Assistant Secretary
Office of Environmental Compliance
Louisiana Department of Environmental Quality
P.O. Box 4312
Baton Rouge, LA 70821-4312

Perry Theriot
Attorney, Legal Division
Louisiana Department of Environmental Quality
P.O. Box 4302
Baton Rouge, LA 70821-4312

101. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

102. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVI. EFFECTIVE DATE

103. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court or a motion to enter the Consent Decree is granted, whichever occurs first, as recorded on the Court's docket.

XVII. RETENTION OF JURISDICTION

104. The Court shall retain jurisdiction over this case until termination of this Consent Decree for the purpose of resolving disputes arising under this Consent Decree or entering orders modifying this Consent Decree, pursuant to Section XI (Dispute Resolution) and Section XVIII (Modification), or effectuating or enforcing compliance with the terms of this Consent Decree.

XVIII. MODIFICATION

105. The terms of this Consent Decree, including any attached appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Consent Decree, it shall be effective only upon

approval by the Court. Non-material changes to this Consent Decree (including appendices) may be made by written agreement of the Parties without court approval, and the Parties may by mutual agreement determine whether a modification is non-material.

106. Any disputes between the Parties concerning modification of this Consent Decree shall be resolved pursuant to Section XI (Dispute Resolution), provided, however, that, instead of the burden of proof provided by ¶ 85, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XX. TERMINATION

107. This Consent Decree may be terminated when the United States determines that Shreveport has satisfactorily completed performance of its compliance obligations as required by Section VI (Compliance Requirements) this Consent Decree, provided that Shreveport has fulfilled all other obligations of this Consent Decree, including payment of the civil penalty under Section VII (Civil Penalty) and any accrued stipulated penalties as required by Section IX (Stipulated Penalties) of this Consent Decree not waived or reduced by the United States. Shreveport may serve upon the United States, a Request for Termination, certifying that Shreveport has satisfied those requirements, together with all necessary supporting documentation.

108. Following receipt by the United States of Shreveport's Request for Termination, the United States and Shreveport shall confer informally concerning the Request and any disagreement that they may have as to whether Shreveport has satisfactorily complied with the requirements for termination of this Consent Decree. If the United States, after consultation with

the State, agrees that this Consent Decree may be terminated, the United States and Shreveport shall submit, for the Court's approval, a joint stipulation terminating the Consent Decree.

109. If the United States, after consultation with the State, does not agree that this Consent Decree may be terminated, Shreveport may invoke Dispute Resolution under Section XI of this Consent Decree. However, Shreveport shall not seek Dispute Resolution of any dispute regarding termination, under ¶ 83 of Section XI (Dispute Resolution), until ninety (90) Days after service of its Request for Termination.

XX. PUBLIC PARTICIPATION

110. After this Consent Decree has been executed by the Parties, it shall be lodged with the Court for a period of not less than thirty (30) Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Shreveport consents to entry of this Consent Decree without further notice, and agrees not to withdraw from, or oppose entry of this Consent Decree by the Court, or to challenge any provision of the Consent Decree, unless the United States has notified the Parties in writing that it no longer supports entry of the Consent Decree.

The Parties also acknowledge that approval by the State and entry of this Decree is subject to LA. R. S. 30:2050.7, which provides for public notice of this Consent Decree in newspapers of general circulation and official journals of the parish in which Defendant's Facility is located, and the opportunity for public comment, consideration of any comments, and concurrence by the State Attorney General.

XXI. SIGNATORIES/SERVICE

111. Each undersigned representative certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

112. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. Shreveport's agent on the signature page agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXII. INTEGRATION

113. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Consent Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than Deliverables that are subsequently submitted and approved pursuant to this Consent Decree, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Consent Decree or the settlement it represents, nor shall it be used in construing the terms of this Consent Decree.

XXIII. FINAL JUDGMENT

114. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States, the State, and

Shreveport. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Rules 54 and 58 of the Federal Rules of Civil Procedure.

XXIV. APPENDICES

Appendices A and B are attached and hereby incorporated within this Consent Decree.

Dated and entered this __ day of _____, _____

_____
United States District Court Judge
Western District of Louisiana
(Shreveport Division)

FOR PLAINTIFF UNITED STATES OF AMERICA:

On Behalf of the Department of Justice:

Date: 11/12/13

[redacted]

ROBERT G. DREHER
Acting Assistant Attorney General
U.S. Department of Justice
Environment and Natural Resources Division

Date: 11/1/13

[redacted]

ELIZABETH F. KROOP
Trial Attorney
U.S. Department of Justice
Environment and Natural Resources Division
Environmental Enforcement Section
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044-7611
Telephone: 202-514-5244
Fax: 202-616-6584
E-Mail: Elizabeth.Kroop@usdoj.gov

FOR PLAINTIFF UNITED STATES OF AMERICA (Continued):

On Behalf of the U.S. Environmental Protection Agency (Headquarters):

[redacted]

CYNTHIA GILES
Assistant Administrator
U.S. Environmental Protection Agency
Office of Enforcement and Compliance Assurance

[redacted]

SUSAN SHINKMAN, Director
U.S. Environmental Protection Agency
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance

[redacted]

MARK POLLINS, Director
U.S. Environmental Protection Agency
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
Water Enforcement Division

[redacted]

SUSHILA NANDA, Senior Attorney Advisor
U.S. Environmental Protection Agency
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
Water Enforcement Division

FOR PLAINTIFF UNITED STATES OF AMERICA (Continued):

On Behalf of the U.S. Environmental Protection Agency (Region 6):

Date: 9.23.13

[redacted]

JOHN BLEVINS
Division Director
Compliance Assurance and Enforcement Division
U.S. EPA, Region 6
1445 Ross Ave., Suite 1200 (6EN-W)
Dallas, TX 75202
Phone: (214) 665-2266

Date: 9/24/13

[redacted]

EFREN ORDONEZ
Office of Regional Counsel
U.S. EPA, Region 6
1445 Ross Ave., Suite 1200 (6RC-EW)
Dallas, TX 75202
Phone: (214) 665 2181

FOR PLAINTIFF STATE OF LOUISIANA (through the Louisiana Department of Environmental Quality, acting with concurrence of the State Attorney General, subject to the public notice and comment requirements):

[redacted]

CHERYL S. NOLAN
Assistant Secretary
Louisiana Department of Environmental Quality
Office of Environmental Compliance
P.O. Box 4312
Baton Rouge, Louisiana 70821-4312

[redacted] 9-17-13

DWANA KING
Attorney
Louisiana Department of Environmental Quality
Office of the Secretary, Legal Division
P.O. Box 4302
Baton Rouge, Louisiana 70821-4302

FOR DEFENDANT CITY OF SHREVEPORT:

[redacted]

Cedric B. Glover
Mayor
PO Box 31109
Shreveport, Louisiana 71130
Telephone: 318-673-5050

Attorneys on behalf of the City of Shreveport:

Date: 9-26-2013

[redacted]

Timothy W. Hardy

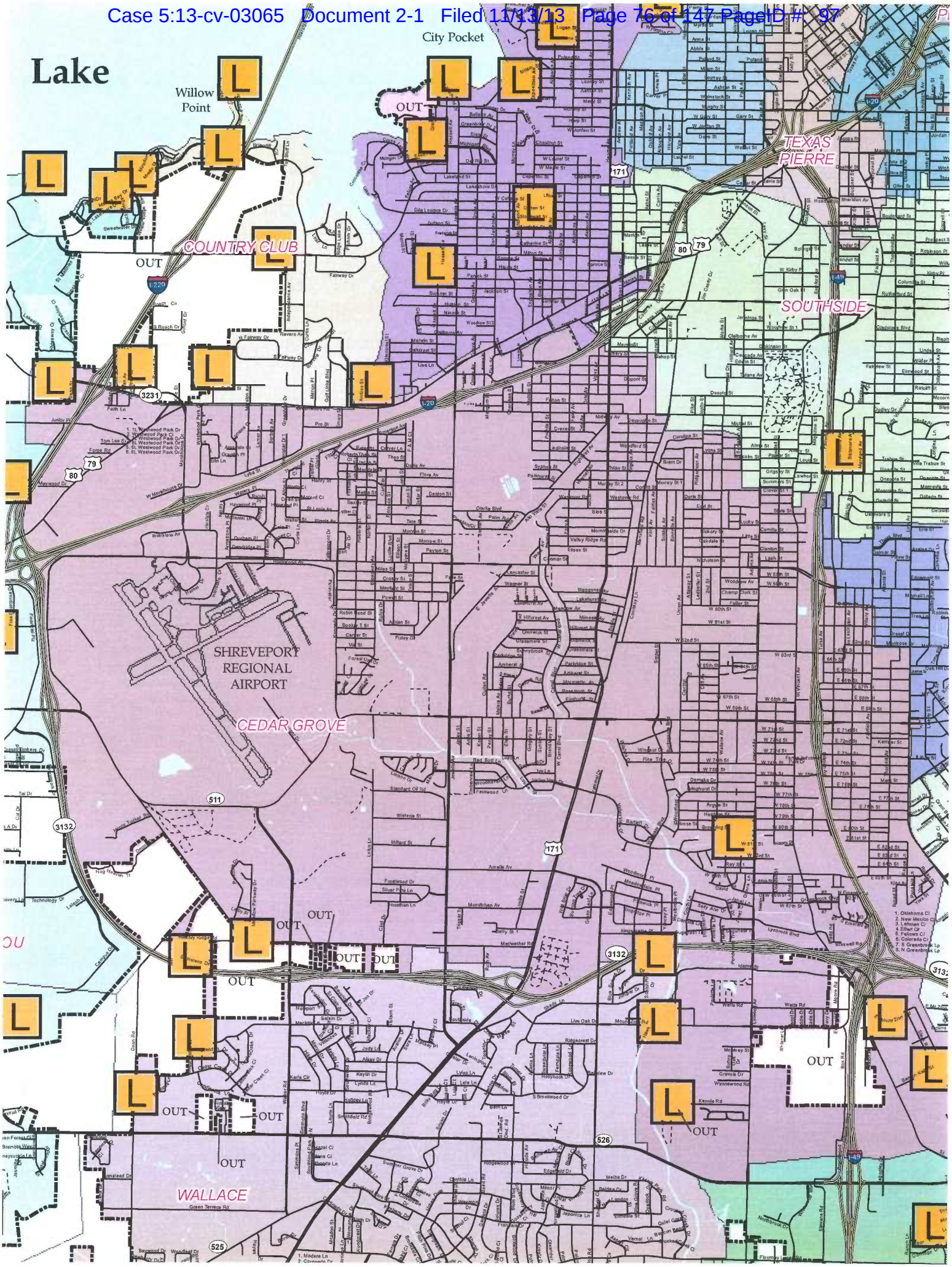
Date: 9-26-2013

[redacted]

Y. Joyce Matthews

Roedel Parsons Koch Blache
Balhoff & McCollister
8440 Jefferson Highway, Suite 301
Baton Rouge, LA 70809

APPENDIX A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City Pocket
Willow Point
COUNTRY CLUB
TEXAS
PIERRE
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APPENDIX B

DEPARTMENT OF WATER & SEWERAGE
WASTEWATER TREATMENT
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DEPARTMENT OF WATER & SEWERAGE
WASTEWATER TREATMENT
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DEPARTMENT		DIRECTIVE	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		D.D. Number	OV-001
SUBJECT: Introduction of Wastewater & Sewerage Plant Operations		Effective Date	1/04

CITY OF SHREVEPORT, LOUISIANA
DEPARTMENT OF WATER AND SEWERAGE
WASTEWATER DIVISION
WASTEWATER TREATMENT

The primary objective of the Wastewater Treatment Plant is to provide a buffer between the natural environment and the concentrated wastewater from urban areas. If wastewater was released into the environment in an uncontrolled fashion, it would degrade the water, land and air on which life depends. That recognition led to a comprehensive set of laws and regulations set for the safe treatment and disposal of municipal wastewater and residual waste. Therefore, regulations governing a specific wastewater treatment plant's discharge requires certain operational procedures.

The formal mechanism for implementing the Clean Water Act (CWA) is the permitting system established in Section 402. National Pollutant Discharge Elimination system (NPDES) permits are required for any discharge pollutants to waters of the U. S. Discharges without permits, and those who exceed permit limits are considered to be in violation and are subject to civil, administrative, or criminal penalties. Maximum penalties can range from $25, 000 to $1,000,000 per day. However, if the violation continues, the violator may face imprisonment from 1 to 15 years for certain types of violations.

The NPDES permit specifies the location, allowable flows, allowable pollutant concentrations or mass loads in the discharge, the limits of the mixing gone, if any , and monitoring and reporting requirements. With certain exceptions, the Environmental Protection Agency (EPA) regulations define secondary treatment for municipal wastewater, as an effluent containing on a 30-day average basis, concentrations, not exceeding biochemical oxygen demand (BOD), 30 mg/l; total suspended solids (TSS), 30 mg/l; and pH between 6.0 and 9.0 units (40 CFR 133). The regulations also require a minimum of 85% removal of BOD and TSS. The wastewater treatment plants with a total design flow exceeding 5 mgd must establish a pretreatment program for regulating industrial and other non-domestic sources discharging into sewers.

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Management of the process establishes specific treatment goals defined, in part by the NPDES permit, local ordinances, policies, and contracts regarding delivery of by products.

The management identifies routine process control parameters and potential problems associated with each treatment process. Finally, and most importantly, the management includes the actions necessary to keep the process parameters within the established limits.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	OV-002
SUBJECT: Wastewater Division–Emergency Phone Numbers		Effective Date	1/1/09

EMERGENCY PHONE NUMBERS
WASTEWATER DIVISION
FOR LUCAS WWTP

1. FOR ELECTRICAL EQUIPMENT FAILURES NOTIFY:

HIEP TRAN (EIT)
Cell: 318-349-0817
Home: 318-469-8393

2. FOR MECHANICAL EQUIPMENT FAILURES NOTIFY:

CHARLES ANDERSON (Sr. Operator)
Cell: 318-294-2615
Home: 318-227-0851

3. FOR MAJOR ELECTRICAL POWER OUTAGES:

SWEPCO Circuit Numbers for Lucas are:
(a) Main Switch Gear, Circuit Breaker Number 52-1 is: Feeder Number 10310
(b) Main Switch Gear, Circuit Breaker Number 52-2 is: Feeder Number 10290

KEITH MCFARLAND (Swepco)
(Office) 318-862-2205
(Cell) 318-218-0394

RAY MACK (Interim Superintendent)
Home: 318-230-3478
Cell: 318-540-2841

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	OV-002
SUBJECT: Wastewater Division–Emergency Phone Numbers		Effective Date	1/1/09

EMERGENCY PHONE NUMBERS
WASTEWATER DIVISION
FOR LUCAS WWTP

4. SEWER LIFT CONTACT NUMBERS ARE:

RANDY SMITH (Plant Manager)
Home: 318-453-9667
Cell: 318-423-4350

BILLY CRAIG (Trouble Shooter) electrical
CELL: 318-393-8422

HUBERT MORRIS (Trouble Shooter) Maintenance
Home: 318-946-0997
Cell: 318-780-3639

5. SCADA FAILURES:

DOUG STUMP
Office: 318-673-6055
Cell: 318-349-5813

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DEPARTMENT		DIRECTIVE	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		D.D. Number	OV-003
SUBJECT: Overview of Lucas WWTP Facility		Effective Date	01/04

CITY OF SHREVEPORT
WASTERWATER DIVISION
WASTEWATER TREATMENT SECTION
LUCAS WASTEWATER TREATMENT FACILITY

The Lucas Wastewater Treatment Facility represents a substantial investment of community funds in a vital program to maintain a clean and healthy environment for the citizens of Shreveport and the State of Louisiana. Planning begin in 1967 when the City's water utility staff and Black & Vetch Consulting Engineers prepared a comprehensive report. This report was completed in 1969 and recommended the construction of a wastewater treatment plant, together with pumping and collection facilities. Design of the treatment plant was completed in 1973 and construction started in the spring of 1974.

The plant is designed to treat an average flow of 24 million gallons per day a maximum peak flow rated of approximately 56 million gallons per day.

In 2004 improvements where made to allow more cost effective operation of the facilities and to assure compliance with current and projected National Pollutant Discharge Elimination System (NPDES) permits requirements. New design 30 million gallons per day. 40 mgd max monthly flow. 80 mgd peak hour flow.

Major components are as follows:

Parshall flume (Aqua Screens, Grit chambers and odor control)
Bio-Selector
Aeration basins
Final sedimentation basins
Aerobic digestion facilities
Turblex Blower Building
Administration building
Sewer Lift Building
Service Building
NPDES Laboratory

I. Headworks:

Raw wastewater produced in the City of Shreveport is received at Lucas from five (5) pump stations - Lucas, Stoner, Wallace Lake, North Pierre Bayou and Cedar Grove.

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II. Parshall Flume:

1. As raw wastewater enters the West end of the flume it passes through the Aqua Screen which automatically removes some of the rags, grease balls, plastic products, and other material trapped and taken out.

2. Once the wastewater passes through the screen, it enters the Parshall Flume in the central control which measures the flow and transmits the data to indicating, recording, and totalizing instruments located on the central control panel in the Operator's office.

3. As the flow exits the flume, it is divided by a splitter plate and falls into wells where the flow is channeled to the Headwork's Building.

III. Aeration Basin:

Mixing of the raw wastewater with return activated sludge and dissolved oxygen (DO) is accomplished by Turblex blowers.

The DO content of a basin may be raised or lowered by set points on blowers.

Once the raw wastewater, return activated sludge, and dissolved oxygen are thoroughly mixed, the resulting "mixed liquor" discharges through a controlled distribution system to the Final Basin.

IV. Final Settling Basin:

As the mixed liquor moves into the center of the clarifier, a series of rings or baffles slows the velocity (forward motion) of the water creating a quiescent (quiet) atmosphere which allows the mixed liquor to separate into 3 parts:

1. Activated sludge - containing the lining bacteria and organic matter settle to the basin floor and are removed by sludge collection equipment which rakes the settled sludge to a centrally located sump.

2. Scums and other floating material - are collected by surface skimming equipment and deposited in a collection well.

3. Clarified "Carrier Water": flows through a series of "V-Notch" weirs into the final launders to the Contact Basin and then enters UV complex.

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4. Scums and other floating material - are collected by surface skimming equipment and deposited in a collection well.

5. Clarified "Carrier Water": flows through a series of "V-Notch" weirs into the final launders to the Contact Basin and then enters UV complex.

V. Final Effluent:

Flow from the UV chambers goes to Red River or is used for "non potable purposes."

VI. Return Activated Sludge:

As the sludge settles in the Final Settling Basin and is raked to the sump in the center of the basin floor, pumps move the sludge back to the Bio-Selector. .

VII. Waste Activated Sludge:

Activated sludge produced in excess of amounts needed to feed the raw wastewater is drawn from the return sludge suction header and is pumped (wasted) to the aerobic digester.

VIII. Scum:

Scum collected and removed from the surface of the Final Settling Basin is also pumped to the Aerobic Digester.

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IX. Aerobic Digestion:

Waste activated sludge, scum, and carrier water enter the digesters from inlet wells located on the west end of each unit. Air headers located near the floor of each basin provide diffused air which bubbles to the surface, stirring the mixture and providing DO to the living organisms. Each stream of air bubbles act as a baffle to slow the horizontal movement across the basin. Sludge should remain in the digester from 21 to 25 days under ideal conditions.

X. Sludge Disposal:

Prior to May 2002, the City produced a Class B-sludge. The sludge was disposed of by land application for agricultural purposes.

Currently the sludge is converted to a Class A-product. The product will also be utilized in an agricultural application.

Office of Water & Sewerage		Plant Operations Division

Wastewater Treatment Standard Operating Procedure	**WWT SOP No:**	**ADM-001**
SUBJECT: Administrative Section - (Duties and Responsibilities)	**Effective Date:**	**10/5/05**

I. Authority: Issued under the direction of the Deputy Director of the Office of Water & Sewerage

II Purpose: To manage the production of the Plant Operations Division.

III. Class Specification:

Superintendent

1. Provides long range management vision, planning and direction for upgrading and improving the operation and maintenance techniques of the City's Wastewater Treatment facilities (Lucas and North Regional). Assures that wastewater treatment techniques remain current with new technologies and EPA standards and that plant treatment capabilities, processes and capacities are expanded in sufficient time to support the City's ever growing population. This includes the plant's Operations, Laboratory and Maintenance functions.

3. Maintains overall management responsibility for the safe operation, maintenance and security of the City's Wastewater Treatment facilities (Lucas, North Regional & Sewer Lift) all in accordance with established industry standards and within city, state and national environmental guidelines, rules and regulations. Reviews daily Plant laboratory data and reports, as required, when established standards are not met. Sets specific plant operating goals and objectives, trains and motivates plant workers to achieve them, monitors and reports results.

4. Establishes "Division" personnel policies, procedures, rules and regulations to assure the safe operation, maintenance and security of facilities under your management control. Enforces compliance with both City and Division personnel policies, rules and regulations, and disciplines violators of the same.

5. Plans, coordinates and review capital improvement and replacement projects with Engineering and Plant Operations staff. Assists in preparing contract packages including writing "Scopes of Work." Assist in evaluating and selecting the "Best Qualified Bidder."

Office of Water & Sewerage		Plant Operations Division
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:** **ADM-001**
SUBJECT: Administrative Section Duties and Responsibilities		**Effective Date:** **10/5/05**

III. **Class Specification: (continued)**

Superintendent

6. Establishes and maintains membership in applicable industry associations. Reviews appropriate industry literature, publications and regulatory agency policies and standards and stays abreast of new technologies. Attend meetings, seminars, conferences, and other events which increases knowledge and benefits plant operations. Plans new methods and procedures to improve the efficiency of Plant Operations.

7. Meets and coordinates with City officials, Department and division heads, and interested citizens to plan, set and accomplish common goals and objectives. Receives visitors, officials, citizens, government regulators and briefs them on operational activities.

8. Keeps upper management informed on plant daily operating performance and reports project progress status.

9. Develops and manages annual operating budgets, reviews and reports monthly status of the same using the FAMIS program. Reviews and approves purchase requisitions using ADPICS. Assures that depreciable equipment is replaced in a timely manner.

10. Prepares, reviews and approves personnel performance evaluations as necessary. Approves disciplinary actions, payroll, promotions, and new hires for Plant Operations. Reviews and submits daily equipment and manpower status reports.

11. Acquires a Louisiana State Level 4 Certification in Wastewater Treatment and completes annual training hours required to maintain the same.

12. Directs development, reviews and approves training plans and schedules. Assures plant, O&M staff are adequately trained and that they acquire Louisiana State Certifications at levels appropriate to the O & M needs of the Wastewater Treatment Plant. Also assures that certified personnel meet annual training hour requirements in order to maintain their certifications.

Office of Water & Sewerage		Plant Operations Division
Wastewater Treatment Standard Operating Procedure		WWT SOP No: ADM-001
SUBJECT: Administrative Section Duties and Responsibilities		Effective Date: 10/5/05

III. Class Specification:(continued)

Superintendent

13. Oversees the development and implementation of facility "Security and Protection" plans and "Emergency Response" plans and assures they are in place. Assures that all plant personnel are knowledgeable and are trained as to their duties and responsibilities under "Threat" and/or "Emergency Response" situations. Prepositions equipment and supplies as necessary inside the plants to meet potential threat situation.

14. Perform other duties as assigned.

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Office of Water & Sewerage		Plant Operations Division
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:** **ADM-002**
SUBJECT: Administrative Section Duties and Responsibilities		**Effective Date:** **10/5/05**

I. Authority: Issued under the direction of the Superintendent of Water & Sewer/Wastewater Treatment

IIPurpose: To micro manage the production of Operation, Maintenance & Sewer Lift teams.

III. Class Specification:

Plant Manager

1. Micro manages Operations and Maintenance
3. Assumes most of the Superintendent's responsibilities in the Superintendent's absence
4. Assist in preparing budget and reports
5. Assist in planning for future needs of operations and maintenance of Water and Wastewater Treatment plants
6. Ensures that the facilities Operation and Maintenance Manual is updated with revisions as required to reflect current operation and maintenance procedures.
7. Assist in controlling budget spending
8. Controls operation of Water and Wastewater Operation Section and maintaining all equipment.
9. Keeps Superintendent advised of potential operational problems
10. Maintains harmonious working relationship with employees
11. Available to assist or coordinate visits to the plants
12. Works with Operation and Maintenance Supervisors to study provisions of Operation and Maintenance manuals to make recommendations for updating it based on actual plant operation data.

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Office of Water & Sewerage		Plant Operations Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**ADM-003**
SUBJECT: Maintenance Section (Duties and Responsibilities)		**Effective Date:**	**10/5/05**

I. Authority: Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. Purpose: To insure that the equipment utilized in Plant Operations provides effective, efficient and continuous operation for the plant.

III. Class Specifications:

Planner Scheduler

1. Directs and schedules all work activities in the section (electrical, mechanical, painting, etc.)
2. Insures all assigned jobs are adequately completed as per schedule
3. Trains the maintenance section on safety and adequate job performance
4. Checks work in progress and advices on corrective actions, when necessary
5. Assist in the divisions budgetary estimates, control and disbursement
6. Hires new personnel, recommends for promotion an disciplinary action
7. Compiles monthly sectional unit report
8. Supervises the inventory control mechanism in the section
9. Insure that all work orders are completed
10. Performs welding and fabrication of equipment

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Office of Water & Sewerage		Plant Operations Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**ADM-004**
SUBJECT: Administrative Section (Duties and Responsibilities)		**Effective Date:**	**10/5/05**

I. Authority: Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. Purpose: To provide managerial support to the division in the area of purchasing and contracting of products and services.

III. Class Specifications:

Management Assistant

1. Assists in budget planning and preparation. Bid solicitation and specification preparation. Initiation of purchase orders and requisitions via ADPICS for Wastewater Treatment Plant. Initiation of contract requisitions and entering of same into contract tracking. Perform financial inquiries via FAMIS. Capital project procurement. Follow up of purchase order payments with Accounting personnel and vendors. Compares account summaries for chemicals and other items against individual purchase order item summaries. Monitors chemical account balances, etc in ADPICS and FAMIS and report any irregularities to management. Completes and post procurement receiving reports. Communicates with Accounting personnel to compare chemical and other invoices with receiving tickets.

2. Maintains records, spreadsheets, etc pertaining to chemicals used in the wastewater treatment process. Assists in the chemical bidding process by making projection of future chemical usage and making recommendations. Scrutinizes all chemical contracts and makes suggestions concerning factors relevant to effective chemical acquisition, handling, safety, specifications, usage, etc. Ensure funds are always available to purchase chemicals and other items used in the process of treating the City's wastewater.

3. Assist plant management in planning and coordinating safety policies and practices. Compiles safety manuals and material safety data books and makes sure they stay current in order to comply with safety regulations. Reports all safety hazards or potential hazards to plant management. Gives tours to officials, contractors, safety personnel, etc. when necessary.

IV..Reports/Documentations Required: Purchasing's Regulations and Procedures Manual, Small Purchase Procurement Card Procedures Handbook, DOS Commodity Contract Manual, La. Public Bid Law Revised Statutes 38:221-226, DOS Fixed Asset Manual, City of Shreveport's Overview of Fixed Asset Accounting

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Office of Water & Sewerage		Plant Operations Division
OFFICE OF WATER & SEWERAGE /PLANT OPERATIONS		WWT SOP No.	ADM-005
SUBJECT: Administrative Section-(Duties & Responsibilities		Effective Date	10/5/05

I. Authority: Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II Purpose: To provide clerical and managerial support to the Superintendent in the areas of human resource, accounting, and budget coordination.

III. Class Specifications:

Administrative Assistant

1. Personal assistant to Plant Operations Manager (covers Wastewater and Water Treatment Division): types rough and final drafts of correspondence, executive summaries for contracts, review for accuracy prior to signing and disbursing, schedule Manager and supervisor's meetings, maintain calendar. Review budget balances and aides in the preparation of next year's budget for Plant Operations.

2. Prepares weekly and semi-monthly payroll for Plant Operations. Monitor payroll changes and overtime usage monitor leave balances and generate weekly or semimonthly reports for supervisors. Generate monthly overtime reports.

3. Prepare and monitor PAF's whenever there is a change to a specific item. Tracks position control roster to ensure accuracy to budgeted positions. (For all of Plant Operations). Prepares employee evaluation reports and ensure .paperwork is processed prior to employees anniversary date for Plant Operations.

4. Use ADPICS to make direct purchases for ordering of office equipment and supplies for operations, to pay for membership dues and reserve car rentals for travel, responsible for making and generating travel documents (request for travel, travel expense statement, revenue receipts, check requests for travel advancements) for all of Plant Operations. With the approval of the Superintendent, proofreads and approves ADPICS documents. Coordinate with travel agency and hotel clerks to acquire confirmations for travelers. Establishes and maintains office and employee files for all of Plant Operations. Serve as backup in purchasing of items, bid processing, solicitation requests, contract tracking, etc. in the absence of Management Assistant

Office of Water & Sewerage		Plant Operations Division
OFFICE OF WATER & SEWERAGE /PLANT OPERATIONS	WWT SOP No.	ADM-005
SUBJECT :Administrative Duties-Administrative Asst. Continued	Effective Date	10/5/09

5. Receives telephone calls, sales and delivery callers. Responsible for sorting and distributing mail to the appropriate employees and supervisors. Schedule and attend various staff and departmental meetings. Serve as representative on MICTF.

6 Generate monthly Discharge Monitoring Reports (DMRs) for Wastewater Treatment Plants. Disburse reports to various governmental agencies. Prepare interdepartmental expense transfers for Landfill charges on a monthly basis for Plant Operations.

IV Reports/Documentation required: City of Shreveport Personnel's Rules and Regulations, City of Shreveport's Human Resource Guide, Administrative Procedure 1-1 along with DOS Travel Policy and Procedure, Administrative Procedure 3-4, Administrative Procedure 2-6, City Payroll Manual, Risk Management Manual. All procedures should be used in conjunction with the guidelines set up in the DOS Policy and Procedures Manual.

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Dept of Water & Sewerage		Wastewater Division
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:** OP-001
SUBJECT: Operations Section (Duties and Responsibilities)		**Effective Date:** 10/5/05

I. **Authority:** Issued under the direction of Superintendent of Water & Sewerage/Plant Operations/Wastewater Treatment

II **Purpose:** To provide a buffer between the Natural environment and the concentrated wastewater from urban areas.

III. **Class Specifications:**

Team Leader/Senior Operator

1. Responsible for smooth and optimal operation of the Plant Operations
2. Maintains the treatment plant's operational records.
3. Based on management objectives and goals, assist in developing staffing requirements, job descriptions, organizational charts and personnel assignments.
4. Recommends plant operation budgets for consideration by the Superintendent
5. Assist Superintendent in preparing plans for guidance as to future facility needs
6. Maintains communication with higher management for total plant's operational, personnel and problem conditions.
7. Provides a good, safe working environment with proper safety equipment and tools for personnel.
8. Assures that employees receive in-plant indoctrination in the proper rules and procedures for safe operation and practices.
9. Coordinates operator training program with Superintendent for more efficient operation of the plant and advancement of the employees
10. Motivates personnel to achieve maximum efficiency of operation

Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		WWT SOP No:	OP-001
SUBJECT: Operations Section (Duties and Responsibilities)		Effective Date:	10/5/05

Responsibilities:

Team Leader/Senior Operator

1. Insure efficient operation of the plant
2. Insure all routine procedures are carried out during their shift by the team member
3. Inspect the plant for overall process condition (Reference check list)
4. Keep daily logs
5. Perform lab tests on collected samples for process and record results
   a. Turbidity
   b. Settleable Solids
   c. pH readings
   d. Dissolved Oxygen Readings
   e. Temperature
6. Recognize process upsets and critical conditions and make adjustments accordingly
7. Assist the team member as needed
8. Prepare reports
   a. Daily reports
   b. Weekly reports
   c. Monthly reports

Dept of Water & Sewerage		Wastewater Division

Wastewater Treatment Standard Operating Procedure	WWT SOP No:	OP-002
SUBJECT: Operations Section (Duties and Responsibilities)	Effective Date:	10/5/05

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II **Purpose:** Perform duty as leader overseeing work performed by assigned operators on an appointed shift.

III. **Class Specifications:**

Senior Operator

1. Analyzes operational data to determine changes and improvements required to accomplish the objectives more effectively.
2. Insures efficient operation of plant.
3. Insures all routine procedures are carried out during their shift by the operator.
4. Inspects the plant for overall process condition.
5. Keep daily logs.
6. Perform lab tests on collected samples from process and record results.
7. Recognize process upsets and critical conditions and report them to the plant Supervisor.
8. Makes process adjustments, as required.
9. Assist operator, as required.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE /PLANT OPERATIONS		WWT SOP No.	OP-003
SUBJECT: Operations Section (Duties & Responsibilities		Effective Date	10/5/05

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:** To assist the Team Leader and Sr. Operator in the operations of the Wastewater Facility.

III. **Class Specifications**

OPERATOR

1. Works with the Senior Operator in the efficient operation of the plant.
2. Performs shift procedures as set by the plant Supervisor.
3. Maintains the plant in neat and orderly condition.
4. Inspects all process equipment.
5. Obtains samples for testing.
6. Recognizes process upsets and critical conditions and report them to the Senior Operator
7. Lubricates equipment, as required.
8. Performs routine maintenance.

Responsibilities:

I.. Assist the Team Leader in the efficient operation to the plant
II. Perform shift procedures as set by the Plant Manager.
III. Maintain the plant in a neat and orderly condition
IV. Inspect all process equipment (Reference check list)
V. Collect process sample for testing
VI. Recognize process upsets and critical conditions and report them to the Team Leader
VII. Lubricate equipment as required
VIII. May perform some PM on equipment

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Dept of Water & Sewerage		Wastewater Division
Wastewater Treatment Standard Operating Procedure		WWT SOP No: OP-004
SUBJECT: Operations Section (Duties and Responsibilities)		Effective Date: 10/5/05

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II **Purpose:** To provide assistance in the beautification of the plant and buildings of the Wastewater Treatment Facilities.

III. **Class Specifications:**

Crew Member/Grounds

1. Grounds
   a. Mowing
   b. Edging
2. Empty rag, grit and scum barrels as needed
3. May assist Crew Leader with housekeeping duties
4. May assist Operators and other support personnel as required by Plant Supervisor

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Dept of Water & Sewerage		Wastewater Division
Wastewater Treatment Standard Operating Procedure	**WWT SOP No:**	**OP-005**
SUBJECT: Operations Section (Duties and Responsibilities)	**Effective Date:**	**10/5/05**

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II **Purpose:** To provide assistance in the beautification of the plant and buildings of the Wastewater Treatment Facilities.

III. **Class Specifications:**

Crew Leader/Buildings

1. Housekeeping
   A. Clean toilets, face bowls, urinals and mirrors daily in all restrooms in the Administration Building and Service Buildings.

   B. Wash all windows, inside and outside, in the Administration and Service Buildings

   C. Floors in the Administration and Service Buildings are to be swept and damp mopped on a daily basis

   D. Clean the stove and refrigerator and cabinet tops (tables) in the Administration Building's break room

2. Assist Crew member in grounds keeping

3. May assist Operators and other support personnel as required by Plant Supervisor

Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**OP-006**
SUBJECT: Operations Section - Scheduled Daily Tasks		**Effective Date:**	**10/5/05**

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II **Purpose:** Transporting of wastewater screening and sludge to disposal sites.

III **Class Specifications:**

Driver/Operator Heavy Equipment

1. Hauls grit, scum, rags, sludge and trash to the landfill for disposal.
2. Hauls pressed sludge to Sludge Farm for processing.
3. May assist operating personnel as required.

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Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**OP-007**
SUBJECT: Operations Section - Scheduled Daily Tasks		**Effective Date:**	**01/04**

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:** To provide a list of duties to be performed by the Operations Staff

III. **Scope:** This procedure applies to all Wastewater Treatment Operations Section personnel

IV. **Responsible Person (s):** Team Leaders and Supervisors are responsible for assuring that all personnel under their supervision are familiar with and comply with this directive.

Actions Required:

1. Inspect all process equipment (Reference checklist)
2. Collect samples for testing
   - A. Raw influent
   - B. Aeration basins
   - C. Return sludge
   - D. Effluent
   - E. Digestor
   - F Digested sludge discharge
3. Perform tests on samples for process control
   - A. Settleable Solids
   - B. Ph
   - C. Temperature
   - D. Dissolved oxygen
   - E. Turbidity
4. Work on assigned clean up area
5. Carry out operational procedures set by the Plant Manager
6. Inspect the plant for overall process condition. (Reference checklist)
7. Decant the digester (Reference procedures)
8. Clean return activated sludge pumps (RAPS) (Reference procedures)
9. Clean scum pumps (Reference procedures)

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Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**OP-008**
SUBJECT: Operations Section - Recordkeeping		**Effective Date:**	**1/04**

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatmen

II **Purpose:** To record and maintain data of the progress or actions of the plants on a daily basis.

III. **Reports/documentation required:**

1. Daily log book
2. Daily log sheets
3. Daily log results sheets
4. Daily report
5. Weekly reports
6. Monthly reports
7. Maintenance requests

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Dept of Water & Sewerage		Wastewater Division
DEPT OF WATER & SEWERAGE /PLANT OPERATIONS		WWT SOP No. OP-009
SUBJECT: Sample Pulling		Effective Date 1/04

I. **Authority:** Issued under the direction of Superintendent of Wastewater Treatment

II. **Purpose:** Requirement for Plant Operation and NPDES Permit to ensure plant control and reporting.

III. **Scope:** This procedure applies to all Wastewater Treatment employees

IV **Responsible Person(s):** Team Leaders and Supervisors are responsible for assuring that all personnel under their supervision are familiar with and comply with this directive.

V. **Actions Required:**

A. Types of samples being collected:
1. Raw influent flow
2. Aeration basin mixed liquor
3. Return sludge
4. Effluent discharge
5. Digester mixed liquor
6. Digested sludge discharge
7. Decant supernate

B. Method of sampling:
1. Raw influent flow - pulled at parshall flume channel with a plastic container every two hours.
2. Aeration basin mixed liquor - pulled at center isle of each aeration basin between first two aerators or two running aerators at 3 ft depth with a weighed PVC container and extended by a rope every four hours.
3. Return sludge - pulled from return sludge sample spigots located in the tunnel area every four hours.
4. Effluent discharge - pulled at the southside of the mechanical building between chlorine contact basins 1 and 2. Plastic container and rope provided. Sample collected every two hours.
5. Digester mixed liquor - pulled from decant header at the end of each digester cell once per shift. A plastic container and rope provided

Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE /PLANT OPERATIONS		WWT SOP No.	OP-009
SUBJECT: Sample Pulling		Effective Date	1/04

B. Method of Sampling Continues

6 Digested sludge discharge - pulled from digester sludge pump (DSP) spigot in DSP room behind digester cells once per shift from each digester cell pumped from.

7. Decant supernate - decant procedure is usually at night or during low-low period Located at decant header gate on each digestor cell. Three samples are pulled during Decant 15 minutes apart from each cell. Plastic container and rope provided.

Dept of Water & Sewerage		Wastewater Division
Wastewater Treatment Standard Operating Procedure	**WWT SOP No:**	**OP-010**
SUBJECT: Plant Control Tests - Sample Type	**Effective Date:**	**1/04**

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:** To provide reliable samples that is truly representative of the existing condition of the plant. The sample should be handled in such a way that it does not deteriorate or become contaminated before it reaches the laboratory.

III. **Scope:** This procedure applies to all Wastewater Treatment Operations Section personnel.

IV. **Responsible Person(s):** Team Leaders and Supervisors are responsible for assuring that all personnel under their supervision are familiar with and comply with this directive.

V. **Definitions:**

The two basic methods of obtaining samples from the wastewater treatment plant are as follows:

1. **Grab:**

   A. Grab samples are those taken more or less instantaneously and are analyzed separately.

   B. This method insures that any extreme condition is not overlooked due to mixing.

2. **Composite:**

   A. Composite samples are those taken at regular intervals, placed together and analyzed.

   B. They are normally considered to give average results.

   C. These samples should be corrected in accordance with Standard Methods.

VI. **Actions Required:**

1. General:

Dept of Water & Sewerage		Wastewater Division
Dept of Water and Sewerage/Plant Operations	WWT SOP No.	OP-010
SUBJECT: Plant Control Tests - Sampling Type	Effective Date:	1/04

Procedures:(continued)

1. Use a clean two (2) liter wide mouth jar for obtaining samples.
2. Record every sample collected, identify and label the jar, and note every sampling point.
3. Samples should be placed into the laboratory test process as soon as possible after sampling.
4. Place samples under refrigeration at 3 - 4°C if for BOD testing, or if a sample is not to be tested immediately.
5. Avoid letting foreign matter come in contact with the sample.
6. Avoid including floating materials or large particles when collecting samples.

Dept of Water & Sewerage		Wastewater Division

Wastewater Treatment Standard Operating Procedure	WWT SOP No:	OP-011
SUBJECT: Plant Control Test - Settleable Solids Method	Effective Date:	1/04

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:**

1. This test is very important in wastewater analysis and in determining plant efficiency.
2. Settleable solids are those that are in suspension that will settle under quiescent conditions because of gravity.
3. Results of this test are very useful for the operator in determining RAS rates and related sludge functions.

III. **Scope:** This procedure applies to all Wastewater Treatment Operations section personnel

IV **Responsible Person(s):** Team Leaders and Supervisors are responsible for assuring that all personnel under their supervision are familiar with and comply with this directive.

V. **Required:**

1. Samples are thoroughly mixed and added to a liter graduate cylinder.
2. Allow to settle for 45 minutes.
3. Slowly stir sides of the cylinder.
4. Allow to settle for additional 15 minutes.
5. Calculate volume of settleable solids.
6. Volume of sample used in "1" (liters).
7. Measured volume of settleable solids in "ml" (milli-liter).
8. Amount of settleable solids = ml/l (milli-liter per liter).

Results:

A. Normal range of settleable solids in a activated sludge treatment ditch is 40 - 70%.

B. There should be no more than a "dusting" in the clarifier effluent.

Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**OP-012**
SUBJECT: Operation Section Tests - Dissolved Oxygen (D.O.) Method		**Effective Date:**	

I. Authority: Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. Purpose: This test is very important in monitoring the operation of the treatment plant. Proper amounts of dissolved oxygen must be maintained for the necessary physical, chemical, and biochemical functions to take place in the treatment process.

III. Scope: This procedure applies to all Wastewater Treatment Operations section personnel.

IV Responsible Person(s): Team Leaders and Supervisors are responsible for assuring that all personnel under their supervision are familiar with and comply with this directive.

V. Actions Required:

Test Method:

Electrometric:

1. Electrometric is used for accurate measurements and required a pH meter and glass electrodes for performing the tests.
2. More care is required in using the electrodes before actual use. The laboratory usually standardize the probe.
3. This procedure is considered as the standard for DO measurement.

Results:

a. Dissolved oxygen should range from 0.5 mg/l to 2.0 mg/l in the aeration ditch.

b. It should be no less than 0.5 mg/l in the plant effluent.

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Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**OP-013**
SUBJECT: Plant Control Tests - pH Methods		**Effective Date:**	

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II **Purpose:** pH is a term used to express the intensity of the acid or alkaline condition of a solution or in this case, a wastewater.

Biological action required in sewage treatment will take place more readily under the proper pH condition.

III. **Scope:** This procedure applies to all Wastewater Treatment Operations section personnel.

IV **Responsible Person(s):** Team Leaders and Supervisors are responsible for assuring that all personnel under their supervision are familiar with and comply with this directive.

V. **Test Method:**

Electrometric:

1. Electrometric is used for accurate measurements and requires a pH meter and glass electrodes for performing the tests.
2. More care is required in using "buffered" solutions for standardization of the electrodes before actual use.
3. This procedure is considered as the standard for pH measurement.

VI. **Results:**

1. Results will be expressed by a number between 0 and 14.
2. Desired values in the treatment process should be between 7.0 and 7.5.

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Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**OP-014**
SUBJECT: Plant Control Equipment Check List		**Effective Date:**	**1/04**

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:** To perform daily equipment check at least every two (2) hours

III. **Check List: Lucas Plant**

Number of people required for each shift:

First Shift	3
Second Shift	3
Third Shift	3
Swing Shift	3

A. Parshall Flume

1. Check rags removal equipment
2. Clean and operate Aqua screen
3. Check influent flow meter
4. Clean barrel level
5. Clean area, if needed
6. Check sewage flow
7. Check color and odor of raw water

B. Parking Area

1. Pick up trash
2. Make sure street lights are on at night
3. Lock gate after dark

C. Grit Complex

1. Check the kind and amount of grit being removed
2. Check grit container levels
3. Check panel boards for operation of all working equipment
4. Check grit machines
   a. Check screws for operation
   b. Make sure gear is working properly
   c. Make sure grit washer water is on

Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		WWT SOP No:	OP-014
SUBJECT: Plant Control Equipment Check List		Effective Date:	1/04

III. Check List: Lucas Plant (continued)

D. **Aeration Basins**

a. Make an overall check of each basin
b. Check splitter box for rag build up
c. Check amount of foam in each basin
d. Check color of each basin

E **Final Basin Inlet Gates**

a. Make sure gates to basins in operation are open
b. Check for foam and unusual odors in wells
c. Check polymer drums for proper levels/feed as needed
d. Check gates for rag buildup

F. **Final Settling Basins**

1. Check collector drive arms
   a. Make sure arms are moving
   b. Check drive motors for heat
   c. Check duck and skimmer for proper operation
   d. Check sludge tipping trough for proper operation
2. Check scum wells
   a. Check scum pumps for proper operation/backwash as needed
   b. Check for overflowing scum
   c. Make sure sufficient water is going into each scum well
3. Check amount of scum/foam is going into each well
4. Check water leaving basins for clarity
5. Check clarity of basins. Look for short circuiting, rising sludge, gas bubbles, good floculative solids entering basins
6. Take sludge blanket reading as needed

G. **Blower Room**

a. Check blowers for heat and check amps
b. Make sure all valves on pipe are open or closed
c. Check panel board for operation of all operational equipment

Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		WWT SOP No:	OP-014
SUBJECT: Plant Control Equipment Check List		Effective Date:	1/04

III. Check List: Lucas Plant (continued)

H. **Mechanical Building**

a. Clean, if needed
   1. Check circulatory water pumps for heat
   2. Check heating units for smoke

b. Check panel boards for operations of all operational equipment

I. **Tunnel**

1. Check following pumps for overheating and cooling water
   e. Tunnel drainage pumps
   f. Spray water pumps
   g. Sanitation pump
   h. Scum pumps
   i. Waste pumps
   j. RAP pumps
   k. Basin drain pumps
2. Check pipes for leaks
3. Check non-potable water pressure
4. Test emergency lights for operation
5. Flush make-up water lines once/shift
6. Check water supply for all RAP pumps in operation
7. Walk down side of tunnel at end and clean

J. **Collecting Samples**

a. Take necessary samples every two hours
b. Make necessary tests
c. Make sure sample containers are properly cleaned to alleviate any residue

Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**OP-16**
SUBJECT: Equipment Cleaning - Scum Wells		**Effective Date:**	

I. **Authority:** Issued under the direction of Superintendent of Water & Sewerage/Wastewater Treatment

II **Purpose:** To ensure proper removal of scum from clarifiers

III. **Responsible Person(s):** This procedure applies to all Operations Section's staff.

IV **Scope:**

Scum wells are located on a concrete walkway beside each final settling basin, and are cleaned once per shift. Steps for cleaning are:

1. Turn off switch located beside each scum well and turn water valve on located beside each well.
2. Let the scum well fill up
3. When scum well is full enough, turnoff the water.
4. Remove grate
5. Take rake provided and clean out all debris floating on top of the water and put the debris in the trash barrel beside the well
6. Replace grate
7. Turn switch back on
8. Take water hose and wash off rake and grating area of all debris.

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Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		WWT SOP No:	OP-017
SUBJECT: Operations Preventive Maintenance - Grit Removal Equipment		Effective Date:	

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:** To ensure proper maintenance of grit removal equipment

III. **Responsible Person(s):** This procedure applies to all Operators.

Startup:

1. **Prior to startup of a cyclone-grit separator (pista-grit), inspect the area for tools and debris.**
2. **Channel inlet and outlet gates should then be open with mechanical bar screen already in service.**
3. **With raw influent flow coming through the channel and grit chamber, turn on priming pump and grip pump switches located on panels beside the pump**
4. **Pump is self-priming and after water reaches the pump, the pump will come on by itself.**
5. **Check the discharge end of grit pump and cyclone to see that pump is pumping efficiently.**
6. **Turn on grit conveyor or screw, power switch located next to grit conveyor on basin complex.**
7. **Turn on paddle wheel.**

Shutdown of grit cyclone (pista-grit):

1. **Turn off the supply pump which feeds the cyclone and paddlewheel.**
2. **Allow cyclone to drain.**
3. **Hose down and wash off overflow discharge and screw conveyor**
4. **Turn off screw-drive motor.**

Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE /PLANT OPERATIONS		WWT SOP No.	OP-018
SUBJECT:		Effective Date	

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:** To ensure the effluent quality

III. **Responsible Person(s):** This procedure applies to all Operators.

IV. **Process:**

Polymer is fed to final settling basin inlet wells when sludge blanket levels exceed four feet in the final settling basin. Polymer and water mixture is fed from a 55-gallon drum through a metering pump at the inlet well. Mixing instructions are as follows:

I. Pour 1-gallon of polymer into each 55-gallon drum with bucket provided.

II. Fill the drum up to the top with non-potable water. Use water hose beside each drum.

III. With suction hose from metering pump in the barrel, turn on metering pump. Metering pump should self-prime. Polymer should be fed at a fast drip and not a steady stream. For metering pump settings, see O & M manual in operator's control room.

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Water & Sewerage		Wastewater Division
Wastewater Treatment Standard Operating Procedure	WWT - SOP No.	SAF-001
SUBJECT: Safety Policy	Effective Date:	

I. **Authority:** Issued under the authority of the Superintendent of Plant Operations/Wastewater Treatment

II. **Purpose:** To prevent occupational injuries and illnesses among city employees. To prevent property damage, and protect customers and the public from accidents, fire, and other health hazard related to city products or operations.

III. **Scope:** This Procedure applies to all Wastewater Treatment employees

IV **Definitions:** Working safely is a condition of employment and a basic responsibility of every employee Supervision has additional responsibilities for providing the facilities, equipment, methods training, and leadership necessary to establish and maintain conditions and practice.

V **Responsible Person (s):** Team Leaders and Supervisors are responsible for assuring that all personne under their supervision are familiar with and comply with this directive.

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Water & Sewerage		Wastewater Division
Wastewater Treatment Standard Operating Procedure	**WWT SOP No:**	**SAF-002**
SUBJECT: **General Safety Rules**	**Effective Date:**	

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:** For the Safety of all Personnel

III. **Guidelines:** As Specified on all Safety Bulletins/Policies and Directives

The following safety rules are general safety rules that apply to all employees, regardless of their job or job tasks. They are not all-inclusive. Safety rules for specific job tasks and operations are located in each department's Safety Rules Handbook. Any employee who willfully violates any safety rule is subject to disciplinary action or termination of employment.

- Obey all safety rules, signs, markings, notices, and instructions. Be particularly familiar with those that apply directly to you.
- Follow all safety instructions. Don't take chances. If you don't know, ask your supervisor for proper job or job task safety instructions.
- Do not undertake a job or job task until you have received proper job safety training and instructions, and have been authorized to perform that job or job task.
- Do not undertake a job or job task that appears unsafe. Report it immediately to your supervisor.
- Report immediately to your supervisor all identified hazards, potential hazards, unsafe conditions, or unsafe practices.
- Report immediately to your supervisor any condition or practice you think might cause an accident, injury, or illness, or damage to equipment, machinery, or vehicles.
- Do not operate any equipment, machinery, or vehicle if you are not authorized to do so.
- Do not operate any equipment, machinery, or vehicle which, in your opinion, is not in safe condition.

Water & Sewerage		Wastewater Division	
OFFICE OF WATER & SEWERAGE /PLANT OPERATIONS		WWT SOP No.	SAF-003
SUBJECT:		Effective Date	

I. **Authority:** Issued under the authority of the Superintendent of Plant Operations/Wastewate Treatment

II. **Purpose:** To prevent occupational injuries and illnesses among city employees. To preven property damage, and protect customers and the public from accidents, fire, and othe health hazards related to city products or operations.

III. **Scope:** This Procedure applies to all Wastewater Treatment employees

IV **Responsible Person (s):** Team Leaders and Supervisors are responsible for assuring that al personnel under their supervision are familiar with and comply wit this directive.

IV. **Process:**

1. Follow all safety procedures.
2. Use all personnel protective equipment (eye protection, gloves, hard hats, respirator, sea belts, etc.)
3. Never smoke inside city building, except in clearly designated areas. Smoking is no permitted in vehicles.
4. Never participate in "horseplay" or any other inappropriate behavior which could result i injury or property damage.
5. Never be in possession of alcohol or illegal drugs, abuse prescription drugs, or be under th influence of such substances while on the work site.
6. Never be in possession of firearms, loaded cartridges, explosives or fireworks on cit property except when approved in writing for business needs by the plant protection.

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Office of Water & Sewerage		Plant Operations Division
Wastewater Treatment Standard Operating Procedure	WWT SOP No:	LAB-001
SUBJECT: Laboratory Job Duties and Responsibilities	Effective Date:	10/05/05

I. Authority: Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. Purpose: To perform permit compliance analysis and reporting, plant control analysis, industrial samplin and billing, serve as liaison with governmental regulatory and enforcement agencies, chemical orderin and inventory control

III. **Class Specification:**

Laboratory Supervisor

1. Coordinates all job functions in the NPDES Laboratory
2. Hires, evaluates and arranges training for laboratory personnel
3. Prepares laboratory budget and procure inventory
4. Prepares daily, monthly, and annual reports including but not limited to DMR's, NPDE compliance reports, hazardous waste disposal and all other functions necessary to insur regulatory compliance for such agencies as DEQ and EPA.
5. Ensures that the plant maintains and renews its discharge permit
6. Prepares industrial sewer bills
7. Performs all other functions as deemed necessary by the Superintendent for the smooth operatio of the laboratory and plant.

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Office of Water & Sewerage		Plant Operations Division
Wastewater Treatment Standard Operating Procedure		WWT SOP No: LAB-002
SUBJECT: Laboratory Job Duties and Responsibilities		Effective Date: 10/5/05

I. Authority: Issued under the direction of the Superintendent of Water & Sewerage/Wastewate Treatment

II. Purpose: To perform permit compliance analysis and reporting, plant control analysis, industria sampling and billing, serve as liaison with governmental regulatory and enforcement agencies chemical ordering and inventory control.

III. **Class Specification:**

INSTRUMENT ANALYST

A. .Sets up and operates Mass Spectrometry and other lab equipment. Calibrate Bod Meter, Ph Meter, Chlorides and Phosphorus

B. .Performs analysis to determine chemical content and other treatment requirements for wastewater and sludge.

C. Make recommendations for corrective action in the treatment process if necessary.

D. Maintains and monitors the QA/QC program. Analyzes data. Tours contract labs for proper techniques.

E. Prepare spreadsheets and assist data entry operator in maintaining records. Checks and assist Laboratory Analyst in logging analytical results including calibrations and preventive maintenance reports and procedures. Complies statistical data when necessary.

F. Prepare Reagent Chemicals

G. Trains others: Trains other laboratory and operations personnel on lab and plant respectively on a routine basis

H. Inventory and Inform Supervisor of chemicals, glassware, spare parts and other instrument analyzes.

I. Researches and develops analytical methods of evaluating chemical and biological contents of source Wastewater.

J. Assist Supervisor and perform other duties as required.

Office of Water & Sewerage		Plant Operations Division
Wastewater Treatment Standard Operating Procedure		**WWT SOP No:**	**LAB-003**
SUBJECT: Laboratory Job Duties and Responsibilities		**Effective Date:**	**10/05/05**

I. Authority: Issued under the direction of the Laboratory Supervisor of Wastewater Treatment

II.Purpose To perform permit compliance analysis and reporting, plant control analysis, industrial sampling and billing, serve as liaison with governmental regulatory and enforcement agencies, chemical ordering and inventory control.

III.Class Specification:

Sr. Laboratory Analyst

1. Performs standardized biological and chemical test analysis to determine chemical and othe treatment requirements for potable, industrial, and wastewater samples.
2. Operates spectrophotometer, microscope and related laboratory equipment
3. Recommends corrective action and routine changes in treatment process
4. Establishes and monitors procedures to insure test and data accuracy
5. Prepares daily reports involving data accumulation and test personnel
6. Supervises and trains subordinate laboratory personnel
7. Receives and responds to citizen complaint concerning wastewater and treatment problems
8. Coordinates with operating personnel to optimize plant performance
9. Performs other duties as assigned or required.

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Office of Water & Sewerage		Plant Operations Division
Wastewater Treatment Standard Operating Procedure		WWT SOP No: LAB-004
SUBJECT: Laboratory Job Duties and Responsibilities		Effective Date: 10/05/05

I. Authority: Issued under the direction of the Laboratory Supervisor of Wastewater Treatment

II. Purpose: To perform permit compliance analysis and reporting, plant control analysis, industrial sampling and billing, serve as liaison with governmental regulatory and enforcement agencies, chemical ordering and inventory control.

III. Class Specification:

Laboratory Analyst

1. Perform standardized biological and chemical test analysis to determine chemical and other required treatment for potable, industrial and wastewater samples
2. Operates basic laboratory equipment
3. Prepares and maintains test data and reagents
4. Coordinates with operating personnel to optimize plant performance
5. Performs other duties as assigned or required
6. Small equipment maintenance/calibration

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE /PLANT OPERATIONS		D.D. Number	NR-001
SUBJECT: North Regional WWTP Overview		Effective Date	

CITY OF SHREVEPORT
PLANT OPERATIONS DIVISION
WASTEWATER TREATMENT SECTION
NORTH REGIONAL WASTEWATER TREATMENT FACILITY

The NRWWTP provides secondary treatment with BOD and Suspended Solids reductions ranging from 85% to 95% depending on influent quality and operating conditions. The plant is basically a modified form of the activated sludge process. It utilizes bioselectors and aeration basins which are classified as a complete mix. Long term or extended aeration type reactor. The bioselectors and aerations basins are followed by final clarifiers to complete the secondary treatment process. The 2004 upgrade at North Regional WWTP increase plant capacity to handle 7MGD a day.

The basic process consists of the following functions:

1. Influent pumping, Aqua screening, grit removal, and flow monitoring.
2. Aeration of raw wastewater in the Bio-Selector and AB's.
3. Final clarification for separation of solids and liquids.
4. Return of a portion of the separated solids (activated sludge) to the Bio-Selector for mixing with influent wastewater.
5. Discharge of the separated liquid from the final clarifier as treated effluent.
6. Ultra violet light used to treat effluent before pumping to the receiving stream.
7. De-watering of waste sludge.

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Dept of Water & Sewerage		Wastewater Division	
Dept of Water & Sewerage/Plant Operations		WWT SOP No.	NR-002
SUBJECT: Flooding Procedures for North Regional WWTP		Effective Date:	1/09

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II. **Purpose:** To protect facility from flooding.

When alerted to a potential flood threat in the North Regional Wastewater Treatment Plant, the following measures shall be implemented to minimize changes to the facility.

III. **Process:**

1. Monitor local media weather reports for extended rain in the forecast and for rising Red River water level.(Local Weather) http://ktbs.com (RiverLevels)http://www2.mvr.usace.army.mil/watercontrol/stationinfo2.cfm?sid=CE41DB4E &fid =SVPL1&dt=S

2. Contact the T. L. Amiss 24-hour duty operator to obtain current Cross Lake water levels, and the schedule for opening flood gates (7650). Note: Flood gate will normally be opened when lake water level reaches ' ' feet.

3. Monitor 12 Mile Bayou level. If level is rising at least 3 inches per hour, the following actions shall be taken:

   A. Call local pump distributor (Red River Pump Specialist @ 459-1131 or Barco Pumps @ 221-7062 0r Service Pumps @ 572-0079) and have them deliver two 12-inch pumps. Place pumps and hoses in position for maximum pumpage: Suction should be installed in Eff. vault and discharge connected to black pipe running over levee.

   B. Call Steve Williams, Environmental Control Officer, 673-7647, to prepare for utilization of a barge

   C. Ensure that all diesel tanks are full of fuel. Contact fuel company concerning bulk fuel on or near the facility.

   D. Schedule employees for 24 hours per day shifts.

Dept of Water & Sewerage		Wastewater Division	
Dept of Water & Sewerage/Plant Operations		WWTP SOP No.	NR-002
SUBJECT: Flooding Procedures for North Regional WWTP		Effective Date:	1/09

4. Once the surrounding areas begin to flood, the following measures shall occur:

   A. Maintain the flow in the inlet well to approximately six feet utilizing the screw pump to control flow. Continue this process until all screw pumps are in service.

   B. When the inlet well level reaches approximately 15 feet, begin to divert flow to the equalization basin. Only enough to maintain flow in the inlet well at approximately 15 feet.

   C. Once all the equalization basins are full, turn on the two 12-inch pumps in the effluent well.

   D. If the flow continues to rise, and began to spill over into the storm drainage, turn on the 12 in pump beside maintenance shop.

5. Keep constant watch on pumps. Keep pumps full and suction ends cleaned. Wait for flow to recede.

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Dept of Water & Sewerage		Wastewater Division
Dept of Water & Sewerage/Plant Operations	WWT SOP No:	SL-001
SUBJECT: Sewer Lift - Scheduled Daily Tasks	Effective Date:	

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment

II **Purpose:** To provide a list of duties to be performed by the Operations Staff of Sewer Lift

III **Scope:** This procedure applies to all Wastewater Treatment Operations Section personnel operating in Sewer Lift

IV. **Responsible Person (s):** Team Leaders (Trouble Shooters) and Supervisors are responsible for assuring that all personnel under their supervision are familiar with and comply with this directive.

V. Actions Required: Inspect all Lift Station operations and equipment assigned as route.

1 Daily inspection and maintenance such as, but not limited to:

- **A.** Pumps, motors, belts, drive lines, compressors, and all other equipment contained in lift stations.
- **B.** Condition of station such as fences, station structure, grass & weeds, debris in wetwell or on the ground at the station.
- **C.** Cleaning and upkeep of all assigned equipment such as trucks, tools, personal protective equipment.
- **D.** Complete all paper work as assigned such as daily work log, daily flow log & station check, work request & work orders and form 24's.

2 Perform calculations to obtain critical information such as, but not limited to:

- **A.** Converting PSI to Head and Head to PSI.
- **B** Figuring Total Dynamic Head (TDH).
- **C.** Reading pump performance curves.

Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		D.D. Number	SL-002
SUBJECT: Lift Station Procedures		Effective Date	

LIFT STATION PROCEDURES

The Lift Station Sub-division has the responsibility of maintaining and keeping operational (116) sanitary sewer lift stations and two (2) flow equalization basins. The majority of these sites are equipped with radio signal sending capabilities.

I. ORIGIN OF ASSIGNMENT

A) Daily (Routine Maintenance)

B) Emergency Repair (Unscheduled)

c) Scheduled (Preventive Maintenance)

II. MAINTENANCE/REPAIR

A) **Routine Maintenance:** The normal workday begins at 6:00 a.m. for two crews and 7:00am for all others. Five (5) maintenance crews composed of two men each perform routine maintenance to motors, pumps, shafts, valves, air compressors, etc. These crews inspect most of the stations on a daily basis. Flow charts are maintained on all stations.

B) **Emergency Repair (Unscheduled):** The stations equipped with radio gear are monitored by the Lucas WWTP operator's office twenty-four (24) hours a day, seven (7) days a week. Signals that appear on the monitor alert the operators of a primary power failure, RTU failure, motor failure, pump failure, high level, low level, security broken, etc. These signals are relayed to the crew responsible for a particular station. The station is inspected immediately and necessary repairs are made. Electrical equipment is serviced and maintained by four (4) Electricians with individual trucks make repairs on Switch gear, motors, relays, air compressors, signal equipment, soft starts, VFD's etc.

A maintenance mechanic and electrician are on call during nights, weekends and holidays. They respond to trouble signals by the SCADA system. Should a lift station become inoperable because of a major problem, personnel will setup a by-pass pump from the wetwell to the force main until repairs can be made. In some cases, by-pass pumping can be delayed longer, depending upon the size of the station.

DEPARTMENT		DIRECTIVE	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		D.D. Number	SL-002
SUBJECT: Lift Station Procedures		Effective Date	

Lift Station Procedures Continued

Major problems with pumps and electric motors are pulled and taken to private shops for repair.

Diversion of sewer to Huntington Flow Equalization Basin and West Shreveport Flow Equalization Basin can be initiated by Sewer Lift personnel when influent flow rates at Lucas reach a maximum.

C) **Preventive Maintenance:** The equipment and preventive maintenance are properly identified and scheduled for tasks to be performed (grease bearings, change sprockets, etc.) on a monthly, quarterly, semiannual and annual basis.

III. RECORDKEEPING

All reports, travel logs, flow charts, station data, schematics, etc. are maintained in this sub-division.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		D.D. Number	SL-004
SUBJECT: Lift Station Emergency By-pass Pumping Procedure		Updated Date	2/09

PURPOSE:

In the event a sewer lift station has a major problem and can no longer pump, a maintenance crew and electrician are on call during nights, weekends, and holidays. They respond to problems indicated by the SCADA System. Should a lift station become inoperable because of a major problem, personnel will setup a by-pass pump from the wetwell to the force main until repairs can be made. In some cases, by-pass pumping can be delayed longer, depending upon the size of the station.

1. After it is determined by-pass pumping is needed, the crew will call the "on call" supervisor or trouble shooter to notify him of the situation. The supervisor or trouble shooter will make the decision to set up our by-pass pumps or call a contractor to set up a by-pass pump.

2. If it is determined Sewer Lift has a by-pass pump and hoses capable of handling that station, the Sewer Lift crew will return to the Lucas WWTP and gather all the equipment needed to do the installation of the by-pass pump.

3. If it is determined a contractor is needed, the supervisor or trouble shooter will call the contractor to see if they have the needed equipment and how long it will take to complete the delivery and set up.
The supervisor or trouble shooter will then contact the crew to inform them of who will be bringing the pump, when they will be there, and if they need to stand by and wait for the pump.

3.1 Sewer Lift crew will need to check by-pass pump to make sure it is operating properly and that sufficient waste water is being removed from the station.

4. If the problem situation is after regular working hours, all paper work will be turned in for processing the next regular working day.

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Dept of Water & Sewerage		Wastewater Division
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No. SL-005
SUBJECT: Sewer Lift Stations		Effective Date

Location	Type	Address
Acadiana Place	Pkg	405 Creek Hollow
Agurs	Bldg	West end of Catahoula St.
Alabama	Can	2938 Logan Avenue (in rear)
AMI	Pkg	5557 Financial Plaza
Ashley Ridge	Sub	730 N. Ashley Ridge Loop
Attaway	Can	Doug Attaway Blvd. (C/B PC)
Azalea Gardens	Pkg	862 Azalea Gardens Drive
Bethlehem	Sub	6971 West 70th Street
Bickham	Bldg	3311 Newman
Blind Bayou	Pkg	780 Bester Street
Broadacres	Can	8080 Broadacres Road
Broadmoor	Bldg	6000 Fern Avenue
Broadmoor	Bldg	6000 Fern Avenue
Burgundy Ridge	Sub	2021 Meadow Bend
Cadillac	Can	150 Levee @ Cross Bayou
Capilano	Pkg	1055 Capilano Drive
Cedar Creek	Pkg	9055 Dean Road
Cedar Grove	Bldg	505 West 80th Street
Cedar Grove	Bldg	505 West 80th Street
Champion Lake	Bldg	801 East Preston Street
Chardonnay Circle	Sub	2928 Chardonnay Circle
Cherokee	Can	311 North Thomas
Country Club	Can	4600 Lakeshore Drive Ext.
Country Club HIlls	Can	4007 Robin Lane (in rear)
Creswell	Sub	7700 Creswell Street
Cross Creek	Pkg	8585 Business Park Drive
Cross Lake Patrol	Sub	2900 Municipal Pier Road
Darien	Bldg	3162 Darien Street
David Raines		2907 Round Grove

Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	SL-005
SUBJECT: Sewer Lift Stations		Effective Date	

Elgin	Can	6311 Elgin
Fannin	Can	101 East Fannin Street
Fern	Pkg	7699 Fern Street
Flournoy Lucas	Sub	316 E. Flournoy Lucas Rd
Forbing Glen	Pkg	9255 Ellerbe Road
Fullerton	Sub	North Hearne Ave
Glen Avenue	Bldg	1620 Glen Ave.
Gorton Road	Can	3007 Gorton Road
Hardy	Bldg	3800 Hardy Street
Hattie	Pkg	2950 Hattie Street
Havanna	Can	2073 Havanna Street
Hawkins	Pkg	1600 Hawkins Street
Hickory Ridge	Pkg	3454 St. Hellens Drive
Hidden Trace	Sub	512 Grand Oaks Drive
Huntington	Can	3401 Grantham Street
Hutchinson	Can	3811 Hutchinson
Jefferson-Paige	Can	5509 Jefferson-Paige Road
Kennie Road	Pkg	496 Kennie Road
Kings Place	Sub	860 Kings Place
Knight Street	Can	3225 Knight Street
LaCaze	Pkg	428 Lavita (in rear)
Lakeside	Sub	1068 Water's Edge Circle
Lakeside Boat	Pkg	158 Waters Edge Dr.
Land-O-Trees	Can	6020 Land-O-Trees
Legardy	Can	1915 Legardy Street
Linear	Bldg	2195 Linear Street
Long Lake	Pkg	1267 Capilano Drive
Long Timber	Can	3012 Long Pines Lane
Looney	Pkg	3199 Milam
Lucas Outfall	Bldg	8890 Youree Drive
Lucas Outfall	Bldg	8890 Youree Drive
Mackey Lane	Bldg	8899 Cedar Creek Drive

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	SL-005
SUBJECT: Sewer Lift Stations		Effective Date	

Maywood	Can	3618 Maywood
Meadow Parkway	Can	3198 Meriwether Road
Mirador	Pkg	5673 South Lakeshore Drive
Morris Dickson	Pkg	2199 Morris & Dickson Rd
Mount Zion	Pkg	720 Mount Zion Road
Norris Ferry Road	Pkg	10177 Trailridge Drive (in rear)
North Arnov	Pkg	3000 North Market Street
North Caddo	Pkg	1303 Tolmak
North Hearne	Sub	1326 North Hearne Avenue
North Pierre	Bldg	555 East Flornouy Lucas Rd.
North Point Drive	Pkg	2955 North Point Drive
Oak Forest	Pkg	3033 Oak Forest
Patzman Park	Bldg	713 Christopher
Pinecrest	Can	6620 Jefferson-Paige Road
Pinehill Estates	Pkg	3300 Martin Luther King Jr. Dr.
Pinehill Road	Pkg	2000 Pinehill Road
Port (South Lift Station #1)	Bldg	10701 LA #1 South
Professional Plaza	Can	1050 East Bert Kouns
Provenance	Can	1910 Southern Loop
Public Landing	Can	5888 South Lakeshore Drive
Querbes	Bldg	200 East Gregg Street
Querbes		
Reunion	Sub	850 Mount Zion Rd.
Richmond	Sub	3957 Richmond
Risinger	Can	3005 Risinger Road
Riverwalk I	Can	7311 Old River Road
Riverwalk II	Can	2100 East Bert Kouns
Rockwell Road	Pkg	6740 Rockwell Road
Round Grove	Sub	2851 Round Grove
Roundtree	Sub	3905 Rountree
Saint Charles Place	Sub	329 St. Charles Blvd.
Sand Beach	Pkg	7000 Fern Ave.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	SL-005
SUBJECT: Sewer Lift Stations		Effective Date	

Southern Trace	Bldg	200 Southern Trace Parkway
Spring Lake	Sub	414 Spring Lake Drive
Squirrel Point	Pkg	2003 North Cross
Stoner	Bldg	851 E. Stoner Ave
Stoner Boat	Sub	Stoner Avenue @ Boat Launch
Stratmore	Can	10109 East Kings Highway
Sunset	Can	1201 Hassett
Swamp	Sub	2906 Long Lake Dr.
Tammer Lane	Pkg	3500 Tammer Lane
Timber Knoll		3100 Timber Knoll Dr.
Tou-Don	Pkg	6828 Jefferson-Paige Road
Victory	Sub	104 East Slattery
Wallace		10439 Kingston Road
Wallace	Bldg	10439 Kingston Road
Webb Plantation (OXY)	Bldg	LA #1 @ Sand Beach Bayou
West Algonquin	Can	2146 West Algonquin
West Shreveport	Can	5600 Bert Kouns (Ind. Loop)
Willow Point I	Can	5546 South Lakeshore Drive
Willow Point II	Sub	1832 Willow Point Drive
Wonderland	Pkg	3137 Pines Rd.
Yacht Club	Can	2903 Municipal Pier Road
Youree Drive	Sub	9205 Youree Drive

Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT-SOP No.	SF-001
SUBJECT: Sludge Farm–Start Up Procedures		Effective Date	

I. **Authority:** **Issued under the direction of the Superintendent of Water & Sewerage/ Wastewater Treatment.**

II. **Purpose:** **To ensure proper treatment of biosolids.**

III. **Responsible Person(s): Sludge Farm Personnel**

BIOSOLIDS PROCESSING PLANT

Start Up Procedures

1. Start Decant pump. Make sure valves are in correct positions before starting.
2. Record final totalizer readings from pervious day production on Operator Log sheet.
3. Record Weigh Belt Total on Operator Log Sheet and reset totalizer.
4. Start 4" water pump at lagoons. Check oil and fuel levels prior to starting.
5. Start booster pump. Check for correct pressure (110 to 125 psi).
6. Check return water pumps. Pumps should operate in Manual Mode when presses are running.
7. Start chlorinator system.
8. Start Aeration system (See Aeration start up procedures).
9. Check lime scrubber vacuum pipe. Clean if needed prior to start up.
10. Make sure hopper level sensor is clean prior to start up.
11. Turn of water-to-water box on Schwing Pump.
12. Start Reactor Line in control room. Verify that conveyors are running.
13. Start the belt presses.
14. Start the lime screw in the control room.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT-SOP No.	SF-002
SUBJECT: Sludge Farm-Shut Down Procedures		Effective Date	

I. **Authority:** **Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment.**

II. **Purpose:** **To ensure proper treatment of biosolids.**

III. **Responsible Person(s): Sludge Farm Personnel**

SHUT DOWN PROCEDURE

1. Turn off lime feed and vibrator at the computer (set the lime feed to 0%.)
2. Turn off the sludge and polymer to all the presses that are running. While all the presses are running empty, wash them down.
3. Stop the blower at the computer. Turn off 1" water valve and open the 2" drain valve at the blower.
4. Shut down the belt presses and turn off the control power on the panel.
5. Shut down the reactor line at the computer.
6. Drain the water box on the Schwing pump.
7. Turn off 6" water pump to City if running.
8. Turn off the 4" water pump at the lagoon.
9. Turn off the plant water booster pump.
10. Turn off the chlorinator system.
11. Set selector switch to automatic on return water pumps.
12. Turn off main power to the polymer system

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT-SOP No.	SF-003
SUBJECT: Sludge Plant-pH 24 Hour Testing Procedures		Effective Date	

I. **Authority:** **Issued under the direction of the Superintendent of Water Sewerage/Wastewater Treatment.**

II. **Purpose:** **To ensure proper treatment of biosolids.**

III. **Responsible Person(s): Sludge Farm Personnel**

pH 24 HOUR TESTING PROCEDURE

1. Collect a sample of final product and place in a container. Label the container with the date and time the sample was collected. Allow to cool.
2. Record the date and time on the pH log sheet.
3. Take approximately 10 grams of sample and place in a 400ml beaker. Add 50ml of distilled water to the beaker and mix together to make a homogenous solution.
4. Place the pH electrode and the temperature probe in the mixture and gently stir for ten seconds.
5. Wait for reading to stabilize and record the reading on the pH log sheet.
6. After two hours, repeat steps 3, 4, and 5 for the (+) 2 hour measurement using a portion of the original sample that was collected.
7. Save the remaining portion of the original sample so it can be tested the following day. Repeat steps 3, 4, and 5 on the following day and record results for the (+) 22 hour measurement.

Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	SF-004
SUBJECT: Sludge Farm-Daily pH Monitoring		Effective Date	

I. **Authority:** **Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment.**

II. **Purpose:** **To ensure proper treatment of biosolids.**

III. **Responsible Person(s): Sludge Farm Personnel**

DAILY pH MONITORING

1. Calibrate pH meters before setting up samples of treated cake, untreated cake. Record the date, time and your name at the bottom of Solid Test Sheet.
2. Initial Temp on treated cake only. Initial pH needs to be 12 or higher. (2) hr pH needs to be 12 or higher(22) hr pH needs to be 11.5 higher.
3. Set up lab after Plant has been on line for 2 hours.
4. Use pH temperature correction factors at varying temperatures.
5. See Chief Supervisor for instructions if needed.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	SF-005
SUBJECT: Sludge Farm-Belt Press Start Up Procedure		Effective Date	

I. **Authority:** **Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment.**

II. **Purpose:** **To ensure proper treatment of biosolids.**

III. **Responsible Person(s): Sludge Farm Personnel**

BELT PRESS START UP PROCEDURE

1. Make sure plant water is on for belt wash.
2. Make sure doctor blades are clean and free of debris.
3. Turn on control power switch.
4. Turn on polymer tank mixers (if equipped) and check polymer tank levels.
5. Start air compressor or hydraulic unit for belt tension. Belt tension on air controlled systems should between 40-60psi. Hydraulic systems should have around 350 psi for tension and 200 psi for steering.
6. Start belt drive. Watch belt tracking to insure steering systems are working properly.
7. Open spray bar valves all the way and then close to clean spray nozzles.
8. Turn on floc tank (if available on unit).
9. Make sure polymer valves are in correct position(s) and start polymer pump.
10. Make sure sludge valves are in correct position(s) and start the sludge pum0.

NOTES:

a) The start-stop control for the outside conveyor is located on the 2.5 meter press control panel.
b) Belt speeds typically run between 50-60% of full speed.
c) The first twenty minutes of operation require close observation. The percent solids of the sludge varies from day to day.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE /PLANT OPERATIONS		WWT SOP No.	SF-006
SUBJECT: Sludge Farm-Belt Press Shut Down Procedure		Effective Date	

I. **Authority:** **Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment.**

II. **Purpose:** **To ensure proper treatment of biosolids.**

III. **Responsible Person(s): Sludge Farm Personnel**

BELT PRESS SHUT DOWN PRCODEURESS

1. Turn off the sludge pump.
2. Turn off the polymer pump.
3. Turn off floc tank mixer.
4. Allow belts to run empty. Wash down press while running belts out.
5. Turn off control power. This will shut off everything else that is operated by the control panel.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	SF-007
SUBJECT: Sludge Plant Weigh Belt Procedures		Effective Date	

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment.

II. **Purpose:** To ensure proper treatment of biosolids.

III. **Responsible Person(s): Sludge Farm Personnel**

WEIGH BELT PROCEDURES

Total Reset Procedure

1. Start conveyor belt in Manual Mode
2. With conveyor belt running, Press the Zero key. Do not press enter.
3. Press the Run key.
4. Press the Reset Total key.
5. Press the Clear key.
6. The totalizer should now be reset to zero.

Zero Calibration Procedure

1. Start the conveyor belt in Manual Mode. Let the conveyor belt run for at least five minutes to warm up the belt.
2. Press the Zero key.
3. Press the Enter key and wait. The Calibration is now in progress!
4. When the display reads "Calibration Complete" press the Enter key to accept calibration.
5. Press the run key to return to Run Mode.

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Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	SF-008
SUBJECT: Sludge Farm--Blower Start & Shut Down Procedures		Effective Date	

I. **Authority:** **Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment.**

II. **Purpose:** **To ensure proper treatment of biosolids.**

III. **Responsible Person(s): Sludge Farm Personnel**

BLOWER START UP &SHUT DOWN PROCEDURE

Blower Start Up Procedure

1. Make sure 1" water valve is turned off.
2. Open the 2" drain valve all the way.
3. Have operator in the control room start the blower at the computer.
4. Allow the blower to accelerate to full speed.
5. Open the 1" water valve approximately half way.
6. Check the pressure gauge. It should read between 3-6psi.
7. Adjust the 2" drain valve so that a liquid level is maintained in the sight glass.
8. Check the sight glass every hour to make sure liquid level is maintained. **DO NOTOVERFILL TANK WITH WATER**. This could stop and or damage the blower.
9. Check the vacuum gauge in the building. It should be reading at or near 10 in HG.

Blower Shut Down Procedure

1. Stop the blower at the computer terminal in the control room.
2. Turn off the 1" water valve.
3. Open the 2" drain valve to drain the tank.

Dept of Water & Sewerage		Wastewater Division	
DEPT OF WATER & SEWERAGE/PLANT OPERATIONS		WWT SOP No.	SF-009
SUBJECT: Sludge Farm-Winterization Checklist		Effective Date	

I. **Authority:** Issued under the direction of the Superintendent of Water & Sewerage/Wastewater Treatment.

II. **Purpose:** To ensure proper treatment of biosolids.

III. **Responsible Person(s): Sludge Farm Personnel**

WINTERIZATION CHECKLIST

1. Fill 4" pump with fuel at the end of the day and leave running.
2. Leave plant water pump running. Adjust water pressure to 9- PSI to prevent water tank from running out of water.
3. Run drain pump by water tank in Manual Mode.
4. Run drain pump by silo in auto Mode.
5. Crack water valves open at all outdoor garden hose locations. Run hoses to nearest drains if possible. (temp. site, by scale, by reactor loading area etc.
6. Leave water on to the Blower and open drain valve all the way.
7. Remove plug at the top of Decant suction hose to break the siphon.
8. Open both ball valves on the decant pump to drain the pump. Remove the 1" hose from the pump and drain. Remove 6" hose if necessary.
9. Drain water out of 6" City water pump if not running.

OUTDOOR PRESSSES

1. Close water valve to stop water from going to polymer systems for both presses and drain plumbing and hoses.
2. Connect 1' hose to the polymer pump on each system and recirculate the polymer back into the mixing tanks. Make sure both valves are open on the bottom of the mixing tanks.
3. (Optional) On 2.5 meter press, disconnect sludge discharge hose from floc tank and connect it to the 4"sludge supply hose for the small press. This will enable you to recirulate sludge through both supply pipes.

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Dept of Water & Sewerage		Wastewater Division
Wastewater Treatment Standard Operating Procedure	WWT SOP No:	PS-001
SUBJECT: Permits and Standards	Effective Date:	

Authority: **Issued under the direction of the Dept. of Environmental Quality and the Environmental Protection Agency**

A. Regulatory Agencies:

There are three primary agencies responsible for establishing water quality standards and discharge requirements applicable to municipal sewerage systems.

1. Louisiana Stream Control Commission
P. O. Box FC
University Station
Baton Rouge, Louisiana 70821

2. Louisiana Department of Environmental Quality
P. O. Box 44091
Baton Rouge, Louisiana 70804-4091

2. United States Environmental Protection Agency
First International Building
1201 Elm Street
Dallas, Texas 75270

B. National Pollutant Discharge Elimination System (NPDES):

1. General:

A. This permit is required by all municipal waste discharges as provided by the Federal Water Pollution Control Act (33 U.S.C. 1251 et.) Public Law 92-500.

B. It is administered by the U. S. Environmental Protection Agency through the Louisiana Department of Environmental Quality.

C. A permit is required for each discharge point source.

Dept of Water & Sewerage		Wastewater Division	
Wastewater Treatment Standard Operating Procedure		WWT SOP No:	PS-001
SUBJECT: Permits and Standards		Effective Date:	

1. Requirements

   a. The City is operating under an interim NPDES permit with the following effluent limitations:

      (1) BOD = 30 mgl (30 day avg.)

      (2) SS = 30 mgl (30 day avg.)

2. Upon expiration of the interim permit, a new NPDES permit will be issued to the City with the same effluent limitations as the interim permit above.

3. Reports:

   a. The discharge permit requires monitoring reports to be submitted quarterly.

   b. Use report from EPA 3320-1 or current revisions.

   c. Submit quarterly to the Louisiana Department of Environmental Quality unless the specific permit indicates otherwise.

C. Water Quality Standards:

The State of Louisiana has developed a Water Quality Management Plan as required by Section 208 of Public Law 92-500. The effluent from NRWWTP is discharged into the Red River and is covered by the plan as follows:

1. Appendix 1, Red River Basin Plan, Volume 1.

2. Stream Segment 1001 which basically covers the Red River Basin from the Arkansas-Louisiana border to Alexandria, Louisiana.

2. The bypassing of any discharge from the NRWWTP is prohibited unless it is unavoidable to prevent the loss of life or severe property damage or where excessive storm drainage or runoff would damage the treatment facility. If bypassing does occur, the City must notify the State within three days of each occurrence.

3. If the NRWWTP is unable to comply with effluent limitation specified in the NPDES Permit, the City must provide the issuing authority with the following information:

   a. A description of the noncomplying discharge (including its impact on the receiving stream).

   b. The cause of the noncompliance with effluent limitation.

   c. The anticipated time the condition is expected to continue, or if the condition has been corrected, the duration of the noncompliance period.

   d. The steps taken by the personnel to reduce and eliminate the noncomplying discharge.

   e. The steps taken to prevent its recurrence.

4. The addresses of the agencies are:

   a. Louisiana Department of Natural Resources
   Office of Environmental Affairs
   Water Pollution Control Division
   P. O. Box 44066
   Baton Rouge, Louisiana 70704

   b. Louisiana Health and Human Resources
   Administration
   Division of Health
   P. O. Box 60630
   New Orleans, Louisiana 70160