DOE/EA-1692

FINAL

ENVIRONMENTAL

ASSESSMENT

ENVIRONMENTAL ASSESSMENT FOR DEPARTMENT OF ENERGY LOAN GUARANTEE TO RED RIVER ENVIRONMENTAL PRODUCTS, LLC FOR CONSTRUCTION AND START-UP OF AN ACTIVATED CARBON MANUFACTURING FACILITY IN RED RIVER PARISH, LOUISIANA

U.S. Department of Energy
Loan Guarantee Program Office
Washington, DC 20585

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CONTENTS

SUMMARY i

1.0 Purpose and Need 1

1.1 Purpose and Need for Agency Action 1

1.2 Background 3

1.3 Scope of Environmental Assessment 3

2.0 PROPOSED ACTION AND ALTERNATIVES 5

2.1 RREP AC Manufacturing Facility Description 5

2.2 Location and Project Area Description 8

2.3 Project Progression 14

2.3.1 Construction Progress 14
2.3.2 Operating Cycles 14
2.3.3 Project Lifetime 14
2.3.4 Site Closeout and Restoration Requirements 14
2.3.5 Decontamination and Decommissioning Activities 14

2.4 No Action Alternative 15

2.5 Alternatives Considered but Eliminated 15

3.0 EXISTING ENVIRONMENT AND ENVIRONMENTAL EFFECTS 17

3.1 Land Use 17

3.1.1 Existing Environment 17
3.1.2 Effects of Project 17
3.1.3 No Action Alternative 17

3.2 Geology 18

3.2.1 Existing Environment 18
3.2.2 Effects of Project 18
3.2.3 No Action Alternative 18

3.3 Soils 18

3.3.1 Existing Environment 18
3.3.2 Effects of Project 19
3.3.3 No Action Alternative 19

3.4 Topography and Drainage 19

3.4.1 Existing Environment 19
3.4.2 Effects of Project 21
3.4.3 No Action Alternative 21

3.5 Ecological Resources 22

3.5.1 Vegetation 22
3.5.2 Wildlife Habitat and Threatened and Endangered Species 22
3.5.3 Special Designation Areas 23
3.5.4 No Action Alternative 26

3.6 Water Resources 26

3.6.1 Floodplain Assessment 26
3.6.2 Surface Waters and Wetlands 31
3.6.3 Groundwater 39
3.6.4 Water Quality 40
3.7 AIR QUALITY 43
3.7.1 Existing Environment 43
3.7.2 Effects of Project 46
3.7.3 No Action Alternative 56
3.8 WASTE MANAGEMENT 56
3.8.1 Existing Environment 56
3.8.2 Effect of Project 57
3.8.3 No Action Alternative 60
3.9 SOCIOECONOMIC CONDITIONS 60
3.9.1 Demographics and Economics 63
3.9.2 Environmental Justice 64
3.9.3 Public Health and Safety 66
3.9.4 Noise 72
3.9.5 Visual and Aesthetic Qualities 77
3.10 CULTURAL RESOURCES 78
3.10.1 Existing Environment 78
3.10.2 Effects of Project 78
3.10.3 No Action Alternative 78
3.11 TRANSPORTATION 78
3.11.1 Existing Environment 79
3.11.2 Effects of Project 79
3.11.3 No Action Alternative 83
3.12 CUMULATIVE IMPACT ANALYSIS 85
3.12.1 Introduction 85
3.12.2 Methodology 85
3.12.3 Projects Considered for the Cumulative Impacts Analysis 85
3.12.4 Environmental Consequences 88
4.0 ENVIRONMENTAL AND REGULATORY REVIEWS 91
4.1 FEDERAL REGULATORY REQUIREMENTS AND COORDINATION 91
4.1.1 Applicable Federal Regulatory Requirements 91
4.1.2 Federal Agency Correspondence and Coordination 91
4.2 STATE REGULATORY REQUIREMENTS AND COORDINATION 92
4.2.1 Applicable State Regulatory Requirements 92
4.2.2 State Agency Correspondence and Coordination 93
4.3 LOCAL REGULATORY REQUIREMENTS AND COORDINATION 94
5.0 LIST OF PREPARERS 95
6.0 REFERENCES 98

FIGURES

Figure 2-1 Process Flow Diagram, One Production Line
Figure 2-2 RREP AC Manufacturing Facility Location
Figure 2-3 General Vicinity Map Showing RREP's Property Boundary Line
Figure 2-4 Project Area Map
Figure 3-1 RREP Property and Levee
Figure 3-2 Special Designation Areas Map
Figure 3-3 Project Site Floodplain Map
Figure 3-4 RREP and Alternative Site Floodplain Map
Figure 3-5a Impacts to Waters of the U.S.
Figure 3-5b Impacts to Waters of the U.S.
Figure 3-6 Map of Red River Parish Showing Census Tracts
Figure 3-7 Noise Receptor Locations
Figure 3-8 Local Road System
Figure 3-9 Proposed DOTD Location of US Highway 371

TABLES

Table S.1 Summary of Environmental Effects
Table 3.1 Summary of Permanent Impacts to Waters of the U.S.
Table 3.2 Summary of Temporary Impacts to Waters of the U.S.
Table 3.3 National Ambient Air Quality Standards
Table 3.4 Ambient SO_2 Monitoring Data for the Shreveport, LA Area
Table 3.5 Ambient PM_{10} Monitoring Data for the Shreveport, LA Area
Table 3.6 Ambient $PM_{2.5}$ Monitoring Data for the Shreveport, LA Area
Table 3.7 Ambient NO_2 Monitoring Data for Harrison County, TX
Table 3.8 Summary of Construction Equipment Annual Emission (tons)
Table 3.9 Permitted Annual Emissions per Production Line
Table 3.10 BACT for RREP Process Emissions
Table 3.11 SIL Analysis Summary (Two AC Production Lines)
Table 3.12 NAAQS Compliance Analysis Summary (Two AC Production Lines)
Table 3.13 Class II PSD Increment Consumption Analysis (Two AC Production Lines)
Table 3.14 TAPs Impacts Analysis Summary (Two AC Production Lines)
Table 3.15 Estimated Annual On-site CO_2 Emissions for the RREP AC Manufacturing Facility, One Production Line
Table 3.16 Summary of On-Road Mobile Source Annual CO_2 Emissions (tpy)
Table 3.17 Occupational Health and Safety Risks
Table 3.18 Noise Monitoring Locations and Average Measured Levels
Table 3.19 Baseline and Projected Operation Noise Levels
Table 3.20 Resource Inputs and Outputs for the RREP AC Manufacturing Facility

APPENDICES

Appendix A FARMLAND CONVERSION IMPACT RATING FORMS
Appendix B USFWS DOCUMENTATION
Appendix C FLOODPLAIN DOCUMENTATION
Appendix D USACE DOCUMENTATION
Appendix E LDEQ DOCUMENTATION
Appendix F CONSTRUCTION EMISSIONS DOCUMENTATION
Appendix G ON-ROAD MOBILE SOURCE CO_2 EMISSIONS ANALYSIS
Appendix H SHPO DOCUMENTATION

ACRONYMS

AC	activated carbon
AAS	Ambient Air Standard
ACI	activated carbon injection
ADA-ES	ADA-Environmental Solutions, Inc.
BACT	Best Available Control Technology
BFE	base flood elevation
CO_2	carbon dioxide
CO	carbon monoxide
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CLECO	Cleco Electric
CWA	Clean Water Act
DOE	U.S. Department of Energy
DOTD	Louisiana Department of Transportation and Development
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
EPAct 2005	Energy Policy Act of 2005
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
H_2SO_4	sulfuric acid
HCl	hydrogen chloride
HF	hydrogen fluoride
LOC	Louisiana Office of Conservation
LDEQ	Louisiana Department of Environmental Quality
LOMR-F	Letter of Map Revision based on fill
LOS	level of service
LPDES	Louisiana Pollutant Discharge Elimination System
MACT	Maximum Achievable Control Technology
MHF	multi-hearth furnace
$\mu g/m^3$	microgram per cubic meter
msl	mean sea level
MW	megawatt

NEP	National Emphasis Program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NO_x	oxides of nitrogen
NO_2	nitrogen dioxide
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Administration
PM	particulate matter
$PM_{2.5}$	PM with an aerodynamic diameter of less than or equal to 2.5 micrometers
PM_{10}	PM with an aerodynamic diameter of less than or equal to 10 micrometers
ppm	parts per million
Property	approximate 60-acre site
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation Recovery Act
RO	reverse osmosis
ROW	right of way
RREP	Red River Environmental Products, LLC
RRM	Red River Mining Company
SCC	Source Classification Code
SDA	spray dryer absorber
SHPO	State Historic Preservation Officer
SIL	Significant Impact Levels
SNCR	selective non-catalytic reduction
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control and Countermeasures
SWPPP	Storm Water Pollution Prevention Plan
TAP	toxic air pollutant
T&E	threatened and endangered
tpy	tons per year
USACE	U.S. Army Corps of Engineers
UF	ultra filtration
U.S.	United States
USC	U.S. Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
v/c	volume/capacity
VOC	volatile organic compounds
Zephyr	Zephyr Environmental Corporation

1.0 PURPOSE AND NEED

1.1 PURPOSE AND NEED FOR AGENCY ACTION

The proposed action evaluated by the U.S. Department of Energy (DOE) in this environmental assessment (EA) is to issue a loan guarantee in the amount of $245 million to Red River Environmental Products, LLC (RREP) to support construction and start-up of an Activated Carbon (AC) manufacturing facility in Red River Parish, Louisiana. RREP is a wholly-owned subsidiary of ADA Carbon Solutions, LLC, a joint venture between ADA-Environmental Solutions, Inc. (ADA-ES) and Energy Capital Partners I, LP and its parallel funds.

The Energy Policy Act of 2005 (EPAct 2005) established a Federal loan guarantee program for eligible energy projects that employ innovative technologies. Title XVII of EPAct 2005 authorizes the Secretary of Energy to make loan guarantees for a variety of types of projects, including those that ‘‘avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; and employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued.” The two principal goals of the loan guarantee program are to encourage commercial use in the United States of new or significantly improved energy-related technologies and to achieve substantial environmental benefits. The purpose and need for agency action is to comply with DOE’s mandate under EPAct 2005 by selecting eligible projects that meet the goals of the Act. DOE is using the NEPA process to assist in determining whether to issue a loan guarantee to RREP to support the proposed project.

Section 1703 (b) of EPAct 2005 lists the categories of projects that are eligible for guarantees under Section 1703. The proposed project qualifies under category (9) pollution control equipment and category (7) efficient end-use energy technologies.

The RREP facility would produce 75,000 tons (150 million pounds) per year of powdered AC, a mercury capture sorbent that enables coal-fired power plants to lower mercury emissions through activated carbon injection (ACI). If utilized, that amount of AC could remove a total of 30,000 pounds of mercury per year from the flue gas of approximately 160 coal-fired power plants combined.[3] The proposed project would also incorporate ACI to reduce its own mercury emissions by 80% compared to an uncontrolled AC manufacturing facility.

Coal is an important domestic resource that generates over 50% of the electricity in the U.S. Due to its abundance and relatively low price, coal is expected to remain a key energy source in the U.S. However, the more than 1,100 U.S. coal-fueled power plant boilers emit approximately 40% of all anthropogenic (human-caused) mercury emissions. Mercury emitted by coal-fired plants eventually finds its way into water bodies and rivers and ultimately into fish and other wildlife. When ingested by humans at certain quantities, mercury can cause severe

[3] Calculated using RREP facility production of 150 million pounds and annual AC use per year by an average coal plant of 925,056 lbs to achieve a 90% reduction in mercury emissions.

neurological damage and even death, particularly in young children and developing fetuses (U.S. Environmental Protection Agency (EPA), 2009a). Attaining significant mercury reductions from power plants is critical to be able to safely use the energy afforded by U.S. coal.

ACI is an established and effective means of capturing mercury emissions. Mercury control regulations have been issued in 20 states, and Federal regulation is in development. Compliance with these rules and consent decrees by power plants is mandatory. On February 6, 2009, the EPA announced that it intends to impose a Federal Maximum Achievable Control Technology (MACT) standard for mercury mitigation on all coal-fired power plants in the U.S.[4] ACI is the dominant control technology to address mercury emissions and is being actively deployed to meet these existing requirements. The implication of a Federal mercury control rule would be a tripling in annual U.S. demand for AC. Given that today's U.S. AC manufacturing facilities are operating at near-capacity, RREP's facility offers an opportunity to assist in meeting the demand (Sjostrom, S., M. Durham, C.J. Bustard, and C.E. Martin, July 2009).

In addition to the potential mercury reduction benefits, the proposed AC manufacturing facility design represents a significantly improved technology that would result in increased energy efficiency in comparison with existing AC facilities. The plant design incorporates four parallel furnaces in a single production line to maximize efficiency of scale and enable the efficient recovery of waste heat for power generation. This power would be utilized to support facility operations, reducing the facility's need to obtain electricity from outside sources. Excess energy not used by the facility would then be sold to the power grid, potentially reducing the need for electricity generation and associated CO_2 emissions elsewhere.

The following summarizes the additional efficiency and environmental benefits of the RREP project:

- RREP would produce up to 13 megawatts (MW) of excess power through the utilization of waste heat that would be sold to the grid, in addition to supporting its own auxiliary load during normal operations.
- The waste heat recovery boiler will save 26 million gallons of water per year as compared to a conventional plant design.
- The facility would incorporate Best Available Control Technology (BACT) air pollution control into its design, including:
    - an efficient afterburner for control of carbon monoxide (CO) and volatile organic compounds (VOC);
    - advanced control for nitrogen oxides (NO_x) using selective non-catalytic reduction (SNCR);
    - ACI for mercury control;
    - a 92% efficient scrubber for sulfur dioxide (SO_2) control; and

[4] On February 8, 2008, the D.C. Circuit Court of Appeals ruled against the Clean Air Mercury Rule ("CAMR") and sent CAMR's new source performance standard back to the U.S. EPA for consideration. The court's ruling was based upon its opinion that EPA was obligated to issue a more stringent MACT rule under Section 112 of the Clean Air Act Amendments of 1990.

- o baghouses for particulate and sulfuric acid mist (H_2SO_4) control.

1.2 BACKGROUND

EPAct 2005 established a Federal loan guarantee program for eligible energy projects that employ innovative technologies. The two principal goals of the program are to encourage commercial use in the United States of new or significantly improved energy related technologies and to achieve substantial environmental benefits. DOE believes that commercial use of these technologies would help sustain and promote economic growth, produce a more stable and secure energy supply and economy for the United States, and improve the environment. DOE published a Final Rule that establishes the policies, procedures, and requirements for the loan guarantee program (10 Code of Federal Regulations Part 609). In June 2008, DOE issued a solicitation announcement inviting interested parties to submit proposals for projects that employ energy efficiency, renewable energy, and advanced transmission and distribution technologies that constitute New or Significantly Improved Technologies (as defined in 10 CFR Part 609).

In addition to the RREP AC manufacturing facility, the project also includes a water intake line, wastewater outfall line, gas line, and electric line (collectively referred to as linear features); a water intake pump station, and an electric substation. Construction began on the project in September of 2008, and RREP submitted an application to DOE for a loan guarantee on February 26, 2009. Since that time, the private applicant has continued work on the project, utilizing non-federal funds. As of the end of December 2009, construction of the facility was about 60% complete. [5] All major equipment was on site and installed and all major foundations and structures were erected, with the ongoing focus on piping and electrical work. The substation was 80% complete and all linear features were installed. Construction had also begun on the water intake pump station. Construction of the project is expected to be completed around July 2010. For purposes of evaluating the potential impacts of the proposed project, DOE has analyzed the environmental effects of the entire project, starting at the beginning of construction in September 2008 through the facility's proposed operation. If issued, any loan guarantee funds would be limited to eligible project costs as defined by 10 CFR Part 609.12 after the date of application.

1.3 SCOPE OF ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) presents information on the potential impacts associated with guaranteeing a loan to RREP and covers the construction and operation of the completed AC manufacturing facility. DOE has prepared this EA to comply with the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500−1508), and DOE NEPA Implementing Procedures (10 CFR Part 1021). If no significant impacts are identified during preparation of this EA, DOE would

[5] December 2009 was selected in order to be as current as possible based on the timing of the NEPA review.

issue a Finding of No Significant Impact (FONSI). If potentially significant impacts are identified, DOE would prepare an environmental impact statement (EIS).

This EA: (1) describes the affected environment relevant to the impacts of the proposed action and No Action Alternative; (2) describes the proposed action; (3) analyzes environmental impacts associated with the proposed action and No Action Alternative; and (4) identifies and characterizes cumulative impacts that could result from the proposed action in relation to other ongoing or proposed activities within the surrounding area.

This EA has been organized into the following sections and supporting appendices:

- Section 1.0, Purpose and Need: This section describes the purpose of and need for the proposed DOE action and the scope of the EA.
- Section 2.0, Proposed Action and Alternatives: This section describes the location of the project and provides a description of the AC manufacturing process. It also describes the project progression and alternative sites considered.
- Section 3.0, Existing Environment and Environmental Effects: This section discusses the existing environment and the effects of the project in the areas of land use, geology, soils, topography and drainage, ecological resources, water resources, air quality, waste management, socioeconomic conditions, and cultural resources, as well as potential cumulative effects that may be associated with the project.
- Section 4.0, Environmental and Regulatory Reviews: This section describes Federal, state, and local regulatory requirements and coordination.
- Section 5.0, List of Preparers: This section lists the individuals responsible for developing this EA and provides a brief description of their credentials.
- Section 6.0, References: This section lists the references used in preparing this EA.
- Supporting Appendices

Although construction of the project is underway (it began in September of 2008), the baseline for this EA (that is, the existing environment) consists of the conditions that existed before any site preparation or construction was commenced. If the existing environment has been altered as a result of construction activities conducted prior to the end of December 2009, it is described in this EA in the discussion on effects of the project. Additionally and except with respect to air quality impacts and the wastewater discharge, this EA addresses the effects of the operation of one AC production line. With regard to the exceptions, the air emissions and industrial wastewater data are reported for two lines because it was prudent for the applicant to compile and file with the Louisiana Department of Environmental Quality (LDEQ) just one air quality permit request and one industrial wastewater discharge request rather than repeat the same effort for a possible second production line. Plans to proceed with the second line are not in place and would not be undertaken until the timing and scope of a Federal Maximum Achievable Control Technology (MACT) standard for mercury mitigation on all coal-fired power plants in the U.S. are established. At such time, the need for a second line would be evaluated. Thus, the cumulative impact analysis considers the operation of two AC production lines.

2.0 PROPOSED ACTION AND ALTERNATIVES

DOE's proposed action is to issue a loan guarantee in the amount of $245 million to RREP to support construction and start-up of an AC manufacturing facility in Red River Parish, Louisiana. The proposed facility would use lignite coal to produce 75,000 tons (150 million pounds) per year of powdered AC. The project also includes a water intake line, wastewater outfall line, gas line, and electric line (collectively referred to as linear features); a water intake pump station, and an electric substation.

2.1 RREP AC MANUFACTURING FACILITY DESCRIPTION

The RREP AC manufacturing facility design is based on a steam activation process and uses four parallel multi-hearth furnaces (MHF) in a single production line.[6] Figure 2-1 is a block flow diagram of the process. The feedstock (lignite coal) would be dried, charred and activated with steam in the MHFs. Coal would only be used as a feedstock to generate the AC, which would exit the bottom of the MHFs and be further processed into powdered or granular AC.

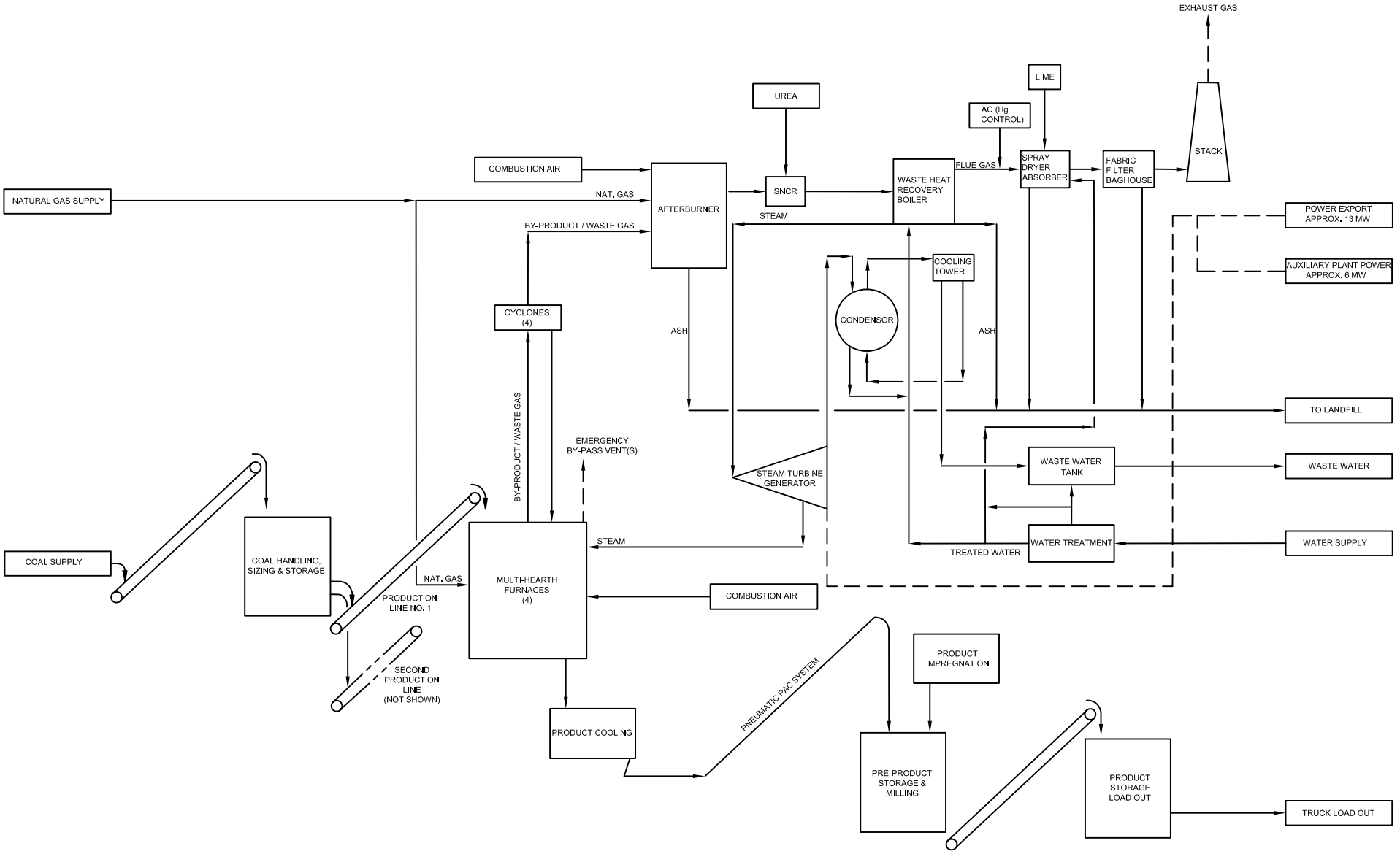
Trucks would deliver coal and lime to the RREP AC manufacturing facility. The coal would be dumped to an enclosed hopper, then moved via enclosed conveyors to the crusher building, storage silo, day silo, and ultimately to the MHFs. The lime would be pneumatically transferred from the truck to the lime storage silo. The lime is slaked with water to create lime slurry, which is stored in a feed tank, which serves the spray dryer absorber (SDA).

Gases and water vapor exit the top of the four MHFs, and this by-product/waste gas stream is combined and routed to an afterburner. A small amount of natural gas is used as a supplemental fuel in the MHFs and afterburner. The gases exiting the afterburner pass through an unfired waste heat recovery boiler and economizer to make steam. A portion of this steam is routed to the MHF steam injection system to drive the activation process. The balance of this steam is used to drive steam turbine generators to make electrical energy. Roughly 19 megawatts (MW) of electricity would be produced (by one production line); about 6 MW would be used by the plant with the balance being sold to the grid. The RREP facility is the first AC manufacturing facility to use waste heat to generate electricity for sale.

The exhaust stream from the afterburner is treated for SO_2 and H_2SO_4 removal by the SDA, which uses lime slurry. The SO_2 and H_2SO_4 in the flue gas react with the lime slurry, the water in the slurry evaporates, and a portion of the remaining solids drops out of the SDA. The solid matter is exhausted with the flue gases through a baghouse that captures the solids before the gases exit to the atmosphere through the main stack. The material captured by the baghouse consists of fly ash and calcium sulfate/sulfite. Most of this material and the material that drops out in the SDA, along with the ash captured in the Afterburner and Waste Heat Recovery Boiler bottoms, would be conveyed to a silo or dumpster for truck load-out.

[6] Activation is a process that increases the surface area of a carbon particle through the creation of pores. Steam and air are injected into the lower hearths of the furnace to drive the activation of carbon.

After exiting at the bottom of the MHF, the coarse AC would be cooled and moved via enclosed conveyors to product silos. From here, the coarse product would be fed to mills for grinding to the desired size for powdered AC. After milling, the powdered AC would be moved via a pneumatic conveying system to storage silos for truck load-out.



RED RIVER ENVIRONMENTAL PRODUCTS, LLC			FIGURE 2-1 PROCESS FLOW DIAGRAM ONE PRODUCTION LINE		
			File Name: Block Diagram 1.dwg		
Designed By: R. von Czoernig	Revised By: R. von Czoernig	Checked By: L. Corio	Project No. 009132.005	Date: 12/30/2009	Sheet: 1 of 1

2.2 LOCATION AND PROJECT AREA DESCRIPTION

The RREP AC manufacturing facility is being constructed on an approximately 60-acre site located in Red River Parish, Louisiana, approximately three miles west of the Town of Coushatta and the Red River channel and less than one mile west of the Town of Armistead (the closest community of residences) on the south side of Parish Road 604. The site is located approximately 1/4-mile west of the Union Pacific Railroad and State Highway 1 and is within 30 miles of several active lignite mines and/or potential lignite reserve areas. Louisiana lignite is a local material, and RREP has identified two potential sources. The site is directly adjacent to an existing lignite mine, the Oxbow Lignite Mine, which could provide the facility's supply. Additionally, the site is within 30 miles by truck of the planned Five Forks Mine. A regional map showing the location of the RREP AC manufacturing facility is provided in Figure 2-2. As a result of site preparation and construction activities already underway, the average elevation of the site is approximately 134 feet above mean sea level (msl). Pre-construction elevations ranged from approximately 124 to 138 ft above msl.

RREP purchased the site in July 2008 from Red River Mining Company (RRM). The site has been mined, and reclamation of mined areas was initiated when mining of those areas was finished. Reclamation of the property was completed in 2007, and it has been released from bond and classified for Industrial Use. Land nearby is either reclaimed mine land or used for agricultural purposes. Figure 2-3 is a map of the area immediately surrounding the site.

Prior to the start of construction of the RREP AC manufacturing facility, there were no buildings or other structures on the site and little to no vegetation on the land surface. A maintained mining road borders the northern and western sides of the site, and an ExxonMobil crude oil pipeline and a power line run parallel to and outside of the western boundary. Acreage being used for agricultural purposes is located to the north and northeast. A part of the RRM mining area that is undergoing reclamation abuts the east side of the site. Undeveloped land and active mine areas lie south of the site (Zephyr Environmental Corporation (Zephyr) 2008a).

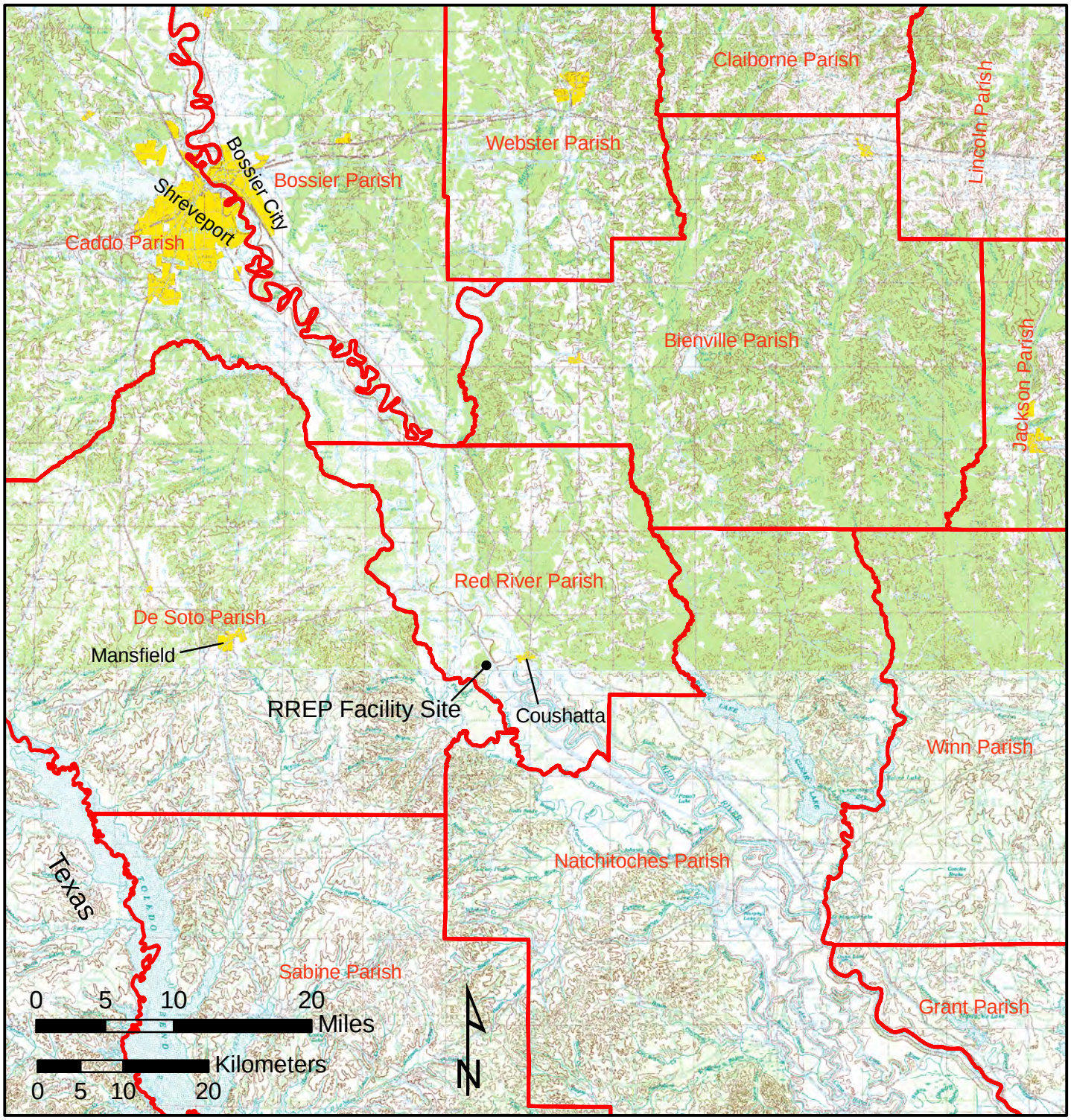


Figure 2-2
RREP AC Manufacturing Facility Location

Sources: Alexandria and Shreveport USGS 1:250,000 Quadrangle; 1994.
Armistead, Red River Parish, Louisiana
Date: 24 June 2009

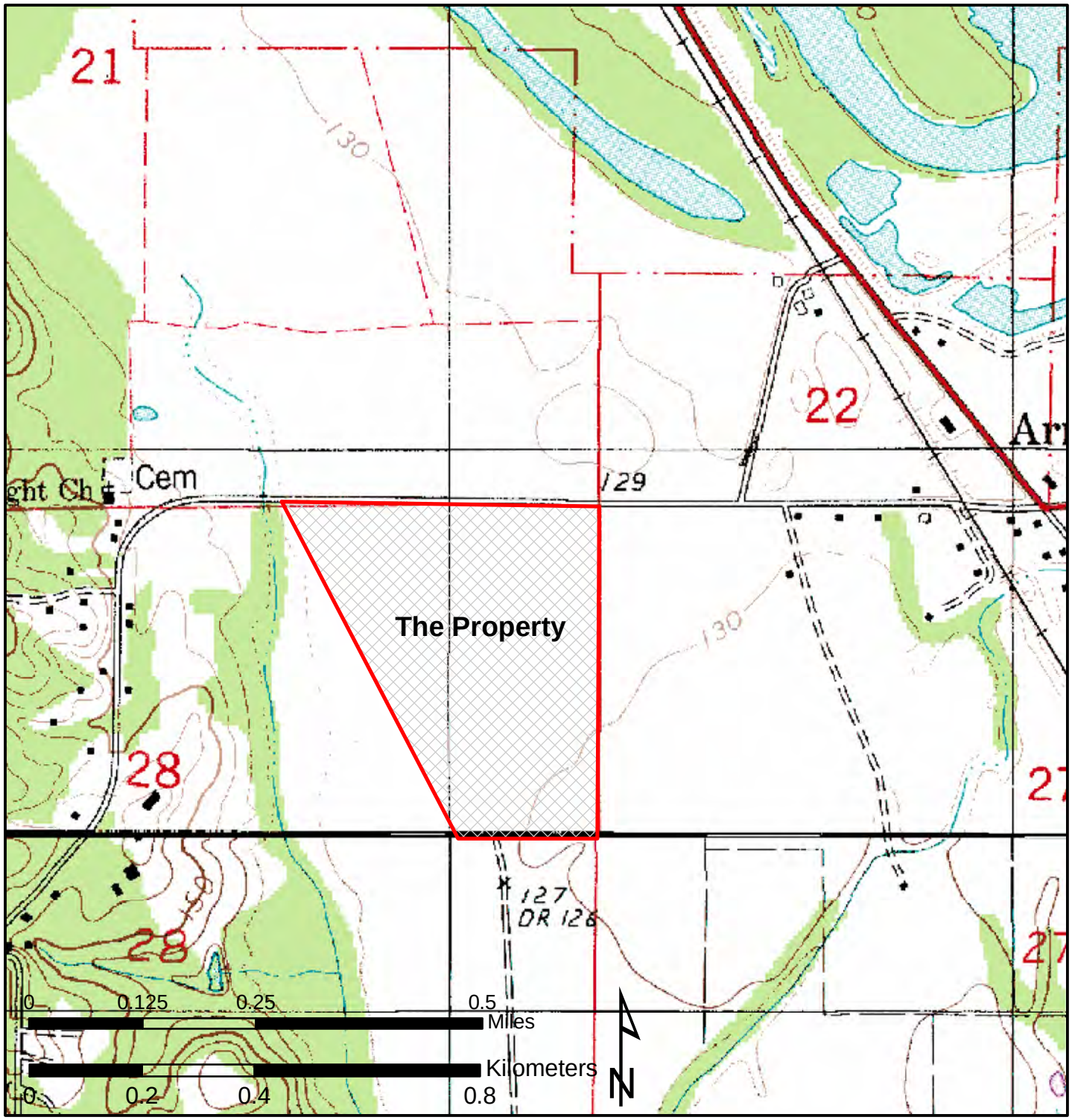


Figure 2-3
General Vicinity Map Showing
RREP's Property Boundary Line

Sources: Harmon USGS Quadrangle; 1996.
Armistead, Red River Parish, Louisiana
Date: 6 June 2009

Site Boundary

Linear features and supporting structures required for the manufacturing operation are shown in Figure 2-4. The gas line right of way (ROW) follows an easterly path through generally level ground and traverses Parish Road 604 twice. The gas line travels to a compressor station 1/2 mile east of the Property in the southwest corner of the Parish Road 604 and Union Pacific Railroad's ROW intersection. The water intake line ROW follows the same path as the gas line and continues south after the compressor station, parallel to Pig Pen Bayou. It extends approximately 2.5 miles southeast to the intake structure at Hollingsworth Cutoff (an oxbow of the Red River).[7] Both the intake and outfall lines are approximately 3 miles long (they follow the gas line for ½ a mile and then travel an additional 2.5 miles).

The intake pump station is located on the bank of Hollingsworth Cutoff. The intake line from the structure reaches approximately 750 feet from the bank into the open water of Hollingsworth Cutoff. A steep slope separates the intake pump station from the water body.

The outfall line would be co-located within the water intake line ROW along Pig Pen Bayou from the site, approximately 2.5 miles southeast to Parish Road 601. Approximately 50 feet west of Parish Road 601, the outfall ROW diverts northeast and generally follows the top bank line of the Hollingsworth Cutoff approximately 1,150 feet to the Red River.

The outfall is located in the Red River and extends under the channel. The outfall pipe reaches approximately 110 feet from the bank into the open water of the Red River.

The electric line ROW travels north and northwest to a proposed new substation located just north of the intersection of U.S. Highway 84/State Highway 1 and an existing Cleco Electric (Cleco) main line. The electric line is approximately 4 miles. It leaves the RREP AC manufacturing facility and parallels the existing electric line ROW to the north on a 30-foot offset to the east for approximately 6,700 feet. The line then continues in a more northwesterly direction along the west side of U.S. Highway 84/State Highway 1 on a 30-foot offset to the west of the existing electric line for approximately 11,500 feet. At this point the line would travel east across U.S. Highway 84/State Highway 1 to a new substation, construction of which was near completion at the end of 2009.

The 34.5 to 138-kV substation provides the electrical power interface between the project and the electrical transmission service provider, Central Louisiana Electric Company (Cleco). Power generated by the RREP AC manufacturing facility's steam turbine generator (over that required for operating the facility) would be exported through the 34.5 kV transmission line and substation to the Cleco interconnection switchyard. The substation and transmission line also provides the capability to supply power from Cleco to the AC manufacturing facility if there were a loss of on-site power generation. The substation is located on approximately 3.67 partially-developed acres on the east side of State Highway 1, approximately 1.25 miles north of the intersection of State Highway 177 and U.S. Highway 84/State Highway 1. Prior to construction of the substation, the majority of the property was actively farmed. The substation property is

[7] An oxbow is a U-shaped bend in a river or stream that no longer carries the main discharge. The Hollingsworth Cutoff is an oxbow created by the meandering of the Red River.

bounded to the south by the existing Cleco transmission line referenced above, to the west by U.S. Highway 84/State Highway 1, a CrossTex pipeline ROW, and another transmission line ROW. A man-made non-jurisdictional drainage ditch, which carries storm water from the farm field to the bar-ditch along the east side of State Highway 1, traverses the substation property from east to west just north of the existing Cleco transmission line.

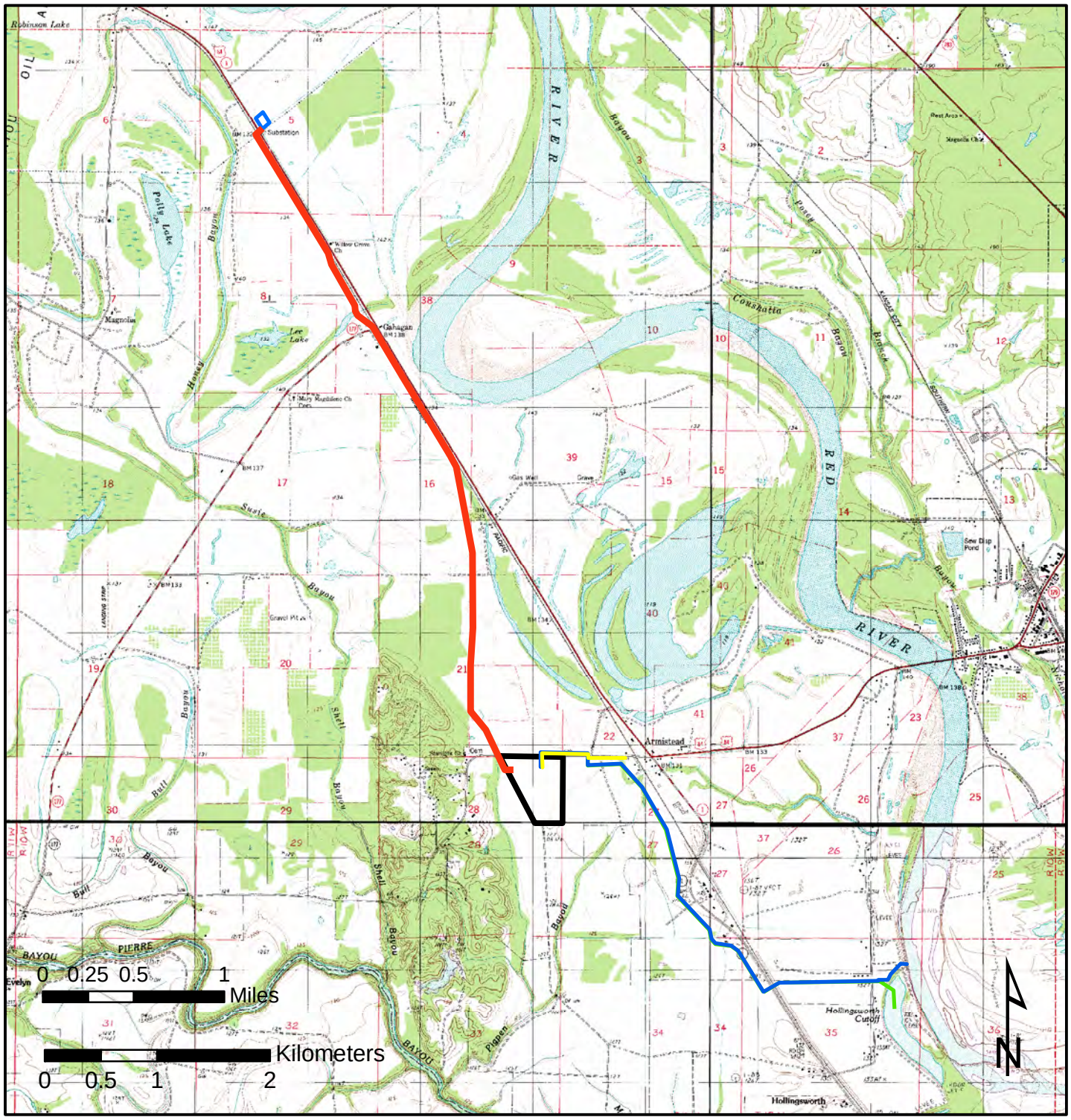
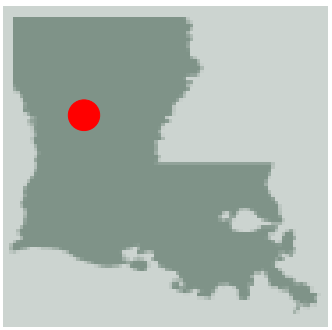


Figure 2-4
Project Area Map



Sources: Harmon USGS Quadrangle; 1996.

Armistead, Red River Parish, Louisiana

Date: 6 June 2009

Gas Line
Site Boundary
Substation
Electric Line ROW
Intake ROW
Outfall ROW

2.3 PROJECT PROGRESSION

2.3.1 Construction Progress

Construction began on the RREP AC project in September of 2008. RREP submitted an application to DOE for a loan guarantee for the project on February 26, 2009. If issued, any loan guarantee funds would be limited to eligible project costs as defined by 10 CFR Part 609.12 after the date of application. This EA addresses all of the construction activities necessary for the functioning of the manufacturing facility, despite the fact that DOE's due diligence review, including the NEPA process, began after the start of construction.

At the end of December 2009, construction of the RREP AC manufacturing facility was approximately 60% complete. All major equipment was on site and installed, and all major foundations and structures were erected, with the ongoing focus on piping and electrical work. The substation was 80% complete, and all linear features were installed. Construction had also begun on the water intake pump station.

2.3.2 Operating Cycles

The RREP AC manufacturing facility is a continuous process designed to operate 24 hours per day, 7 days per week, 365 days per year. The intent is to run the facility full-time with the exception of scheduled facility shutdowns for maintenance activities.

2.3.3 Project Lifetime

The planned life and longevity of the RREP facility is 30 years. The life of the facility would be evaluated prior to the 30-year point to determine whether operations would continue.

2.3.4 Site Closeout and Restoration Requirements

At this time, there are no required closure plans for this type of manufacturing facility. Therefore, any closure activities would be in accordance with good business and environmental practices. If the site undergoes closure, the new landowner would be responsible for the site, or RREP would be responsible if it retains ownership.

2.3.5 Decontamination and Decommissioning Activities

At this time, there are no required decontamination or decommissioning plans for this type of manufacturing facility. There is no known record of contamination at the site as supported by Phase I Environmental Site Assessments that were conducted on the site (Zephyr 2008a, 2009a, and 2009f). The potential for surface and subsurface impacts would be minimized by the use of concrete bases, foundations, and secondary containment in the process areas and storage tanks. The primary materials used and produced at the site are inert such as water, lignite coal, AC, ash, and calcium sulfate/sulfites (aka gypsum).

2.4 NO ACTION ALTERNATIVE

Under the No Action Alternative, DOE would not issue the loan guarantee to RREP for the project. Two scenarios exist under the No Action Alternative (1) the project would eventually secure other financing and proceed without DOE's loan guarantee and the potential impacts would be essentially identical to those under DOE's proposed action; or (2) construction of the RREP facility would not be completed and it would not achieve commercial operation. In order to allow a comparison between the potential impacts of the completed, operational project and the impacts of not proceeding with the project, the second scenario is presented in this EA as the No Action Alternative. Under the No Action Alternative, the new supply of AC from the RREP AC manufacturing facility would not be available for mercury control for coal-fired power plants.

The decision for DOE consideration covered by this NEPA review is whether to approve the loan guarantee for the RREP AC manufacturing facility project or not. RREP's decision process in selecting the Red River site is described in Section 2.5 and supported by state and local approvals (see Section 4.2, 4.3, and Appendices). Further, there are no unresolved conflicts concerning alternative uses of available resources associated with the project site that would suggest the need for other alternatives (40 CFR 1508.9(b)). Therefore, other than no action, there is no alternative to the proposed action considered in this NEPA review.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED

RREP considered a number of criteria in selecting the most suitable site for the proposed project. The primary driver for selecting a site was proximity to the primary raw material, lignite coal. Due to the expense of transporting lignite coal relative to its value and the need to keep the lignite covered/protected, it was critical that the manufacturing facility be located in an area rich in nearby lignite reserves. Further, because the quantity of raw material is much greater than the quantity of product (by a factor of four to five times), minimizing transportation cost and impacts on the raw material side reduces truck traffic and fuel consumption. Also important in the selection process were the following factors:

- infrastructure support (combination of transportation, electrical interconnect, gas and water availability);
- proximity to potential clients/end users of the AC product;
- timing to secure land ownership;
- avoidance or minimization of environmental impacts;
- state, local and regional benefits; and
- trained workforce availability and other economic considerations.

Several sites in Northwest Louisiana and North Dakota were evaluated during the site selection process. Based on the factors above, the selection was narrowed down to two sites in Northwest Louisiana that would have access to the same lignite coal reserves. The two sites had many of the same features; however, one was not selected because it is located

significantly below the floodplain and was not previously mined. The RREP site best met the criteria listed above.

3.0 EXISTING ENVIRONMENT AND ENVIRONMENTAL EFFECTS

This section describes the existing social, economic, and environmental conditions of the proposed project area (AC manufacturing facility site, linear features, water intake pump station and substation) and the environmental effects that could result from implementing the proposed action or No Action Alternative described in Section 2. A discussion of potential cumulative effects is also provided in this section.

3.1 LAND USE

3.1.1 Existing Environment

The entire 60-acre site on which the manufacturing facility is located is reclaimed land associated with a nearby lignite mine. Land to the north of Parish Road 604 has been developed for livestock grazing. Acreage to the northeast is being used for agricultural purposes. A part of the Red River Mining Company (RRM) property that is undergoing reclamation abuts the east side of the site. Undeveloped land and active mine areas adjoin the southern boundary of the site. The majority of the acreage in the immediate vicinity of the linear features and substation has been utilized for agricultural purposes (hay farming).

3.1.2 Effects of Project

The 60-acre site that is being developed for the manufacturing facility, as well as for support (e.g., office buildings, parking lots, the storm water retention pond, etc.) is all previously reclaimed mine land. The change in land use involved coordination with the Louisiana Office of Conservation (LOC) and the Red River Parish Police Jury. The Police Jury issued a resolution approving the reclassification to Industrial Use. Coordination with the Police Jury also included the Building Permit issued February 26, 2008 (and a 30-day extension issued August 20, 2008).

Installation of the substation and intake pump station required the conversion of approximately three acres that were used for agricultural purposes to industrial use (Zephyr 2008f, 2009c, and 2009g). All associated linear features (i.e., water, electric, and gas lines) are consistent with linear features in the general vicinity of the Project Area. Linear features were installed in existing ROWs or newly-obtained ROWs, many of which were adjacent to existing ROWs in order to avoid long-term negative impacts on land use.

3.1.3 No Action Alternative

The manufacturing facility site has been reclassified to industrial use and construction activities have been conducted. The linear features have been installed, and construction of the substation and water intake pump station has been initiated. Under the No Action Alternative, changes to land use would be the same as under the proposed action.

3.2 GEOLOGY

3.2.1 Existing Environment

The majority of the proposed project is located on an outcrop of the Holocene-age Alluvium, which reflects the regional geologic setting. The Alluvium is characterized by silt, silty clay, and some very fine sand lain down as natural levees. The Alluvium unconformably overlies Pleistocene-age terrace deposits and the Wilcox Group of Paleocene age.

The Holocene-age Alluvium as well as some strata of the underlying Paleocene-age Wilcox Group were excavated from the 60-acre manufacturing facility site during lignite mining. The site has undergone mine reclamation whereby the mine pit was backfilled with mine spoils to a predetermined elevation in accordance with the mine reclamation plan. Therefore, the site is now situated on backfill soil instead of Holocene-age Alluvium. Strata of the Wilcox Group is still present beneath the site. This is the only known site-specific deviation from the regional geologic setting (Zephyr 2008b, 2008d, 2009e, and 2009g).

3.2.2 Effects of Project

Project construction involved some subsurface construction activities for the installation of utilities. Site assessments were conducted prior to construction activities and guided appropriate construction techniques. Project construction has followed appropriate techniques and procedures in accordance with state and local regulations to ensure that there are no adverse effects to geology.

3.2.3 No Action Alternative

Project construction already conducted has not adversely impacted geology. Under the No Action Alternative, changes to geology would be the same as under the proposed action.

3.3 SOILS

3.3.1 Existing Environment

The proposed project is within the Moreland clay soil unit, which is generally described as containing moderately deep to deep clay and silty clay layers. The majority of this association is found on natural levees. The linear features, substation, intake structure, and outfall are underlain by multiple soil types including Moreland clay, Buxin clay, Coushatta silty clay loam, Caspiana silt loam, and Coushatta silt loam. The soils in this region are predominately poorly drained, nearly level, clay soils with small regions of fine, sandy loam. Buxin clay is the only soil type located within the area covered by the proposed project that is listed as hydric on the county or National Hydric Soils of the United States list (U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Mapper, accessed 2009).

All of the soils affected by the proposed project are classified as prime farmland soils (see footnote 2 in the Summary). The goal of the Farmland Protection Policy Act is to minimize the impact Federal actions have on the unnecessary and irreversible conversion of farmland to non-agricultural use.

3.3.2 Effects of Project

Farmland Conversion Impact Rating forms and supporting documentation were completed and submitted to the Natural Resources Conservation Services (NCRS). In addition to the main manufacturing facility site, the submittal included the substation and intake pump station sites, as well as rights-of-way for the electric line, the gas line, and the waterline intake and outfall. Construction of the facility, substation, and intake pump station and the installation of linear features has resulted in the conversion of approximately 66 acres of prime farmland. None of the combined ratings resulting from the NRCS evaluation exceeded 160 points. According to the Farmland Protection Policy Act, sites with a rating less than 160 need no further consideration (Appendix A).

3.3.3 No Action Alternative

Construction activities have been conducted on the proposed project that have resulted in the conversion of prime or unique farmland soils. Under the No Action Alternative, changes to soils would be the same as under the proposed action.

3.4 TOPOGRAPHY AND DRAINAGE

3.4.1 Existing Environment

The pre-construction land surface had been modified from that shown on U.S. Geological Survey (USGS) topographic maps (Harmon and Evelyn 7.5 minute Louisiana Quadrangles) by prior mining and reclamation activities. A major change in topography and drainage of the area that resulted from the mining activities was the placement of a levee and slurry wall surrounding the mining area. The levee has an approximate elevation of 134 ft mean sea level (msl). Drainage from north to south was diverted to the east around the mined area. Figure 3-1 illustrates the area encompassed by the levee and the drainage canal and the location of the AC manufacturing facility site. The existing drainage of the area within the levee, including the site, is to the south. There is a knoll about 100 feet higher to the west of the mining area. Land within the mining area was reclaimed and filled to elevations that ranged from approximately 124 to 138 ft above msl.

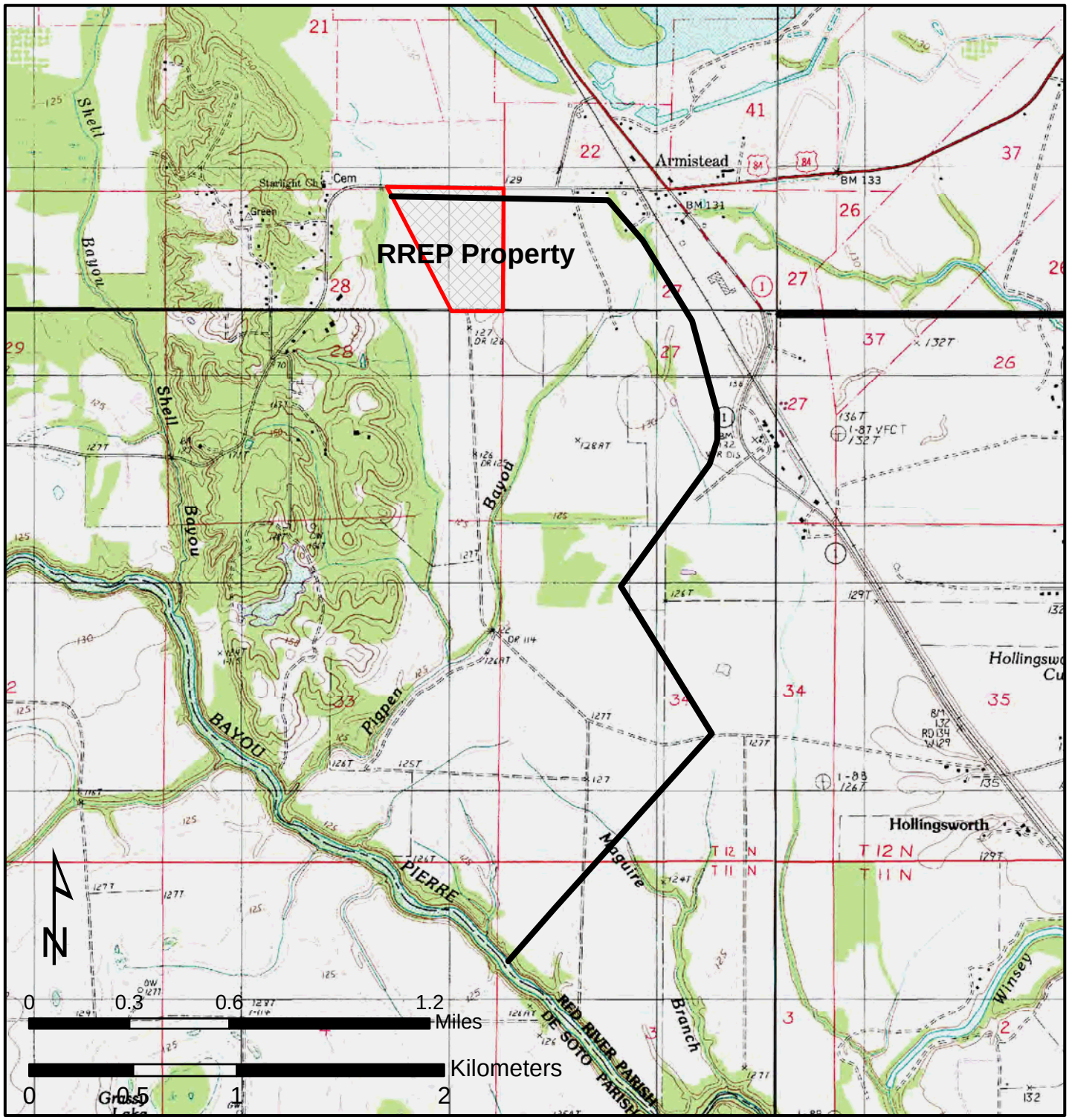


Figure 3-1
RREP Property and Levee

Sources: Harmon USGS Quadrangle; 1996.

Armistead, Red River Parish, Louisiana

Date: 6 June 2009

Levee

Site Boundary

3.4.2 Effects of Project

Clearing, grubbing, and mass excavation at the manufacturing facility site began in early September 2008. Mass excavation, backfill, and compaction for the site were completed in early March 2009. Pre-construction elevations of the site in the area of the manufacturing facility ranged from approximately 124 to 138 ft above msl. During construction, approximately 160,000 cubic yards of existing soils unsuitable for foundations were excavated, at an average cut of 4.8 ft, and disposed of on RRM property. Approximately 135,000 cubic yards of backfill with appropriate geotechnical properties were imported from a borrow pit near Coushatta and compacted with an average fill depth of 2.9 ft. The site elevation, following placement and compaction of fill and gravel, ranges from approximately 131 to 134.5 ft, with an average elevation of approximately 134 ft. The required grading did not significantly alter the overall topography of the manufacturing facility site and/or the surrounding area. The average elevation is approximately 134 feet above msl. This is above the 100-year base flood elevation (BFE) discussed in Section 3.6.1.[8]

To ensure that the manufacturing facility would not increase downstream drainage flows from site runoff, a storm water retention pond was constructed. The pond is designed to capture and retain runoff from the manufacturing facility site up to the 50-yr return interval event, with the runoff flows pumped to the drainage canal on the northern boundary of the site. Only rain events significantly larger than the design event would contribute runoff to the existing drainage system downstream. The flow rate calculated for the pond with a 100-yr rain event is much lower than the pre-development runoff, even if that runoff were considered as an average over 24 hours. As a consequence, the net effect on drainage from the manufacturing facility site to the immediately adjacent properties would be a reduction in flow.

Linear features have been installed via underground trenching/boring to minimize impacts, and the land will be restored to previous conditions; therefore no lasting impacts to topography or drainage are anticipated. When completed, the intake pump station would occupy a small area (6,400 ft^2 or 0.15 acres) and be surrounded by security fencing which would allow flow across the site. Effects to topography and drainage due to construction of the substation would be minimal due to the small site area (approximately 1.3 acres elevated to the level of the adjacent road) and the use of security fencing, which would allow flow across the site. The existing drainage ditch to the south of the substation has been maintained so that storm water flow is not restricted.

3.4.3 No Action Alternative

Construction activities have been conducted that have resulted in changes to the site elevation and drainage at the manufacturing facility site, and no lasting impacts to topography or drainage have occurred or are anticipated from installation of linear features and construction of the intake pump

[8] Base Flood Elevation (BFE) is the computed elevation to which floodwater is anticipated to rise during the base flood. The base flood is the flood having a one percent chance of being equaled or exceeded in any given year. This is also referred to as the 100-year flood. BFEs are typically shown on Flood Insurance Rate Maps (FIRMs).

station and substation. Under the No Action Alternative, changes to topography and drainage would be the same as under the proposed action.

3.5 ECOLOGICAL RESOURCES

This section provides information regarding the existing environment and environmental effects on vegetation, threatened and endangered (T&E) species, wildlife habitat, and special designation areas located within or near the proposed project.

3.5.1 Vegetation

3.5.1.1 Existing Environment

As mentioned above, the majority of the proposed project area had minimal to no vegetation due to RRM reclamation efforts. Common canopy species observed in the non-reclaimed areas include hackberry (*Celtis laevigata*), pecan (*Carya illionoensis*), boxelder (*Acer negundo*), sweetgum (*Liquidambar styraciflua*), American beautyberry (*Callicarpa Americana*), and honeysuckle (*Lonicera* sp.). Other common species in and immediately adjacent to the Project Area include Johnsongrass (*Sorghum halepense*), goldenrod (*Solidago sp*.), ragweed (*Ambrosia sp*.), greenbriar (*Smilax* sp.), peppervine (*Ampelopsis* sp.), and poison ivy (*Toxicodendron radicans*). Common vegetation located within and adjacent to water features include black wouldow (*Salix nigra*), cottonwood (*Populus sp*.), cattails (*Typha sp*.), and baldcypress (*Taxodium distichum*) (Zephyr 2008b, 2008c, 2008d, 2008f, 2009c, 2009e, and 2009g).

3.5.1.2 Effects of Project

Due to the fact that the majority of the proposed project is located on reclaimed mine land with minimal vegetation, only minor impacts to vegetation and vegetation communities resulted from site preparation and construction activities already conducted. Construction of the water intake pump station and substation would have only minimal impacts to vegetation due to their small site areas. Impacts from construction of linear features were minor due to the temporary nature of the disturbance and restoration of the lands to previous conditions (Zephyr 2008c, 2008f, and 2009c). The majority of the impacted land has been returned to the pre-construction state and is available for regular activities (grazing, hay farming, etc.). Operational activities of the proposed project would have negligible, if any, adverse impacts on vegetation.

3.5.2 Wildlife Habitat and Threatened and Endangered Species

3.5.2.1 Existing Environment

The proposed project lies in the Upper West Gulf Coastal Plain ecoregion (Zephyr 2008b, 2008d, 2009e, and 2009g). Federally listed T&E species listed by the U.S. Fish and Wildlife Service (USFWS) as having the potential to occur in Red River Parish are the pallid sturgeon

(E) (*Scaphirhynchus albus)* and interior least tern (E) (*Sterna antillarum)*. A habitat survey of the proposed project area was completed to determine general wildlife habitat and if habitat likely to support the two Federally-listed T&E species for Red River Parish exists. The survey was completed by a qualified wildlife biologist. Data were collected to determine resident vegetation communities and assess the potential for occurrence of T&E species (Zephyr 2008b, 2008c, 2008d, 2008f, 2009c, 2009e, and 2009g). No habitat containing the characteristics of habitat utilized by either species was observed on or near the proposed project area, nor were any T&E species.

The majority of usable wildlife habitat observed included typical pasture, woodland, and riparian areas. Wildlife species observed during the assessment included the killdeer (*Charadrius vociferous*), great egret (*Casmerodius albus*), cattle egret (*Bubulcus ibis*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), little blue heron (*Egretta caerulea*), red-shouldered hawk (*Buteo lineatus*), Carolina chickadee (*Parus carolinensis*), northern mocking bird (*Mimus polyglottos*), red-wing blackbird (*Agelaius phoeniceus*), field sparrow (*Spizella pusilla*), eastern fox squirrel (*Sciurus niger*), eastern cottontail (*Sylvilagus floridanus*), and numerous turtle species. Although not observed during the habitat assessment, other bird, mammal, and reptile species common to the region would be expected to use the above-mentioned areas as habitat.

3.5.2.2 Effects of Project

Due to the fact that the majority of the proposed project area is reclaimed mine land containing minimal vegetation, only minimal impacts to wildlife habitat have resulted from construction activities already conducted, and only minimal impacts are anticipated from the facility's operation. Construction of the water intake pump station and substation would have only minimal impacts to wildlife habitat due to their small site areas. Impacts from construction of linear features were also minor due to the temporary nature of the disturbance and the restoration of the lands to previous conditions (Zephyr 2008c, 2008f, and 2009c). After construction of the linear features, the majority of the impacted land would be utilized for the same activities as prior to construction (grazing, hay farming, etc) with minimal disturbance to wildlife habitat.

Because of the lack of habitat in the area of the proposed project, no impacts to the interior least tern or the pallid sturgeon are anticipated as a result of the construction or operation of the project. USFWS concurred that the project is not likely to adversely affect T&E species of potential occurrence or critical habitat in Red River Parish (Appendix B).

3.5.3 Special Designation Areas

Special designation areas include wilderness areas, wild and scenic rivers, National Scenic Byways, Western Hemisphere Shorebird Reserves, etc. Internet searches and mapping software were used to determine if special designation areas exist in and around the proposed project (Delorme 2007). The remainder of this section discusses National and State Forests and Wildlife Areas/Refuges in the vicinity of the facility. There are no other special designated

areas, such as wild and scenic rivers, National Scenic Byways, or Western Hemisphere Shorebird Reserves.

3.5.3.1 Existing Environment

3.5.3.1.1 National Forests and National Wildlife Areas/Refuges

There are two National Forests located within roughly 55 km of the 60-acre facility site (see Figure 3-2). Various portions of the Kisatchie National Forest are located approximately 35-45 km east and southeast of the site. The Sabine National Forest is located approximately 55 km west and southwest of the site. The closest National Wildlife Refuge is the Caney Creek National Wildlife Refuge, located in Arkansas, approximately 270 km northwest of the site.

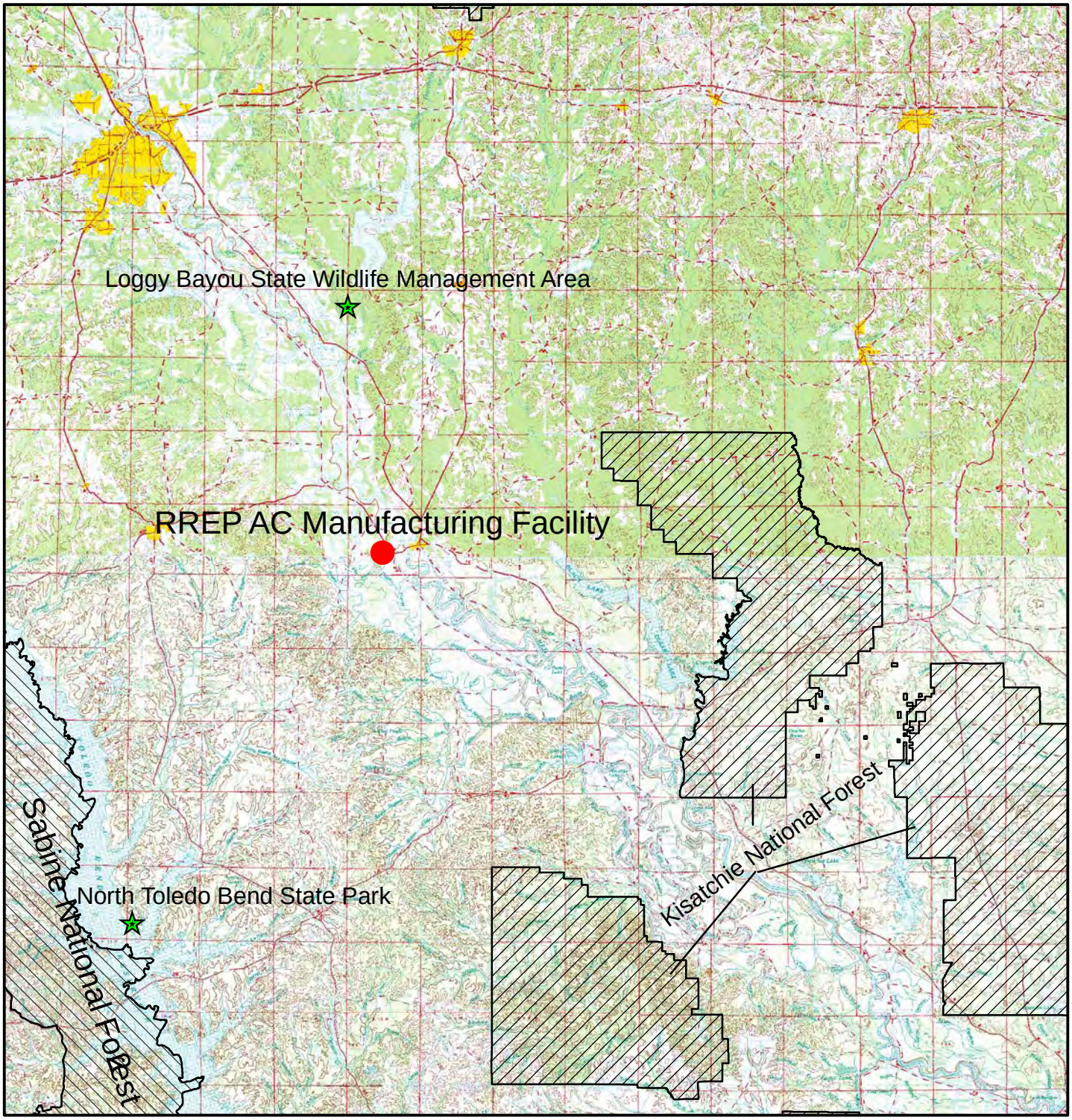


Figure 3-2
Special Designation Areas Map

N

Sources: Harmon USGS Quadrangle; 1996.

Armistead, Red River Parish, Louisiana

Date: 6 June 2009

0 5 10 20 Miles

0 5 10 20 30 40 Kilometers

3.5.3.1.2 State Forests and State Wildlife Management Areas

The Loggy Bayou State Wildlife Management Area is located approximately 25 km to the north of the site (see Figure 3-2). In addition, the North Toledo Bend State Park is located about 60 km southwest of the site. There is no direct connectivity from the entire area of the proposed project to any of the listed special designation areas.

3.5.3.2 Effects of Project

As part of the Federal and state air permitting process, analyses were conducted to evaluate the potential impacts on these areas from air pollutant emissions from the proposed project. The results of these analyses indicated compliance with secondary National Ambient Air Quality Standards (NAAQS) and no impacts to visibility in these areas (see Sections 3.7.2.2 and 3.7.2.3).

3.5.4 No Action Alternative

Construction activities have been conducted for the proposed project that have resulted in changes to the vegetation and wildlife habitat that would be the same under the No Action Alternative as for the proposed action. Under the No Action Alternative, there would be no additional impacts to ecological resources as a result of operation of the facility.

3.6 WATER RESOURCES

3.6.1 Floodplain Assessment

3.6.1.1 Existing Environment

The proposed project is within Zone A of the 100-year floodplain as determined by the Federal Emergency Management Agency (FEMA) in 1985, prior to mining activities (see Figure 3-3) (FEMA 1985). Zone A covers areas for which detailed hydraulic analyses have not been performed; therefore, no BFEs or flood depths are shown on the flood map.

As noted in Section 3.4, lignite mining required construction of a levee around a substantial area shown in Figure 3-1 including the site. The upper reaches of Pig Pen Bayou were diverted to the east around the levied area. The levee near the site is higher than the 100-yr flood elevation determined for the site as discussed below. While that levee exists and has modified existing site drainage, it is not a FEMA-certified structure and therefore does not affect the regulatory status of the FEMA defined floodplain in this area.

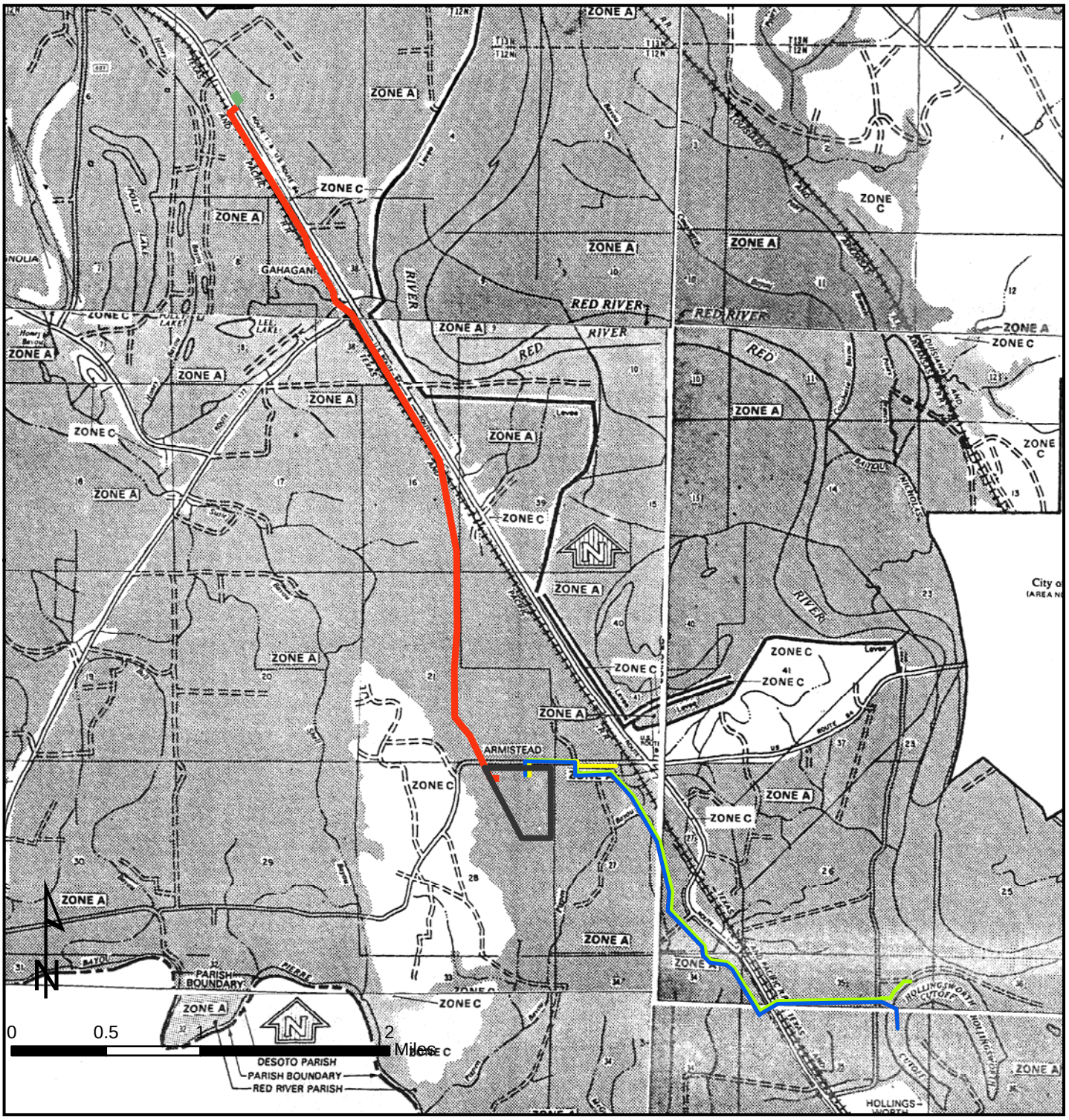


Figure 3-3
Project Site Floodplain Map

RREP Site Boundary

Proposed Substation Location

Proposed Electric Line ROW

Gas Line

Oxbow Intake

Outfall ROW

Sources: FIRM Map 220152 B, 1985.

Armistead, Red River Parish, Louisiana

Date: 26 August 2009

Before construction began, RREP contracted Owen & White, Inc. in Baton Rouge, Louisiana to compute and certify the BFE of the site. When the site grading plans were developed, RREP designed foundations 1 foot above the computed BFE, with the intent to grade the remainder of the site so as to manage storm water runoff appropriately.

3.6.1.2 Effects of Project

In compliance with Executive Order 11988, Floodplain Management and DOE's implementing regulations found at 10 CFR 1022, a notice of floodplain action was published in the Shreveport *Times* on September 21, 2009 and in the *Coushatta Citizen* on September 24, 2009, and a floodplain assessment was conducted for the proposed project and incorporated into this EA. A notice of availability of the floodplain statement of findings, when issued, will be announced in both newspapers.

Given the extensive reach of the 100-year floodplain in the Coushatta area, a feasible non-floodplain location was not found. Figure 3-4 shows the RREP site and the property (called the Oxbow 66 Site) that was considered as an alternative site for the project. Both the RREP site and the Oxbow 66 site, as well as a large majority of surrounding lands, are within Zone A (see Figure 3-3) (FEMA 1985). The Oxbow 66 site was not selected based on several key factors relevant to floodplain issues including: 1) the elevation of the property ranges from 117 to 130 ft msl, significantly lower than the RREP site and therefore requiring more fill within the floodplain to raise the elevation above the BFE; 2) the property is not protected from flooding by a levee; and 3) two drainage swales and an intermittent stream transect the property. The area shown in Zone C to the west of the site on Figure 3-4 includes the RRM offices and loadout facility, as well as a cemetery. The area is cut with active mining roads that are used to transport the coal within mine property. When RREP was looking for sites, no site in this area was available. See section 2.5 for a list of RREP's reasons for selecting its current site.

Owen & White, Inc. computed and certified the BFE of the property, and PBS&J conducted a quantitative assessment of floodplain effects associated with the manufacturing facility site. This assessment provides a description of the drainage within the existing levee and an analysis of possible effects on other properties if the levee were to fail or be removed. Appendix C contains that assessment and BFE report. The following text briefly summarizes the results.

After considering four separate flooding sources, Owen & White computed the BFE to be 132.6 feet above msl and recommended that foundation elevations be set at least 1 foot above the BFE (Owen & White, Inc. 2008). Subsequently, RREP established design criteria which specified that the bottom of all major equipment foundations and/or the top of foundations be a minimum of 1 foot above the computed BFE. The grading and foundation plans for the manufacturing facility site were prepared and have been implemented in accordance with this requirement. Existing uncontrolled fill present beneath the site was excavated and removed. Fill was brought into the manufacturing facility site and compacted to comply with the minimum design elevation, ensure soils were suitable to support foundations, and provide proper drainage patterns. A large storm water retention pond on the manufacturing facility site is designed to manage runoff.

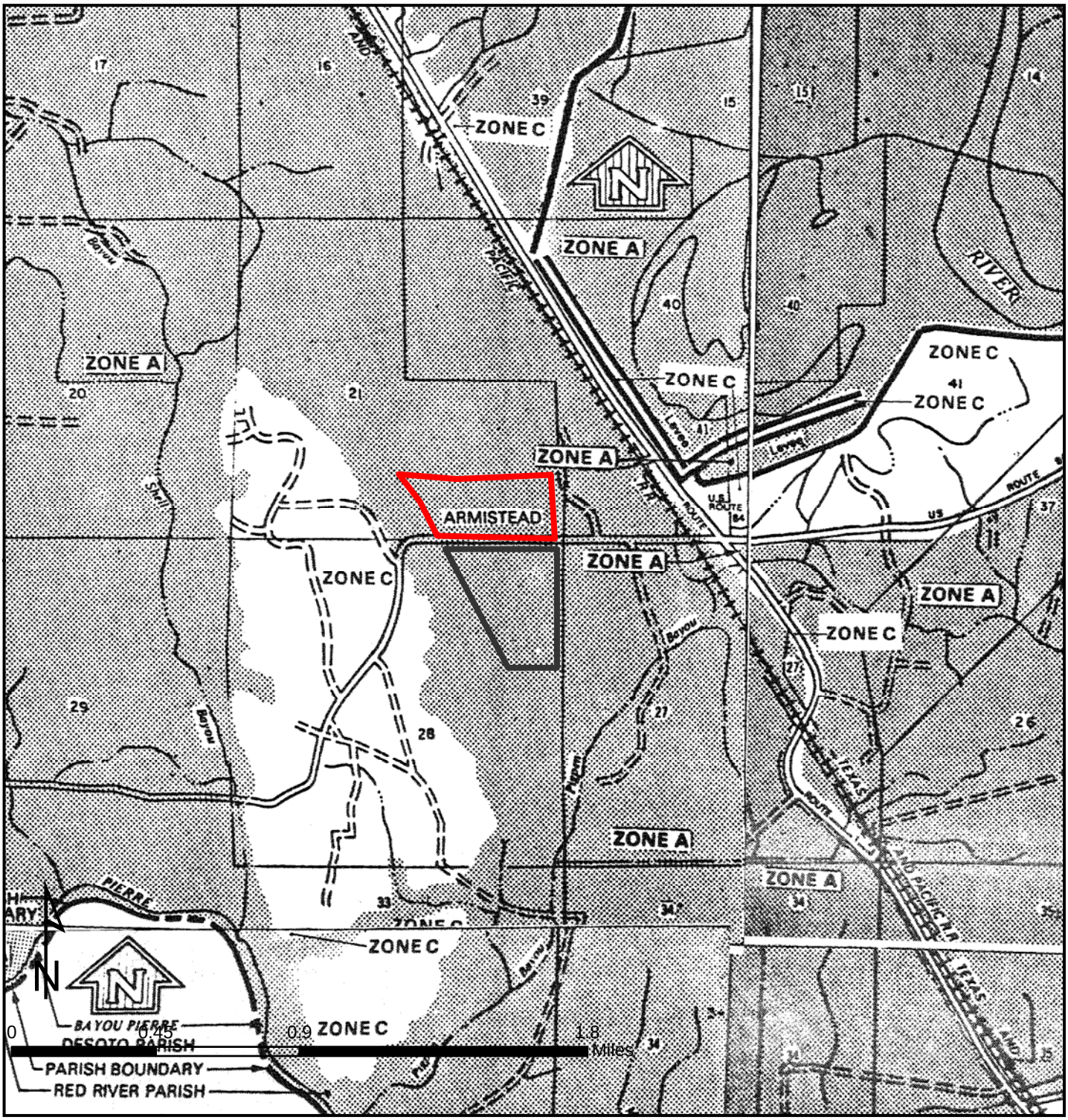


Figure 3-4
RREP and Alternative Site Floodplain Map

Sources: FIRM Map 220152 B, 1985.

Armistead, Red River Parish, Louisiana

Date: 27 August 2009

Alternative Site Considered

RREP Site Boundary

Analysis confirmed that a greater volume of soils were removed below the BFE during construction than were brought in as fill; resulting in no net filling within the existing floodplain below the BFE. Consequently, there has been no adverse effect on the floodplain's storage volume and subsequent flooding risk. A hydraulic analysis also confirmed that there would be no significant increase in flood elevations due to the placement of the fill for construction. Table 2 in Appendix C shows the estimated differences in water surface elevation pre- and post-project for a 100-year storm event. The water surface elevations at most of the locations within the site that were modeled decreased slightly post-project. There is a slight increase of 0.03 feet shown at the north or upstream end of the site. These analyses confirm that construction of the manufacturing facility did not significantly impact the flood elevations in the area and that there is no increased risk of flooding to the site or to adjacent properties as a result of the construction. Additionally, local officials responsible for the area's Flood Insurance Program have been consulted and determined that the project is consistent with the applicable requirements for building in the floodplain.

Flood protection measures that have been and are being implemented include the following:

- equipment and building foundations located a minimum of 1 ft above computed BFE;
- backfill compacted to a minimum of 95% maximum dry density;
- site sloped and paved areas installed to drain surface water away from buildings and equipment;
- underground storm water drain piping and catch basins installed to direct storm water to the retention pond;
- existing pond expanded to a significantly larger storm water retention pond;
- sanitary sewer system designed to prevent infiltration;
- culverts beneath access roads in drainage canal designed to ensure storm water flow is unrestricted;
- chemicals stored on site within secondary containment and on foundations above the BFE, managed in accordance with site Spill Prevention, Control and Countermeasures Plan (SPCC), where applicable; and
- chemical and fuel tanks installed with secondary containment and anchored to concrete.

Additionally, RREP would have the site surveyed and would apply to FEMA for a Letter of Map Revision based on fill (LOMR-F) to remove the elevated areas of the Property from Zone A designation. Red River Parish has already indicated approval and support of the currently accepted design plan. It is anticipated that most if not all of the property where manufacturing facility structures and equipment are located would be removed from the Zone A floodplain designation.

The topographic survey supporting the LOMR-F application is projected to be completed during March 2010, and submitted along with the LOMR-F application in April. FEMA indicates the review process is typically six to eight weeks between receipt of the application and issuance of a LOMR-F. Given this timeline, it is anticipated that the LOMR-F should be received in June or July of 2010.

Installation of linear features and ongoing construction of the water intake pump station have had minimal permanent effects on the floodplain. The control box for the intake structure on Hollingsworth Cutoff is being constructed on a crushed stone pad at an elevation of 135 feet above msl; however, the majority of the concrete structure would be underground. The intake pump station would occupy a small area (6,400 ft^2 or 0.15 acres) and be surrounded by security fencing which would allow flow across the site during flood events. Additionally, the pipeline from the intake structure on Hollingsworth Cutoff to the facility site has been installed via underground trenching/boring to minimize impacts. The discharge line and outfall on the Red River have been installed via underground trenching or laid upon the bottom of the Red River.

Effects to the floodplain due to construction of the substation and transmission line are anticipated to be minimal due to the small site area (approximately 1.3 acres elevated to the level of the adjacent road) and the use of security fencing, which would allow flow across the site during flood events. The existing drainage ditch to the south of the substation would be maintained so that flow is not restricted.

3.6.1.3 No Action Alternative

The base flood elevation was raised as part of the construction activities already conducted at the manufacturing facility site. The linear features are installed, and the water intake pump station and substation are currently under construction, with no impact to the floodplain anticipated. Under the No Action Alternative, changes to the floodplain would be the same as under the proposed action.
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3.6.2 Surface Waters and Wetlands

3.6.2.1 Existing Environment

A literature review, as well as an on-site field reconnaissance, was conducted of the proposed project area to characterize hydric features and determine the presence or absence of Section 10 and Section 404 jurisdictional “Waters of the U.S.” Specifically, the following background information was reviewed:

- USGS 1-meter Digital Orthophoto Quarter Quadrangle: Harmon (southeast) aerial photography (2004);
- USGS 7.5-minute Digital Raster Graphic: Harmon quadrangle (1998); and,
- Web-based soils survey information from the NRCS.

The background review indicated several water features existing within the proposed project area. A small portion of the Red River is located in the southeastern portion of the area at the water intake and outfall. The Hollingsworth Cutoff is an abandoned channel of the Red River. Pig Pen Bayou, which is a tributary of the larger Bayou Pierre, is located in the immediate vicinity of the manufacturing facility site. Maguire Branch is mapped in the southern portion of the proposed project area. Tributaries and associated wetlands of the above-mentioned named surface water features are also located within and in the immediate vicinity.

A drainage from north of Parish Road 604 flows through culverts under Parish Road 604 and then flows east through a designed drainage along the south side of Parish Road 604 until turning south just before the Union Pacific Railroad. This drainage feature is perennial/intermittent and represents the upper reaches of Pig Pen Bayou. This feature was previously re-routed as a part of RRM operations. Pig Pen Bayou is a relatively open stream corridor. It has a defined bed-and-bank condition with a distance between the ordinary high water marks (OHWM) on each side of the water feature of approximately 40 feet and is considered perennial/intermittent.[9] Maguire Branch, indicated on the USGS quadrangle map as being in the extreme southern portion of the proposed project area, has been impacted by RRM operation and no longer extends into the project area. Before construction, a small man-made sediment containment pond was present approximately 50 yards south of the manufacturing facility site.

3.6.2.2 Effects of Project

On-site waters/wetlands determinations and jurisdictional determination reviews were conducted to verify if current conditions were similar to those identified on aerial photographs and topographic maps and to assess USACE jurisdiction. The jurisdictional determination review confirmed that the impacted water features are under USACE jurisdiction (Zephyr 2008b, 2008d, 2009e, and 2009g). Therefore, construction activities required permit authorization from the U.S. Army Corps of Engineers (USACE) Vicksburg District. The proposed project, which includes the manufacturing facility, linear features, water intake pump station, and substation, has been authorized and permitted by the Vicksburg USACE District. Anticipated temporary and permanent impacts resulting from the project were evaluated and the project was authorized under Nationwide Permit (NWP) 39 (Appendix D).

RREP AC Manufacturing Facility Site:
The AC manufacturing facility site is relatively flat and drains into a storm water retention pond approximately 50 yards to the south. This larger pond replaced the small man-made sediment containment pond mentioned above. As necessary, storm water would be pumped from the pond into Pig Pen Bayou.

Intake and Outfall Water Lines, Intake Structure, Outfall, Gas Line:
Pig Pen Bayou was traversed once by the gas line and in three locations by the water line. The average depth of Pig Pen Bayou at the locations where it was crossed is 1 foot. The unnamed tributary traversed by the gas line joins Pig Pen Bayou immediately south of Parish Road 604 and west of the Union Pacific Railroad ROW. This feature exhibits a distance between OHWMs of approximately 15 feet, a depth of approximately 6 inches, and is dominated by vegetation identical to that described for Pig Pen Bayou. Hollingsworth Cutoff is an abandoned channel of the Red River and the site of the water intake structure for the manufacturing facility. The water intake pump station is currently under construction. The outfall is located inside the channel of the Red River. Impacts of the outfall are described in more detail in section 3.6.4.

[9] Ordinary High Water Mark: An elevation that marks the boundary of a lake, marsh, or streambed. It is the highest level at which the water has remained long enough to leave its mark on the landscape.

Electric Line and Substation:
All Waters of the U.S. within the electric line ROW that were spanned during construction were not permanently impacted. Features spanned include Honey Bayou, as well as two other wooded drainage features. All Waters of the U.S. within the project area are small enough in extent to allow for aerial spanning without the need for installation of poles in any feature. Installation of poles outside of the features in conjunction with aerial spanning avoided all permanent impacts to Waters of the U.S. within the electric line ROW.

Impacts to both Section 404 waters and Section 10 jurisdictional features of the Red River fall into both temporary and permanent categories and are included in the obtained permit authorization from the Vicksburg USACE District under NWP 39. The manufacturing facility siting and routing of the linear features was conducted to minimize permanent impacts to surface waters or Waters of the U.S.

Temporary impacts due to the project equal less than 0.22 acres of in channel waters of the US (in Pig Pen Bayou or its tributary) and Section 10 open water wetlands (in the Red River and Hollingsworth Cutoff). Impacts that occurred from trenching generally included temporary increases in turbidity in the water column and removal of wetland vegetation from the immediate work area. Efforts undertaken to minimize sedimentation from the impacted feature to adjacent features included silt fencing of the ROW and/or additional work space areas. Silt fences and/or berms across the ROW were installed when work was occurring in an area with a noticeable slope. Maintaining silt fences and berms in proper working order helps to significantly alleviate sedimentation. After completion of work, all impacted features were returned to pre-construction contours. Silt fencing will remain in place in some areas, such as stream crossings, to minimize erosion until vegetation returns.

Permanent impacts due to the project equal less than 0.32 acres of in channel waters of the US (in Pig Pen Bayou or its tributary) and Section 10 open water wetlands (in the Red River and Hollingsworth Cutoff) as well as very minimal impacts (less than 0.01 acres) to herbaceous fringe wetlands associated with Hollingsworth Cutoff. The majority of impacts occurred due to installation of access roadways across Pig Pen Bayou to the facility site from Parish Road 604. This resulted in temporary increases in turbidity in the water column and fill of the channel. Efforts undertaken to minimize impacts to Pig Pen Bayou included installing culverts within the access roadways to allow normal flow. Additionally, silt fencing was installed along either side of the ROW within Pig Pen Bayou to reduce downstream turbidity and alleviate sedimentation. After completion of work, all impacted features were returned to pre-construction contours. Silt fencing will remain in place in some areas to minimize erosion until vegetation returns.

As required by the Corps permit, when excavating in wetlands, topsoil (the top 18 inches) was segregated from other excavated material and replaced back on the surface when work was completed in addition to returning to preconstruction contours.

Figures 3-5a and 3-5b depict the locations of the water intake pump station, water discharge, gas line, and electric line ROWs, as well as the location of the manufacturing facility site and the substation, relative to the Section 404 waters and Section 10 jurisdictional features of the Red

River. Tables 3.1 and 3.2 summarize permanent and temporary impacts to Waters of the U.S. for the entire project, respectively (Zephyr 2009c).

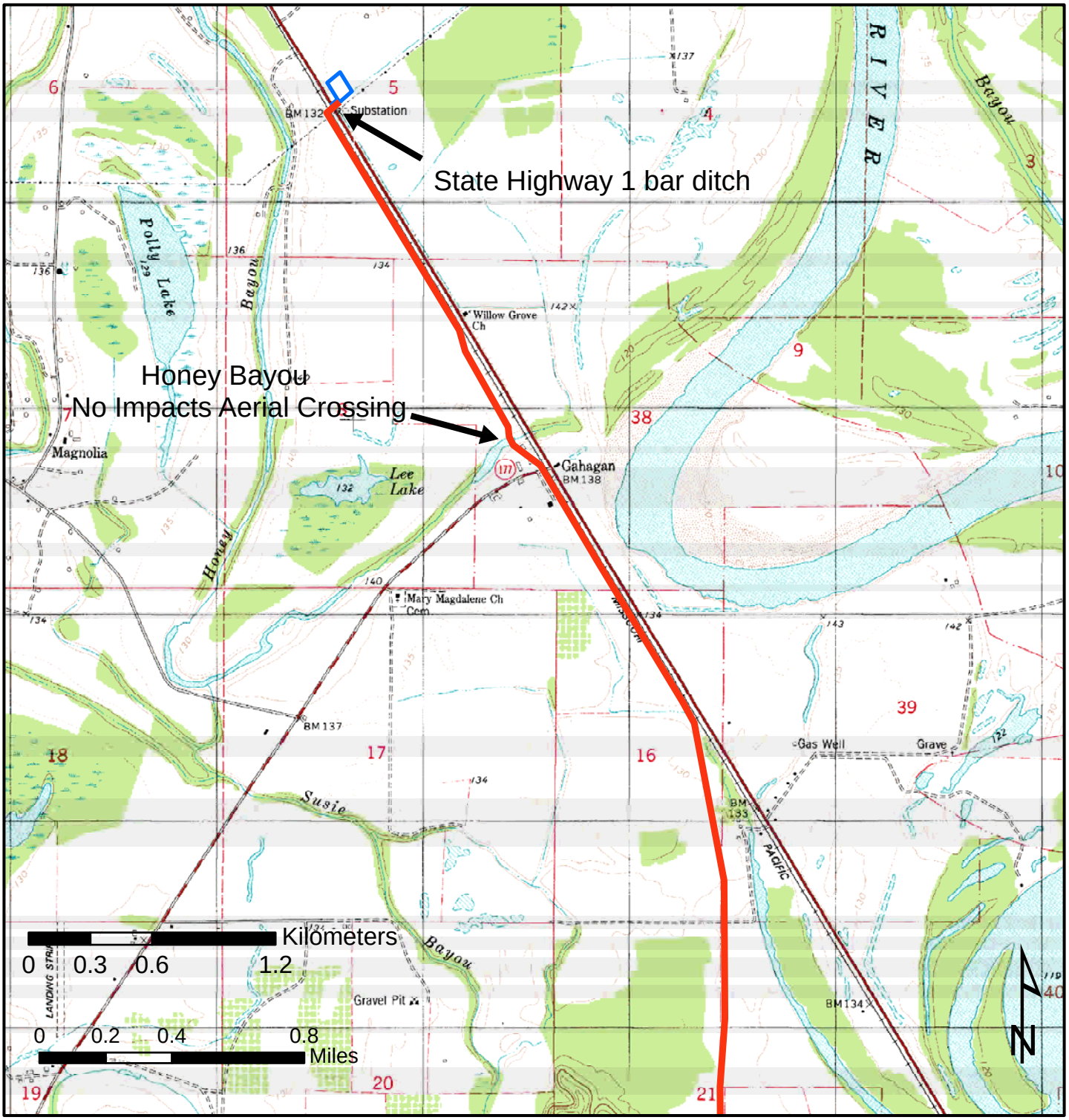
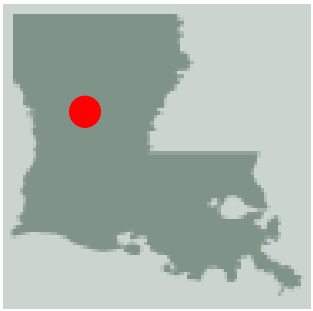


Figure 3-5a
Impacts to Waters of the US



Sources: Harmon USGS Quadrangle; 1996.
Armistead, Red River Parish, Louisiana
Date: 18 December 2009

Electric Line ROW

Substation

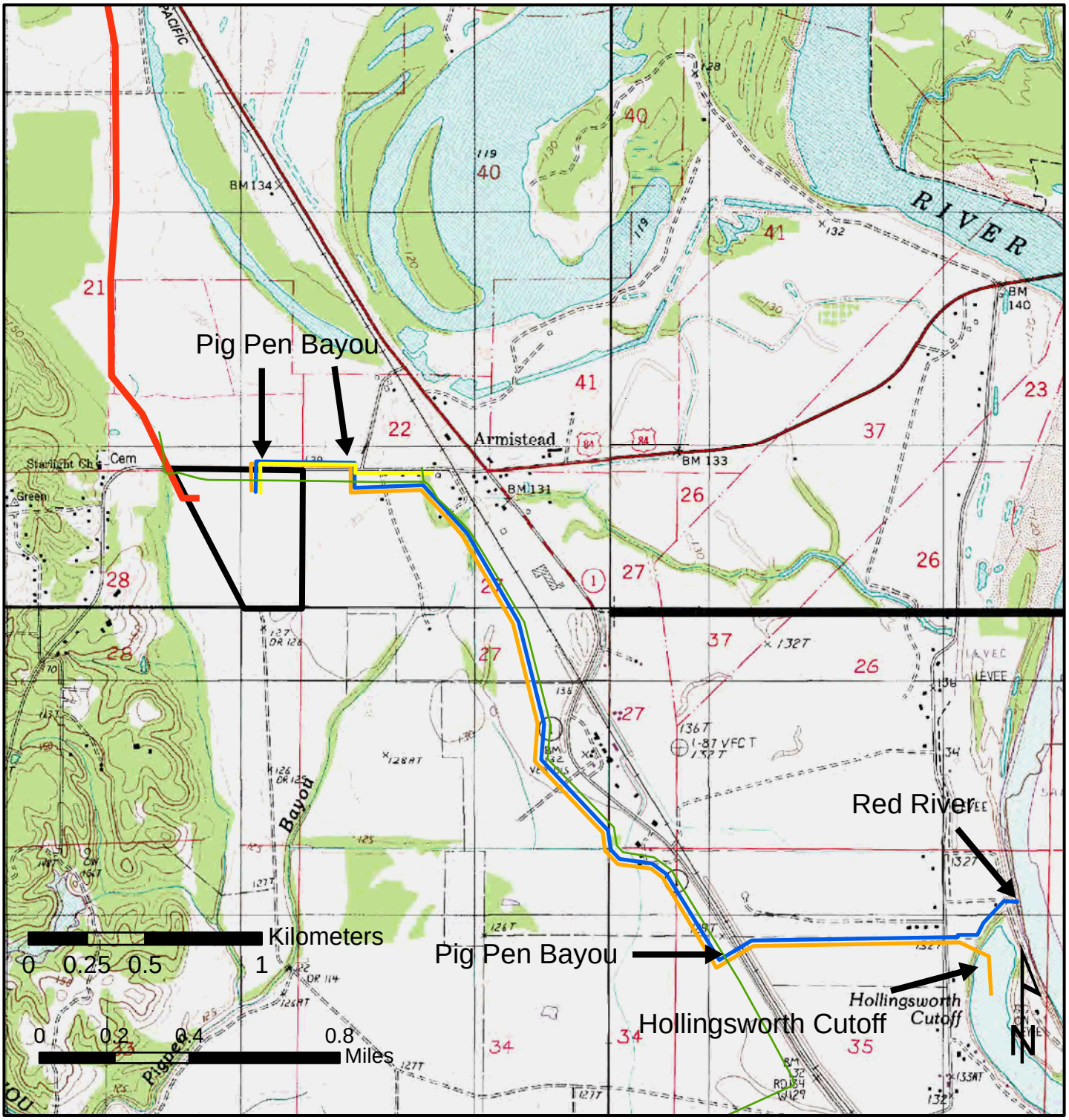


Figure 3-5b
Impacts to Waters of the US

Sources: Harmon USGS Quadrangle; 1996.

Armistead, Red River Parish, Louisiana

Date: 18 December 2009

- Pig Pen
- Gas Line
- Outfall Water ROW
- Electric Line ROW
- Intake Water ROW
- Property Boundary

Table 3.1 Summary of Permanent Impacts to Waters of the U.S.

"Waters of the U.S."	Type	Activity	Length (linear feet) of Stream Impact	Jurisdictional Area (feet^2)	Jurisdictional Area Impacted (Acres)	Fill (Cubic Yards)
Pig Pen Bayou (PPB1)	Section 404 Perennial/Intermittent stream	road crossing	105	105 x 40 = 4,200	0.10	----------
Pig Pen Bayou (PPB2)	Section 404 Perennial/Intermittent stream	road crossing	105	105 x 40 = 4,200	0.10	----------
Hollingsworth Cutoff	Section 10 Open water	Intake structure and piping	----------	650 x 1.67 = 10,855	0.02	----------
Hollingsworth Cutoff	Section 10 Open water	concrete ballasts and gravel pads	----------	650 x 25 = 1,625 (45.14 yds^3)	0.04	----------
U.S. Highway 1 bar ditch	Section 404 Perennial/Intermittent stream	Substation access roadway	20	3	<0.01	----------
Hollingsworth Cutoff	Section 10 Herbaceous wetland fringe	Intake structure bank rip rap	50 (non-stream)	50 x 3 = 150	<0.01	4.17
Hollingsworth Cutoff	Section 10 open water	Channel bottom rip rap	----------	50 x 6 = 300	<0.01	8.33
Red River	Section 10 Open water	Discharge	1	116 x 1 = 116	<0.01	----------
Red River	Section 10 Open water	Concrete ballasts and gravel pads	----------	(3 x 3 x .75 x 8) + (1 x 4.75 x 42) = 138	<0.01	7.39
Red River	Section 10 Open water	Restore revetment	8	8 x 45 = 360	<0.01	26.66
Totals	----------	----------	293	----------	0.32	46.55

Table 3.2 Summary of Temporary Impacts to Waters of the U.S.

"Waters of the U.S."	Feature	Purpose of Impact	Length (linear feet) of Stream Impact	Jurisdictional Width (feet)	Jurisdictional Area Impacted (Acres)
Pig Pen Bayou	Section 404 Perennial/Intermittent stream	water line and outfall line	4.5	40	<0.01
Pig Pen Bayou	Section 404 Perennial/Intermittent stream	water line and outfall line	4.5	40	<0.01
Pig Pen Bayou	Section 404 Perennial/Intermittent stream	water line and outfall line	4.5	40	<0.01
Pig Pen Bayou	Section 404 Perennial/Intermittent stream	gas utility crossing	3	40	<0.01
Unnamed Tributary of Pig Pen Bayou	Section 404 Intermittent/Ephemeral stream	gas utility crossing	3	15	<0.01
Hollingsworth Cutoff	Section 10 Open water	Intake structure	4	90 (non-stream)	<0.01
Red River	Section 10 Open water	Discharge	4	116 (non stream)	0.01
Red River	Section 10 Open water	Discharge (temporary workspace)	80	100 (non stream)	0.18
Totals	----------	----------	107.5	481	0.22

Pre-construction notification was submitted to the USACE Vicksburg District and permit authorization for NWP 39 was granted for the project (Zephyr 2008c, 2008f, and 2009c).

3.6.2.3 No Action Alternative

Construction activities, including the installation of linear features, substation, and water intake pump station have already occurred; therefore, under the No Action Alternative, impacts to surface waters and wetlands would be the same as under the proposed action.

3.6.3 Groundwater

3.6.3.1 Existing Environment

The Red River Alluvial aquifer is the shallowest aquifer that underlies the proposed project area and is restricted to the Red River Valley. This aquifer consists of fining upward sequences of Holocene-age and Pleistocene-age gravels, sands, silts, and clays. The Red River Alluvial aquifer is in direct hydraulic communication with the Red River and major streams within the Red River Valley. Recharge is by direct infiltration of rainfall in the river valley and the movement of water from adjacent and underlying aquifers and streams.

A search of the Louisiana Department of Transportation and Development (DOTD) Registered Water Well database was conducted. Water wells are located on and immediately adjacent to the 60-acre facility site. Well depths range from 42 feet to 63 feet. Most of these water wells extracted water from the Red River aquifer to de-water the site while RRM was mining lignite. One of these water wells is an observation well for USGS. The reported water level in these wells range from 6.7 feet to 22.2 feet (Zephyr 2008a, 2009a).

3.6.3.2 Effects of Project

During construction of the manufacturing facility, a well was drilled on the 60-acre facility site for the purpose of providing water to conduct hydrostatic testing. The Louisiana Department of Natural Resources Office of Conservation approved the well and determined that the proposed water withdrawal should not adversely affect water withdrawal from other registered water wells in the area. A maximum of two million gallons of water is expected to be withdrawn from this well. The well would be left in place during operation of the facility, but there are no plans to routinely use it once process water is available from the Red River.

Effects from the construction of the linear features was largely surficial, with no impacts to groundwater from installation of utility tower bases and none anticipated from the water intake pump station. The utility tower bases were constructed of solid material and the water intake pump station would be housed in the manufacturer's casing to avoid potential effects to groundwater.

3.6.3.3 No Action Alternative

A well was installed as part of the construction activities already conducted at the manufacturing facility site and no impacts occurred or are anticipated from construction of the linear features and water intake pump station. Under the No Action Alternative there would be no additional impacts to groundwater or changes to the existing conditions.

3.6.4 Water Quality

3.6.4.1 Existing Environment

The Hollingsworth Cutoff is currently a stagnated water body that is connected to the Red River. The oxbow receives limited storm water runoff from the surrounding drainage area. Water from the Red River flows into, or out of, the oxbow as the water level of the Red River rises and falls. Accordingly, the water quality of the Hollingsworth Cutoff is variable, but is expected to be similar to that of the Red River.

The receiving water body for the wastewater discharge is the Red River within Water Quality Sub-segment Number 100101 of the Red River Basin. The estimated average flow of the Red River is 28,500 cubic feet per second (cfs) based on historical information from the USGS - Coushatta Monitoring Station.

Water bodies in Louisiana are assessed every even numbered year as required by Section 305(b) of the Clean Water Act (CWA). These assessments are performed in accordance with requirements of Section 303(d) of the CWA, which requires all states to develop a list of their impaired water bodies. The 303(d) list of impaired water bodies consists of those that do not meet state water quality standards. The CWA also requires all states to establish priority rankings for waters on the 303(d) list and develop Total Maximum Daily Loads (TMDLs) for these waters based on their individual priority ranking. A TMDL is a pollution budget for a specific water body (e.g., river, lake, or stream). It is the maximum amount of a pollutant that can be released into a water body without causing it to become impaired and/or violate state water quality standards. Currently, there are no TMDLs for this sub-segment of the Red River; however, the EPA has proposed adding a TMDL for sulfates.

In and around the Hollingsworth Cutoff and Red River, the Red River Waterway District (acting through the Red River Waterway Commission) owns the land up to the 123 foot contour elevation line, and a lease is required to access the water through their property. The RRWC does not have regulatory control, rather ownership, thus a lease is required not a permit. The RRWC has the right to enter into such a lease after a public hearing, held after not less than thirty days notice printed in the RRWC's official journal.

3.6.4.2 Effects of Project

The Hollingsworth Cutoff is an oxbow created by the meandering of the Red River. The oxbow is interconnected to the Red River at its southern end. The raw water supply serving the RREP facility would be pumped from the north end of the Hollingsworth Cutoff. The water would be piped to the RREP facility by means of an underground pipeline as depicted on Figure 3-5b. Industrial and sanitary wastewater generated by the RREP facility would be discharged by means of a separate underground pipeline that follows the same path as the water intake, except that it continues past Hollingsworth Cutoff to the Red River.

3.6.4.2.1 Surface Water Withdrawal

RREP obtained leases with the Red River Waterway Commission for the intake and outfall, including the required public notice. As discussed in Section 3.6.2, impacts to wetlands are minimized and permitted under NWP 39 by the USACE. The intake pumping station would be located above the 123 foot contour and the OHWM.

During operations, water would continually be withdrawn from the Hollingsworth Cutoff, which would be replenished by the movement of water from the Red River at the rate of withdrawal (approximately 600 gpm or 1.3 cfs). The average flow of the Red River is 28,500 cfs; therefore, the withdrawal would be a very small percentage of the overall flow. As a result of the RREP Facility operations, the Hollingsworth Cutoff would cease to be a stagnant body of water and the water quality within Hollingsworth Cutoff would more closely match that of the Red River. This is expected to result in a net positive change in the water quality characteristics of Hollingsworth Cutoff, i.e., the continuous flow of fresh water from the Red River into Hollingsworth Cutoff should prevent the occurrence of eutrophic conditions that are typically associated with stagnant water bodies. Numerous studies have addressed issues associated with the water quality in oxbow lakes and their restoration. Although studies have not been performed on the Hollingsworth Cutoff, it is intuitive that restoration of net positive hydrologic flow into the oxbow would be helpful rather than harmful relative to pre-cutoff conditions.

3.6.4.2.2 Storm Water Discharge

The LDEQ has established the LPDES permit program, which administers National Pollutant Discharge Elimination System (NPDES) permits to construction sites larger than one acre. Storm water runoff is being managed during construction in accordance with the terms and conditions of the Storm Water General Permit for Construction Activities of five acres or more, including a Storm Water Pollution Prevention Plan (SWPPP). Under the SWPPP, BMPs have been employed to ensure that undisturbed areas of the site are protected and disturbed portions are stabilized. During construction, BMPs include the use of silt fences to prevent sediment from entering water features. As construction activities have progressed, temporary check dams have been installed in existing or construction related channels/drainages to limit the amount of sediment that travels from the site.

Following the completion of construction activities, RREP would apply for coverage under the Multi-sector General Permit for Storm Water Discharges Associated with Industrial Activities. A SWPPP would be in place for manufacturing facility operations. Storm water would be routed to on-site ditches and culverts and directed to an on-site storm water retention pond. This retention pond would detain storm flows, after which the water would be pumped to the drainage canal on the northern boundary of the facility site. The use of this pond would reduce peak storm water runoff and reduce the flow to a quantity no greater than the pre-development condition.

3.6.4.2.3 Wastewater Discharge

The information and impacts reported below for wastewater discharge pertain to two AC production lines because it was prudent for RREP to compile and file with the state just one LPDES permit application rather than repeat the same effort for a possible second production line.

The volume of treated wastewater that would be discharged to the Red River is equivalent to approximately 0.5 cfs (approximately 326,000 gallons per day, including sanitary wastewater). The industrial wastewater discharge would not contain hazardous or toxic constituents or organic materials that would deplete oxygen in the receiving stream. The discharge would be generated by the following processes:

- 1st pass Reverse Osmosis (RO) reject;
- cooling tower blowdown; and
- reject from Ultra Filtration (UF) treatment unit (generally not discharged, as it is reused in the process).

The cooling tower blowdown may contain trace amounts of chemicals typically associated with the operation and maintenance of the cooling towers, including biocides, corrosion inhibitors, and descalents. These chemicals would be used in accordance with the manufacturer's recommendations.

The design for the water treatment system maximizes the reuse of wastewater within the process (e.g., water from the ultra filtration unit is used in the spray dryer absorber). The primary sources of the remaining wastewater would consist of concentrate from the 1st pass RO unit and blowdown from the cooling tower. The primary mineral content of this wastewater would consist of naturally occurring minerals contained in the raw water supply that are concentrated by the processes of filtration (RO reject) and evaporation (cooling tower blowdown), such as calcium, magnesium, chloride, sodium, sulfate, silica, and iron.

Process wastewater containing trace oils would be segregated from other wastewater and treated in an oily wastewater treatment system located on site. Oil-contaminated wastewater would be collected in an oily wastewater sump and then pumped to an oil/water separator to remove the oil. The remaining treated effluent would be mixed with the intake (raw) water going to the manufacturing facility.

RREP would meet all regulatory requirements for wastewater discharges in its LPDES permit number LA0124567, which was issued on August 11, 2009 (Louisiana Department of Environmental Quality (LDEQ) 2009b; Appendix E). Like the air permit application, the data submitted in the LPDES application are for two production lines. The Statement of Basis issued with the draft LPDES permit states, "It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent guidelines established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat" (LDEQ 2009a).

Sanitary wastewater would be separate from the industrial wastewater discharge prior to entering a shared discharge pipeline to the Red River. The sanitary wastewater would be treated by means of an on-site extended aeration package plant designed to attain the secondary treatment standards required by the LDEQ. The volume of sanitary wastewater discharged is anticipated to be less than 3,000 gallons per day. The LDEQ considers a discharge of 3,000 gallons per day of secondarily treated sanitary wastewater to be a de minimis impact to the receiving stream (in this case the Red River) that is capable of being permitted by means of Sanitary Discharge General Permit LAG530000. RREP would apply for coverage under the general permit for this discharge.

3.6.4.3 No Action Alternative

Under the No Action Alternative, there would be no change to existing conditions and restoration of net positive hydrologic flow into Hollingsworth Cutoff, which is expected to result in a positive change in the water quality characteristics, would not occur.

3.7 AIR QUALITY

3.7.1 Existing Environment

Under the Clean Air Act (CAA) of 1970, as amended (42 U. S. Code 7401 et seq.), National Ambient Air Quality Standards (NAAQS) have been adopted for six criteria pollutants – ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$) and lead (Pb). The NAAQS are summarized in Table 3.3. Note that, except for the recently-promulgated rolling 3-month average Pb standard and the 2008 ozone standard, the LDEQ Ambient Air Quality Standards are equivalent to the NAAQS.

Table 3.3 National Ambient Air Quality Standards

	Primary Standards		Secondary Standards	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
CO	10,000 µg/m^3	8-hr	None	
	40,000 µg/m^3	1-hr		
NO_2[a]	100 µg/m^3	Annual	Same as Primary Standard	
PM_{10}	150 µg/m^3	24-hr	Same as Primary Standard	
$PM_{2.5}$	15.0 µg/m^3	Annual	Same as Primary Standard	
	35 µg/m^3	24-hr	Same as Primary Standard	
SO_2[b]	80 µg/m^3	Annual	1,300 µg/m^3	3-hr
	365 µg/m^3	24-hr		
Ozone	0.075 ppm[c] (2008 Standard)	8-hr	Same as Primary Standard	
	0.08 ppm[d] (1997 Standard)	8-hr	Same as Primary Standard	
Pb	0.15 µg/m^3	Rolling 3-month	Same as Primary Standard	
	1.5 µg/m^3	Quarterly	Same as Primary Standard	

[a] EPA published a final rule on February 9, 2010 that established a new 1-hour NO_2 standard at a level of 100 ppb, based on the 3-year average of the 98th percentile of the yearly distribution of 1-hour daily maximum concentrations. This final rule is effective on April 12, 2010.

[b] EPA is proposing to revise the primary standard for sulfur dioxide and establish a new 1-hour sulfur dioxide standard within the range of 50 to 100 parts per billion, based on the 3-year average of the annual 99th percentile (or fourth highest) of 1-hour daily maximum concentrations. EPA proposes to issue a final rule by June 2, 2010, and proposes to revoke both the existing 24-hour and annual primary sulfur dioxide standards.

[c] EPA has proposed to strengthen the 8-hour primary ozone standard to a level within the range of 0.060 to 0.070 ppm, and to issue final standards by August 31, 2010.

[d] The 1997 standard and the implementation rules for that standard remains in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

EPA evaluates whether the criteria air pollutant levels within an area meet the NAAQS. Areas that have air quality levels that exceed the NAAQS (i.e., the NAAQS are not attained in these areas) are designated as nonattainment areas for the relevant pollutants. Areas that have air quality levels complying with the NAAQS are designated as attainment areas for the relevant pollutants. Areas that cannot be classified on the basis of available information as meeting or not meeting the primary or secondary NAAQS for a pollutant are designated unclassifiable for that pollutant.

The area surrounding the proposed project is in attainment for all criteria pollutants (40 CFR 81.319). Ambient monitoring in the vicinity demonstrates that existing air quality levels are well below the NAAQS. Tables 3.4, 3.5, 3.6, and 3.7 summarize recent ambient monitoring data for SO_2, PM_{10}, $PM_{2.5}$, and NO_2 respectively, which is representative for the proposed project area. (There are no ambient monitors for NO_2 in the Shreveport area. However, the State of Texas

operates an ambient NO_2 monitor in Harrison County, approximately 30 mi west-northwest of Shreveport.)

Table 3.4 Ambient SO_2 Monitoring Data for the Shreveport, LA Area

Station Location	Year	Concentration (ppm)		
		3-hr[a,b]	24-hr[a,b]	Annual[a]
Shreveport Municipal Airport[c]	2004	0.023	0.006	0.003
	2005	0.035	0.010	0.002
	2006	0.024	0.007	0.003
	Average:	***0.027***	***0.008***	***0.003***

[a] NAAQS for SO_2: 0.5 ppm (3-hr avg.); 0.14 ppm (24-hr avg.); 0.030 ppm (annual avg.)
[b] The 3-hr and 24-hr measurements are the maximum values for the year
[c] This monitor is part of the State and Local Air Monitoring Stations network

Table 3.5 Ambient PM_{10} Monitoring Data for the Shreveport, LA Area

Station Location	Year	Concentration (µg/m^3)	
		24-hr[a,b]	Annual[a]
Shreveport-Claiborne Street[c]	2004	57	20
	2005	45	23
Shreveport-Fulton Street	2006	75	24
	Average:	***59***	***22***

[a] NAAQS for PM_{10}: 150 µg/m^3 (24-hr avg.); 50 µg/m^3 (State AAQS annual avg.)
[b] The 24-hr measurement is the maximum value for the year
[c] This monitor is part of the National Air Monitoring Stations network

Table 3.6 Ambient $PM_{2.5}$ Monitoring Data for the Shreveport, LA Area

Station Location	Year	Concentration (µg/m^3)	
		24-hr[a,b]	Annual[a]
Shreveport-Claiborne Street[c]	2004	26.6	11.9
	2005	31.4	14.0
Shreveport-Fulton Street	2006	38.2[d]	14.4
	Average:	***32.1***	***13.4***

[a] NAAQS for $PM_{2.5}$: 35 µg/m^3 (24-hr avg.); 15 µg/m^3 (annual avg.)
[b] The 24-hr measurement is the maximum (98th percentile) value for the year
[c] This monitor is part of the National Air Monitoring Stations network
[d] A second, co-located monitor at the Fulton Street station measured 30.3 µg/m^3

Table 3.7 Ambient NO_2 Monitoring Data for Harrison County, TX

Station Location	Year	Annual concentration (ppm)[a]
Hwy 134 and Spur 449 Harrison County, TX[b]	2004	0.004
	2005	0.005
	2006	0.005
	Average:	***0.005***

[a] NAAQS for NO_2: 0.053 ppm
[b] This monitor is part of the TCEQ Continuous Air Monitoring Station network

Greenhouse gases are gases in the Earth's atmosphere that are opaque to short-wave incoming solar radiation, but absorb long wave infrared radiation re-emitted from the Earth's

surface, or in simple terms they “trap heat.” Gases exhibiting greenhouse properties come from both natural and human sources. Water vapor, carbon dioxide (CO_2), methane, and nitrous oxide are examples of greenhouse gases that have both natural and manmade sources, while other greenhouse gases such as chlorofluorocarbons are exclusively manmade. In the United States, greenhouse gas emissions come mostly from energy use. Ever increasing emissions are driven largely by the demands of economic growth as a primary result of the combustion of fossil fuel for electricity generation, transport, and other needs. Energy-related CO_2 emissions resulting from petroleum, coal, and natural gas represent 82 percent of total U.S. manmade greenhouse gas emissions (NEIC 2008).

3.7.2 Effects of Project

The information and impacts reported below pertain to one AC production line for construction and two AC production lines for operation because it was prudent for RREP to compile and file with the state just one air quality permit application rather than repeat the same effort for a possible second production line.

3.7.2.1 Emissions – Construction and Normal Operation

3.7.2.1.1 Construction Emissions

There is a tremendous variety of engines and equipment types that constitute non-road mobile sources. Construction emissions are generated by sources of this type, and generate temporary emissions that result in generally localized impacts on air quality.

EPA has developed a model for estimating emissions and/or emission factors from non-road equipment; NONROAD2008 is the latest version of this model. The model estimates exhaust and evaporative hydrocarbons (HC), volatile organic compounds (VOC), carbon monoxide (CO), oxides of nitrogen (NO_x), PM (including PM_{10} and $PM_{2.5}$), SO_2, and carbon dioxide (CO_2). The emission factors used in these construction calculations are taken from a file provided by EPA containing NONROAD2008 estimates for the 2009 calendar year.

The construction period for the proposed project began in September of 2008 and would continue until approximately July of 2010. A variety of non-road construction equipment are being used at various points of the construction, including air compressors, dozers, cranes, trucks, forklifts, pumps, and packers. A complete listing of the types of equipment and their associated emission factors, hours of operation, and annual emissions can be found in Appendix F to this document. Emission factors are assigned based on Source Classification Code (SCC) number and horsepower of the equipment.

Hours of operation were provided by plant construction personnel on a monthly basis for the period of September 2008 through June 2009 for the majority of the equipment. Starting in July 2009 and ending in July 2010, the hours of operation were estimated from the beginning and ending equipment rental dates. It was assumed that for the rental period (delineated in weeks per month), the equipment ran 40 hours per week per unit, the only exceptions being the light

plant, which was estimated to run 5 hours/day for 6 days a week, and the scissor lift, which runs only 40 hours/month.

Table 3.8 summarizes the estimated tons of non-road emissions for each year of construction.

Table 3.8 Summary of Construction Equipment Annual Emissions (tons)[a]

Year	HC	VOC	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO_2
2008	0.54	0.57	2.71	4.64	0.42	0.40	0.10	458.8
2009	5.15	5.04	96.45	18.15	1.56	1.51	0.44	2034.55
2010	2.09	2.01	44.87	5.25	0.39	0.38	0.12	581.39
TOTAL	*7.78*	*7.63*	*144.03*	*28.04*	*2.37*	*2.30*	*0.66*	*3074.75*
[a] Excluding construction-related dusts								

Note that fugitive dust emissions have and would be generated during the construction period by moving construction vehicles and earth-moving activities. These emissions are short term, intermittent emissions that result in generally localized impacts to air quality. RREP is employing the following best management practices to minimize fugitive dust generation during construction:

- water spraying is conducted during excavations and earthwork loading operations;
- material piles are water sprayed;
- haul roads are covered with gravel/stone and watered;
- water trucks are maintained on site during excavation activities;
- trucks transporting excavated material are covered;
- job site vehicle speeds are limited to 5 mph or less; and
- excavated materials are maintained away from active traffic lanes.

3.7.2.1.2 Normal Operation Emissions

A new source is a major source if it has the potential to emit any pollutant regulated under the Clean Air Act in amounts equal to or greater than a major source threshold of either 100 tpy or 250 tpy, predicated on the source's industrial category. Air emission related to operation of the proposed project would come from the manufacturing facility; there would not be air emissions related to operation of the substation. The applicable threshold level for the AC manufacturing facility is 100 tpy. As shown in Table 3.9, emission levels for several pollutants exceed the 100 tpy threshold; therefore the manufacturing facility is a major source. Because the manufacturing facility is in an attainment area, it is subject to the Prevention of Significant Deterioration (PSD) requirements under LDEQ's (EPA-approved) New Source Review (NSR) program. After a series of pre-application meetings with the LDEQ, RREP filed the required air quality permit applications for the RREP AC manufacturing facility with the LDEQ in July 2007 (Zephyr 2007); air quality permits to construct and operate were issued by the LDEQ for the facility in May 2008 (LDEQ 2008).

Air pollutant emissions would be generated from the operation of the RREP AC manufacturing facility production lines and from miscellaneous support activities. This includes emissions from the MHFs, material handling systems, cooling towers, on-site haul roads, and a fire water pump engine. Under normal operation, as well as startup/shutdown and upset conditions, these systems result in low emission rates. As part of the permitting process, potential and real adverse environmental impacts of pollutant emissions from the proposed new permitted sources were assessed by the LDEQ prior to construction to ensure that they were minimized. Permitting requires that all emission sources be controlled through technology to meet, or exceed, the requirements of applicable state and federal emissions regulations by utilizing information obtained through air quality analyses, additional impact analyses, and public involvement. Even though the applicable requirements do not prevent sources from releasing emissions, they do function to protect public health and welfare, protect areas of historic value, and ensure economic growth consistent with the preservation of existing clean air resources. A summary of the LDEQ permitted criteria pollutant emissions (tpy) per production line are presented in Table 3.9 (LDEQ 2008).

Table 3.9 Permitted Annual Emissions per Production Line

Emission Source	Emission Rate (tpy)					
	SO_2	NO_x	VOC	CO	PM_{10}	H_2SO_4
MHF Production Line	319.1	338.4	157.3	164.8	209.7	4.89
Material Handling Operations	-	-	-	-	0.31	-
On-site Haul Roads	-	-	-	-	1.24	-
Cooling Tower	-	-	-	-	1.48	-
Fire Water Pump[a]	0.03	0.47	0.04	0.10	0.03	-
[a] Would operate a maximum of 100 hours per year.						

BACT is required for major sources in attainment areas. Thus, air pollutant emissions associated with the AC manufacturing facility would be minimized with the maximum degree of emission reductions achievable through application of available methods, systems, and techniques that include advanced emissions control systems. The facility is required to apply BACT for the specific pollutants subject to PSD review. Based on the potential maximum emission levels for the facility, PM/PM_{10}, NO_x, SO_2, CO, VOC, and sulfuric acid (H_2SO_4) emissions were subject to PSD review.[10]

A carefully operated afterburner would control VOC and CO emissions. Selective non-catalytic reduction (SNCR), as well as low-NO_x burners, would be installed to reduce NO_x emissions. AC (produced on-site) would be injected into the exhaust stream downstream of the waste heat recovery boiler for mercury removal. A SDA, also referred to as a "dry" scrubber, would be

[10] Once a source is considered "major" under PSD, other pollutants are subject to pollutant-specific significance thresholds; therefore, the PSD significance level of 7 tpy applies to sulfuric acid. The total amount of sulfuric acid emitted for two production lines would be 9.8 tons/year, making it subject to PSD review.

installed to control SO_2 and H_2SO_4 emissions. Finally, a baghouse would be used for PM emissions control. The BACT controls that would be applied to facility emissions sources are summarized in Table 3.10.

Table 3.10 BACT for RREP Process Emissions

Pollutant	BACT - Emissions Control System
CO & VOC	Afterburner and good combustion practices
NO_x	Combustion controls (including low-NO_x burners) and SNCR
SO_2	SDA
H_2SO_4	SDA and fabric filter baghouse
PM/PM_{10}	Cyclone, afterburner, SDA, and fabric filter baghouse

In addition to controlling emissions associated with the process exhaust gas stream, the facility design also addresses controlling material handling and fugitive PM emissions. All conveyors would be fully enclosed, with dust collection/dust suppression systems at all transfer points to control fugitive PM emissions from coal and product handling. Haul roads would be paved, and RREP would employ best operating practices (e.g., cleaning/sweeping, as necessary) to control fugitive dust generation. The cooling towers would be equipped with drift eliminators. Furthermore, the facility would voluntarily reduce its own mercury emissions using ADA-ES' mercury control technology (i.e., ACI).

3.7.2.2 NAAQS and PSD Increment Compliance

Because construction of the facility triggered PSD review, an air quality impacts analysis was conducted to demonstrate compliance with applicable NAAQS and PSD increments. Consistent with PSD conventions for performing air quality impact analyses, as a first step, the manufacturing facility's sources of NO_x, SO_2, PM_{10}, and CO were modeled. If, for any given pollutant and averaging period, the manufacturing facility's model-predicted maximum screening concentration is less than the PSD Class II Significant Impact Level (SIL), no further modeling is required. This was the case for CO as its maximum screening concentrations were below the SILs (see Table 3.11).

Table 3.11 SIL Analysis Summary (Two AC Production Lines)

Pollutant	Avg. Period	Maximum Screening Concentration ($\mu g/m^3$)	SIL ($\mu g/m^3$)
SO_2	3-hour	49.68	25
	24-hour	18.48	5
	Annual	2.72	1
NO_2	Annual	2.07	1
PM_{10}	24-hour	9.32	5
CO	1-hour	22.67	2,000
	8-hour	14.57	500

For pollutants with model-predicted maximum screening concentrations higher than associated SILs, additional refined modeling is required, including offsite emissions sources and background concentrations. This additional modeling (also referred to in the PSD regulations as a 'cumulative' impacts assessment) was conducted for SO_2, PM_{10}, and NO_2. As part of this analysis, RREP requested an 'offsite inventory' from the LDEQ for emission sources within 57 km[11] of the manufacturing facility. The NAAQS and the PSD increment impact analyses were conducted using these data along with the manufacturing facility emissions data. As shown in Table 3.12, the analysis results demonstrate that the RREP AC manufacturing facility would not cause or significantly contribute to an exceedance of any NAAQS. It should be emphasized that these results are associated with the LDEQ-permitted rates for two AC production lines. The impacts resulting from one production line would be equal to or less than the impacts shown in Table 3.12, and therefore, the conclusions regarding NAAQS compliance for emissions from one AC production line are the same.

Table 3.12 NAAQS Compliance Analysis Summary (Two AC Production Lines)

Pollutant	Avg. Period	Peak Predicted Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	Primary/ Secondary NAAQS ($\mu g/m^3$)
SO_2	3-hour	237.76	70.69	308.45	1,300
	24-hour	43.54	20.94	64.48	365
	Annual	4.53	7.85	12.38	80
NO_2	Annual	3.90	9.41	13.31	100
PM_{10}	24-hour	16.53	59.0	75.53	150
CO	1-hour	22.67	NR	NR	40,000
	8-hour	14.57	NR	NR	10,000
NR = Not Required					

The air dispersion modeling-based Class II PSD increment consumption analysis results are shown in Table 3.13. The analysis results demonstrate that the RREP AC manufacturing facility would not cause or significantly contribute to an exceedance of any PSD increment. It should be emphasized that these results are associated with the LDEQ-permitted rates for two AC production lines. The impacts resulting from one production line would be equal to or less than the impacts shown in Table 3.13, and therefore, the conclusions regarding PSD increment compliance for emissions from one AC production line are the same.

[11] 57 km was the distance determined through dispersion modeling to be used to determine the "significant impact area."

Table 3.13 Class II PSD Increment Consumption Analysis (Two AC Production Lines)

Pollutant	Averaging Period	Predicted PSD Increment Consumption ($\mu g/m^3$)	Allowable Class II PSD Increment ($\mu g/m^3$)
SO_2	3-hour	235.68	512
	24-hour	43.18	91
	Annual	4.37	20
NO_2	Annual	2.99	25
PM_{10}	24-hour	16.53	30
	Annual	8.15	17

3.7.2.3 Additional Impacts Analysis

An additional impacts analysis was conducted for the RREP AC manufacturing facility as part of the PSD permit application (for two production lines) to assess the potential impacts to vegetation, soils, and visibility in the region caused by increases in emissions associated with the facility. Surveys were conducted by qualified scientists to inventory the soils and vegetation types in the region of the RREP AC manufacturing facility. The results of the NAAQS compliance demonstration (see Table 3.12) show maximum ground-level concentrations well below the NAAQS, which are also well below literature-based vegetation injury thresholds for each of the criteria pollutants. Further, as stated by EPA, "…for most types of soils and vegetation, ambient concentrations of criteria pollutants below the secondary NAAQS would not result in harmful effects." Therefore, emissions from the facility would not adversely impact vegetation and soils in the region.

Federal Land Management (FLM) agencies consider a source located greater than 50 km from a Federal Class I area to have negligible impacts with respect to Air Quality Related Values (AQRVs), such as visibility and acidic deposition, if total annual SO_2, NO_x, PM_{10}, and H_2SO_4 emissions ("Q" in tpy) divided by the distance ("D" in km) between the source and the Class I area (i.e., the Q/D value) is 10 or less. Because the permit is issued for two production lines, this was the basis used for calculating the Q/D value. Considering the estimated emissions from two production lines, the Q/D value for the RREP AC manufacturing facility was greater than 10; therefore, a Class I area impact analysis was required by the FLM and conducted by RREP.

An analysis was performed as part of the PSD permit application (for two production lines) to determine potential impacts on AQRVs that the RREP manufacturing facility stack emissions (i.e., plume blight) could have at the closest Federal Class I area. The closest Federal Class I area is the U.S. Forest Service's (USFS's) Caney Creek Wilderness Area in the Ouachita Mountains of Arkansas, about 270 km (167 mi) north-northwest of the RREP AC manufacturing facility. In accordance with FLM guidance, the CALPUFF model system was used to estimate potential visibility and acidic deposition effects at Caney Creek Wilderness Area. The deposition flux was estimated to be below significant threshold levels for nitrogen and sulfur compounds. The potential visibility impairment was modeled to be less than 5 percent in all 24-

hour periods; therefore, RREP AC manufacturing facility emissions are not expected to result in adverse impact to visibility.

In addition, a conservative screening visibility analysis was performed to determine potential impacts on visibility at the closest Louisiana State Park. The closest such park is the North Toledo Bend State Park on the Toledo Bend Reservoir, about 60 km (37 mi) southwest of the RREP AC manufacturing facility. Based on LDEQ guidance, EPA's VISCREEN model was used to assess potential impacts to visibility at the park. The results of the screening analysis indicate that plume perceptibility screening criteria are not exceeded; thus no adverse impact to visibility is expected at North Toledo Bend State Park. Again, this analysis was conducted for two production lines; therefore, the conclusion for one production line would be the same (i.e., no potential for visibility impairment at this site).

In addition to assessing potential impacts to vegetation, soils, and visibility, the additional impacts analysis conducted for the PSD permit application must consider the potential commercial, industrial, and residential growth associated with the RREP AC manufacturing facility. Operation of the RREP AC manufacturing facility is not expected to have any significant effect on residential growth or industrial/commercial development in the area of the facility. As a result, there would not be any significant increases in pollutant emissions indirectly associated with the RREP AC manufacturing facility.

3.7.2.4 HAP Emissions and State TAP Ambient Air Standard Compliance

Section 112 of the CAA lists 188 hazardous air pollutants (HAPs). HAPs are those pollutants that are known or suspected to cause serious health problems. Major sources of HAPs are defined as those facilities emitting, or having the potential to emit, 10 tpy or more of one HAP or 25 tpy or more of multiple HAPs. Major sources of HAPs are required to comply with maximum achievable control technology (MACT) standards. The selection of control technology based on the BACT analysis included consideration of control of HAP emissions. Total HAP emissions for the RREP AC manufacturing facility are less than 25 tpy. Additionally, the emission rate for each HAP is less than 10 tpy. Thus, the facility is not a major source of HAP emissions. The only HAPs with emission rates greater than 0.1 tpy are hydrogen chloride (HCl) (3.38 tpy), hydrogen fluoride (HF) (2.23 tpy), hydrogen sulfide (0.34 tpy), and manganese (0.15 tpy). These emission rates are associated with the LDEQ-permitted rates for two AC production lines.

Many states, including Louisiana, regulate a greater number of hazardous substances than the Federal HAPs. These substances are generally referenced as toxic air pollutants (TAPs). The only state TAPs emitted at rates greater than or equal to the associated minimum emission rates established under the LDEQ TAP emission control program (LAC 33:III, Chapter 51) are barium, chromium, copper, manganese, mercury, nickel, ammonia, HCl, HF, and H_2SO_4. Accordingly, air quality modeling was conducted for these pollutants to compare the predicted maximum ground-level concentrations against the LDEQ TAP Ambient Air Standards (AAS). As shown in Table 3.14, the results of the TAPs modeling analysis show maximum offsite ground-level concentrations to be in compliance with LDEQ TAP AAS. Therefore, under this metric, the operation of the RREP AC manufacturing facility would not cause air quality impacts that would adversely affect human health or the environment in Red River Parish. It should be emphasized

that these results are associated with the LDEQ-permitted rates for two AC production lines. The impacts resulting from one production line would be equal to or less than the impacts shown in Table 3.14, and therefore, the conclusions regarding LDEQ TAP AAS compliance for emissions from one AC production line are the same.

Table 3.14 TAP Emissions and Impacts Analysis Summary (Two AC Production Lines)

TAP	Emission Rate (lb/hr)	Averaging Period	Highest Predicted Concentration ($\mu g/m^3$)	Louisiana Ambient Air Standard ($\mu g/m^3$)[a]
Barium	0.18	8-hr	0.03	11.9
Chromium	0.011	Annual	0.0002	0.01
Copper	0.0054	8-hr	0.001	23.8
Manganese	0.034	8-hr	0.006	4.76
Mercury	0.0050	8-hr	0.0009	1.19
Nickel	0.0056	Annual	0.00008	0.21
Ammonia	4.2	8-hr	0.8	640
HCl	0.78	8-hr	0.15	180
HF	0.46	8-hr	0.10	61.9
H_2SO_4	2.24	8-hr	0.42	23.8

[a] LAC 33:III.5112, Table 51.2

3.7.2.5 Odors

The RREP AC manufacturing facility would be operated in a manner such that odors would not be detected offsite. It is expected that the types of raw materials, products, and waste materials handled at the facility would have minimal to no odor concerns. The afterburner would be used at all times while the plant is operating and would destroy compounds that could potentially be odorous. All gases would be contained in an enclosed system and treated by air pollution control equipment. As a result, normal facility operations would not generate odors that do not comply with State regulation (i.e., the odor cannot have a perceived odor intensity of six or greater on the specified 8-point butanol scale per the LDEQ test method outlined in LAC 33:III, Chapter 29.)

3.7.2.6 Accident Scenarios

Due to the highly reliable emissions control equipment, emergency venting of emissions, which would occur during an upset or accident scenario, is anticipated to be a rare event. Under an upset condition, feed to the MHF would be stopped immediately, the emergency vent would open, and process changes would be implemented (e.g., specifically slowing the rotation rate of the rake arms) that would slow the activation reaction and the generation of air pollutant emissions. Because the feed would be stopped immediately, the quantity of potential emissions would be limited to the quantity of material in the MHF. In addition, as a result of the process 'ramp down', the temperature would be decreased, further reducing the rate at which emissions would be generated.

3.7.2.7 Greenhouse Gas (CO_2) Emissions

3.7.2.7.1 Construction Emissions

Construction-related CO_2 emissions related to work on the proposed project from off-road emission sources are addressed in Section 3.7.2.1.1 of this document and are estimated to total 3074.75 tons from September of 2008 to July of 2010.

3.7.2.7.2 AC Manufacturing Facility

The AC manufacturing facility was designed to minimize GHG emissions relative to conventional AC manufacturing processes. The sources of this minimization include feedstock selection, energy efficiency, and power generation. As a feedstock in this manufacturing process, the use of lignite coal, in comparison with bituminous coal, is expected to result in approximately 30% less CO_2 emissions. Based on the expected product yields for the two feedstocks, even though the required throughput of bituminous coal would be less than that of lignite, the increased carbon content of bituminous coal would result in an increase in CO_2 emissions (for the same amount of AC production as compared to lignite).

RREP's AC manufacturing process is designed to maximize energy efficiency. The energy (thermal and chemical) within the byproduct/waste gas from the MHFs would not be wasted but captured for use in the process and for power production. An afterburner would complete the combustion of the byproducts/waste gas and would assure the destruction/control of VOC and CO emissions. The control of combustion air to the afterburner would manage the hot byproduct/waste gas combustion and minimize the use of the supplemental natural gas. The energy from the hot gases exhausted from the afterburner would be recovered further in a waste heat recovery boiler. All of the steam generated by the waste heat recovery boiler would be routed to the steam turbine generator for power production. A portion of the steam would be withdrawn from a low pressure extraction point and placed in the process at the MHFs. The balance of the steam would continue through the steam turbine generator and exit the turbine under vacuum for efficient power generation (about 6 MW for internal use and up to 13 MW exported to the electric grid). This would be the first AC production facility to optimize recovery of waste heat energy and be a net generator of electricity.

The unique energy efficient design of the RREP AC manufacturing facility would avoid the generation of greenhouse gas (GHG) emissions elsewhere by eliminating the need to generate electricity to operate the facility (approximately 58,000 tpy CO_2 from 6 MW) and by supplying electricity to the power grid, thus potentially eliminating the need for an equivalent amount of power generated by a power plant (approximately 112,000 tpy CO_2 from 13 MW). Also, the manufacturing facility would use natural gas as supplemental fuel in the MHF and afterburner for the waste heat recovery system. Natural gas is a low GHG-emitting fossil fuel.

Table 3.15 presents the estimated annual CO_2 emissions from the operation of the RREP AC production facility. The total annual CO_2 emissions from the facility (a single production line of 4 MHFs) are expected to be approximately 350,000 tons per year.

Table 3.15 Estimated Annual On-site CO_2 Emissions for the RREP AC Manufacturing Facility, One Production Line

Source	CO_2 Emissions (tpy)
AC production process	349,583[a]
Emergency fire pump	20.5[b]

[a] Based on carbon mass balance (carbon input to system minus carbon not associated with facility CO_2)
Assuming 389,330 tpy of coal feedstock with a 40% carbon content, by weight (carbon input)
Assuming 173.5 MMscf/yr of natural gas with an approximate 72.4% carbon content, by weight (carbon input)
Assuming 87,600 tpy of AC product with a 72% carbon content, by weight (carbon not associated with facility CO_2)
Assuming a stack CO emission rate of 164.8 tpy (carbon not associated with facility CO_2)
[b] Based on CO_2 emission factor for Diesel Industrial Engines of 164 lb/MMBtu (AP-42 Table 3.3-1, diesel)
Assuming 250 MMBtu/yr diesel fuel

3.7.2.7.3 On-Road Mobile Sources

In addition to the manufacturing operations, GHG emissions (predominantly CO_2) would be generated by associated transportation activities (i.e., on-road mobile sources). Note that the construction-related CO_2 emissions from off-road emission sources are addressed in Section 3.7.2.1.1 of this document.

The primary sources of on-road mobile source GHG emissions are heavy-duty diesel trucks used to transport raw materials to, and AC product from, the manufacturing site. Specifically, trucks are used to transport the lignite feedstock, AC product, ash, lime, urea or ammonia, and inorganic salt. Additional on-road mobile sources for facility operation include employee commuter traffic.

EPA's National Mobile Inventory Model (NMIM) (*http://www.epa.gov/otaq/nmim.htm*) was used to model and ultimately produce emission factors for various types of on-road motor vehicles (in pounds per vehicle mile traveled (lb/VMT)). Output data from the model for heavy-duty diesel vehicles are used to calculate emission factors for diesel truck traffic, while light-duty gasoline vehicle (passenger cars) and light-duty gasoline truck (pick-up trucks) data are used to calculate those for employee commuter traffic.

The model further classifies emission factors by type of road traveled. For RREP, the majority (estimated to be about 80%) of the VMT for the heavy-duty diesel/commuter vehicle routes identified is on interstate highways and rural connectors. The longest one-way distance that heavy-duty diesel vehicles are assumed to travel is 400 miles (specifically for the product trucks); while the shortest one-way distance that heavy-duty diesel vehicles are assumed to travel is 25 miles (specifically for the ash trucks). Commuter vehicle distances traveled are estimated conservatively high, assuming that 80% of commuters travel 55 miles one way. A detailed breakdown of emission factors by vehicle and road type is provided in Appendix G.

The NMIM-based emission factors, by vehicle type and road classification, were applied to estimated VMT data for each road classification and vehicle type associated with RREP AC manufacturing facility operations to quantify the CO_2 emissions from on-road mobile sources. Table 3.16 summarizes the CO_2 emissions from on-road mobile sources.

Table 3.16 Summary of On-Road Mobile Source Annual CO_2 Emissions (tpy)

On-Road Vehicle Type	CO_2 Emission Rate (tpy)
Lignite trucks	1,454
Product trucks	4,726
Ash trucks	104
Lime trucks	383
Salt trucks	412
Commuter vehicles	813
Miscellaneous trucks (e.g., urea/ammonia)	290
TOTAL	**8,182**

In addition to CO_2 emissions, gasoline- and diesel-powered vehicles associated with the operation of the RREP facility would emit low amounts of air pollutants, including carbon monoxide (CO), oxides of nitrogen (NO_x), volatile organic compounds (VOC) sulfur dioxide (SO_2), and particulate matter (PM_{10} and $PM_{2.5}$). The Federal Highway Administration estimated that in 2002, 3.66 million vehicles were registered in Louisiana. According to the most recently available EPA emissions data (EPA AirData at www.epa.gov/air/data), in 2002, highway vehicles in Louisiana generated the following pollutants in tons per year: 943,963 of CO; 124,192 of NO_x; 3,379 of PM_{10}; 2,506 of $PM_{2.5}$; 4,409 of SO_2; and 77,802 of VOC. The quantity of these pollutants generated by the number of vehicles utilized for operation of the RREP facility compared to the approximately 3.98 million vehicles registered in Louisiana in 2008 would be a very minor contribution to these totals.

3.7.3 No Action Alternative

Construction activities have been conducted at the manufacturing facility site that have resulted in emissions. Under the No Action Alternative, the facility would not be completed, and there would be no additional impacts to air quality or changes to the existing conditions; however, the benefits of using AC to reduce approximately 30,000 pounds of mercury per year from the flue gas of coal-fired power plants would not occur.

3.8 WASTE MANAGEMENT

3.8.1 Existing Environment

RREP is evaluating several proposals for landfills located in Louisiana and Texas within a 150 mile radius of the RREP facility. Access to these landfills from the RREP facility would initially be via LA Highway 1 (and then onto other major highways). All landfills in consideration are

either Type I or Type I & Type II landfills that are currently receiving residential, commercial, construction/demolition debris and industrial waste. These landfills have 250 plus acres permitted and can expand. All of the landfills under consideration are reputable, large landfill operations, some with multiple locations.

3.8.2 Effect of Project

Solid waste and small quantities of hazardous and universal wastes would be generated on-site through process operations, plant operations and maintenance, and office support. The facility would not transport waste onto the site or permanently store waste. Methods for handling of wastes would be offsite and would include the following disposal methods, depending on the type of waste generated: landfill, mine fill or beneficial use, municipal landfill, incineration, offsite hazardous materials/waste landfill, and offsite recycling. All process solid waste would be transported by closed container trucks. Spill prevention and clean up procedures would be in place for the facility to the point of discharge and would be coordinated with the landfill procedures. To the maximum extent possible, waste streams would be minimized or even eliminated through recycling. Licensed haulers would be contracted to dispose of waste by offsite recycling or municipal landfill/incineration in accordance with Federal and state regulations. A manufacturing facility procedure would be developed for the handling of containerized wastes and would include proper storage and labeling.

3.8.2.1 Hazardous Wastes

No hazardous waste would be generated as a direct result of the production line operations. Small quantities of hazardous waste would be generated as a result of miscellaneous support activities for the operation of the production lines, such as laboratory waste and maintenance wastes. Universal waste and hazardous wastes may include fluorescent light bulbs, cathode ray tubes and other computer-related wastes, paint wastes, nickel-cadmium batteries, waste solvents, and lead acid batteries. The small quantities of hazardous waste generated as a result of miscellaneous support activities are expected to qualify the facility as either a Conditionally Exempt Small Quality Generator (less than 100 kilograms per month, or less than 220 pounds per month), or as a Small Quantity Hazardous Waste Generator (100 kilograms to 1,000 kilograms per month, or 220 to 2,204 pounds per month) based on the Resource Conservation Recovery Act (RCRA) criteria.

3.8.2.2 Solid Wastes

Construction activities have and would continue to result in the generation of solid wastes, including construction materials for buildings, concrete rubble, and land-clearing debris. Management of construction debris includes recycling and reuse when possible. RREP disposed of 271 tons of construction debris from start of construction through December 2009, and an additional 300 tons is projected to be generated through the end of construction. Construction waste is currently disposed of at the Desoto Parish (Mundy) Landfill, which has sufficient capacity to accommodate the 300 additional tons of construction waste that the project would generate.

During operation, non-hazardous solid waste would be generated primarily as a result of by-products from the air emissions control systems. The combined afterburner, boiler, and fabric filter (baghouse) would yield a solid waste composed of flyash (10%), AC for mercury removal (1%), and calcium salts and lime inerts (from the SDA system and fabric filter) (88%). For one production line, quantities are estimated to be approximately 4,700 pounds per hour (dry weight). Other miscellaneous solid waste from the manufacturing facility would consist of such materials as, but not limited to, cardboard boxes, paper, plastic containers, glass, discarded cleaning solutions, used oil, etc.

3.8.2.2.1 Categories of Solid Wastes

The specific categories of solid wastes that may be generated could consist of those identified below. This list of potential solid waste streams is based upon those generated by similar operations and upon process knowledge of the facility operations.

Process waste – baghouse waste, ash from the afterburner and waste heat recovery boiler, and grit from lime operations would be managed on-site in roll-offs. The roll-offs would be covered to prevent storm water intrusion and to reduce air emissions during storage and transport. The waste material is non-hazardous and would be disposed offsite at an authorized landfill.

Plant trash – plant trash consisting of cardboard, plastics, paper, etc. would be collected and separated for recycling consistent with the site's recycling policy. Any plant waste that cannot be recycled would be collected in dumpsters and the waste would be disposed offsite at an authorized landfill.

Used oil – used oil is expected to be generated from the periodic maintenance of oil containing equipment such as compressors, bearings, hydraulic systems, overhead cranes, pumps, blowers, etc. In addition, used oil may be generated from on-site vehicle maintenance and from operation of oil/water separators. Used oil is classified as non-hazardous and would be managed on-site in the units themselves and/or in 55-gallon drums. Any containers utilized for the storage of used oil would be provided with secondary containment. Used oil would be recycled offsite at an authorized facility.

Used oil filters – used oil filters are expected to be generated from the maintenance of vehicles and other motorized equipment. Used oil filters would be drained and crushed and would be managed on-site in 55-gallon drums that are provided with secondary containment. Used oil filters would be recycled offsite at an authorized facility.

Oily rags – oily rags are expected to be generated from the performance of routine maintenance activities. Oily rags would be managed on-site in 55-gallon drums. The rags would either be recycled by an industrial rag supply service or disposed offsite at an authorized landfill.

Soil and debris containing petroleum – soil and debris containing petroleum may be generated in the event of a spill or release from equipment or containers being managed on-site. Minor spills of oil associated with facility operations may be cleaned up using disposal absorbent

materials such as kitty litter. It is anticipated that potential spills of petroleum would be small and that 55-gallon drums would be adequate to manage any wastes generated. Contaminated soil and debris would be disposed offsite at an authorized landfill.

Waste paint – waste paint may be generated as a result of maintenance activities or new construction. Waste paint would be managed in 55-gallon drums and would be provided with secondary containment. Waste paint would typically be considered a hazardous waste and would be disposed offsite at an authorized hazardous waste Transportation, Storage, Disposal (TSD) facility.

Waste solvents – waste solvents may be generated from the cleaning of equipment or from the cleaning of paint equipment. Waste solvents would be stored on-site in a suitable U.S. Department of Transportation (USDOT) approved storage container, within secondary containment and away from ignition sources, and would be sent offsite to an authorized disposal facility.

Used solvents - used solvents associated with parts cleaner stations would be recycled offsite by an authorized facility. Used solvents are stored within the combined washer/container vessel until the used solvents are removed for recycling.

Empty hazardous substance containers – empty containers that previously contained a hazardous substance such as empty ethylene glycol drums would be rendered empty in accordance with RCRA requirements and would be recycled or disposed in an authorized landfill.

Universal wastes – Universal wastes consisting of spent lead acid batteries; pesticides; mercury thermostats; fluorescent, neon, mercury vapor, high pressure sodium, and metal halide lamps; and ethylene glycol based anti-freeze would be managed in containers that remain closed, are structurally sound, and are compatible with the Universal wastes being managed. Such wastes as spent lead acid batteries, mercury containing wastes, and ethylene glycol would be recycled offsite at an authorized facility. Universal wastes that cannot be recycled would be disposed offsite at an authorized landfill.

Laboratory wastes – laboratory wastes (small quantities of chemicals and some solid waste generated during quality tests of the product) would be segregated based upon compatibility and would be stored on-site in “lab packs” until they can be disposed offsite at an authorized facility.

3.8.2.2.2 Spill Prevention and Waste Minimization

In order to prevent spills and reduce the amount of solid waste generated, RREP would utilize the following Best Management Practices:

- design of equipment to prevent spilled material from escaping (e.g., high liquid level alarms, pump cut-offs, secondary containments, spill collection sumps, etc.);
- proper material handling procedures;

- proper training of facility personnel and on-site contractors;
- routine visual inspections of equipment and containers; and
- plant loading and unloading procedures performed in accordance with the minimum requirements of the USDOT.

During material transfer operations, precautions would be taken to ensure both personnel safety and prevention of spills or accidental releases during routine handling of chemicals. Visual checks for leaks before, during, and after material transfers provide operating personnel with the opportunity to contain releases due to faulty equipment and to implement proper repair measures.

Tanker truck loading/unloading transfer operations would be performed under the oversight of RREP personnel. Drivers must remain present for the entire loading/unloading operation. The truck driver would be required to properly ground the vehicle with the wheels chocked. The chocks would not be removed until the loading operation is complete and the hoses have been disconnected and capped. Drivers must inspect the drains and all outlets of their vehicle, and if necessary, tighten, adjust, or replace drains, valves, etc., before departure to prevent liquid discharges while in transit.

Facility personnel would be trained in methods for their particular area concerning routine handling procedures for the materials managed.

Aboveground storage tanks would be constructed of materials compatible with the products at the conditions of storage. Visual observations of the storage tanks would be made routinely during normal work operations. The construction materials of the aboveground portions of the tanks would be routinely inspected to detect corrosion or erosion and leaking of fixtures and seams. The area immediately surrounding the tanks would be routinely patrolled to detect obvious signs of leakage (e.g., wet spots or dead vegetation).

3.8.3 No Action Alternative

Construction activities have been conducted that have resulted in the production of solid waste. Under the No Action Alternative, there would be no additional impacts to waste management or changes to the existing conditions.

3.9 SOCIOECONOMIC CONDITIONS

The region of influence for the analysis of socioeconomic conditions is Red River Parish, with special focus on the nearest population center, the Town of Coushatta (population 2,088 in 2008). The entire Parish is located in a rather remote, mostly rural area of Louisiana. Figure 3-6 shows the region of influence, Red River Parish (population 9,118 in 2008), including the Town of Coushatta. Note that the Parish is divided into two census tracts: 9601, which comprises approximately 90% of the land area of the Parish, and 9603, which includes Coushatta. The Parish (combination of the two census tracts) was selected as the region of influence because the Project Area is located close to the boundary line for the census tracts,

and because it was anticipated that any socioeconomic impacts realized would occur across the two tracts. The closest community to the Project Area is Armistead, located approximately ¾-mile to the east. Armistead is not an incorporated city, town or village, and U.S. Census data are not available for this specific locale; therefore, the geographic focus for this environmental justice analysis is the next closest population center, Coushatta. Coushatta, located approximately three miles to the east of the Project Area, is the closest incorporated town with a potential employee pool and public services (such as schools, hospitals or fire departments) that could be affected by the construction and operation of the manufacturing facility.

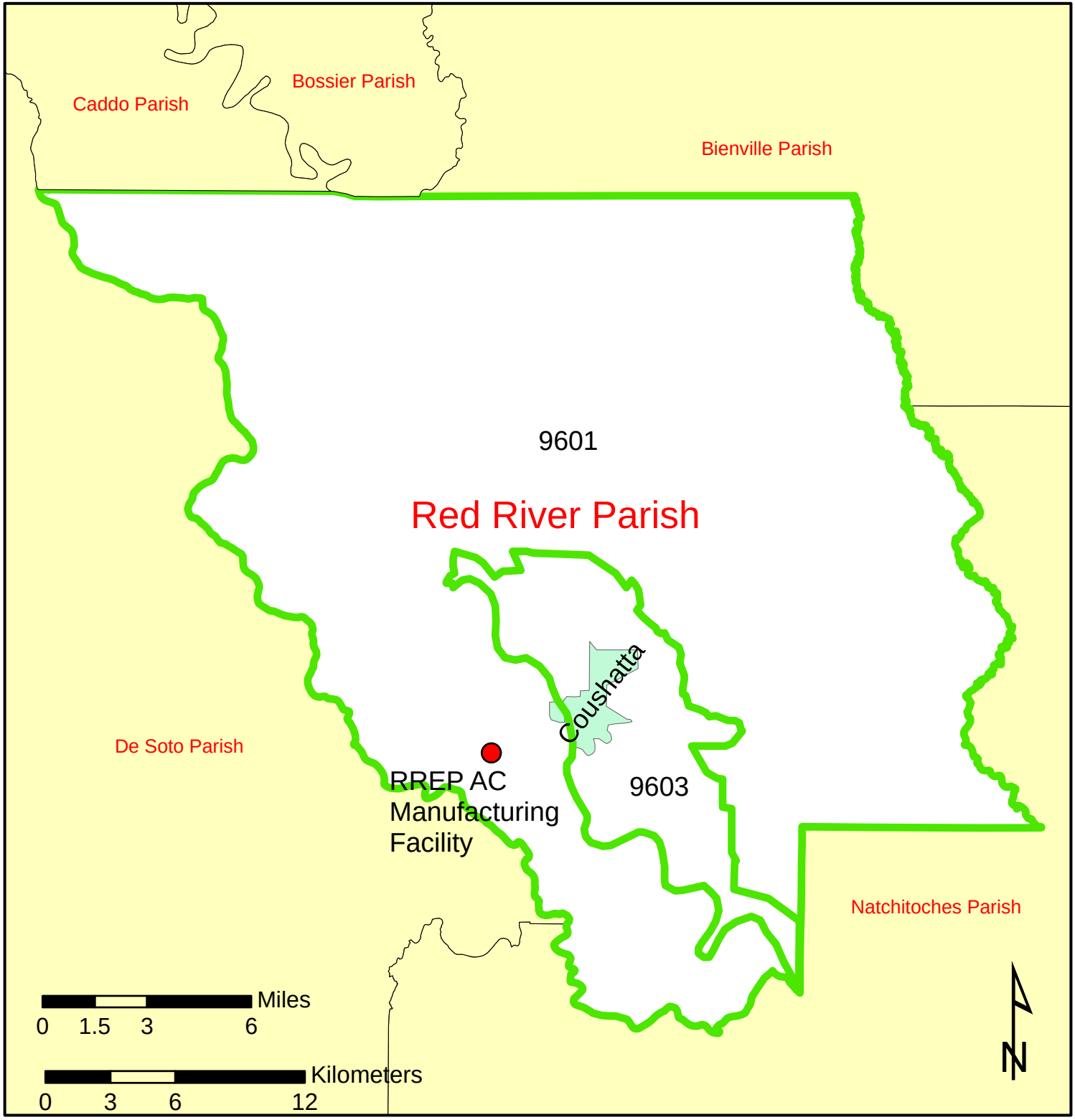


Figure 3-6
Map of Red River Parish Showing Census Tracts

Sources: U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau. 2000

Armistead, Red River Parish, Louisiana

Date: 27 October 2009

Legend

Census Tract Boundary

3.9.1 Demographics and Economics

3.9.1.1 Existing Environment

In 2008, the total population of Red River Parish was approximately 9,118. Approximately 56% of the Parish population was white; approximately 44% of the Parish population was classified as minority (42% were black and 2% as other (Hispanic, Asian, etc)). The population in the Parish has decreased over time; in 1999, the total population was approximately 9,622 (U.S. Census Bureau 2009).

Unemployment data for the Parish show that for 2009 (through June), the unemployment rate has averaged 10%. This is an increase over the average unemployment rate of 7.3% for 2008 (U.S. Department of Labor 2009). According to the Census 2000 data, the median household incomes in 1999 for the Parish of Red River, State of Louisiana, and the Nation were $23,153, $32,566, and $41,994, respectively (U.S. Census Bureau 2009).

In 2008, the total population of Coushatta was approximately 2,088. (Note that only total population data are available for 2008 for Coushatta.) Census 2000 data indicate that in 1999 the total population for Coushatta was approximately 2,299; therefore, the population trend for Coushatta is reflective of the decreasing population trend for the Parish as a whole. The 2000 Census data show that approximately 33% of Coushatta's population was White; approximately 67% of Coushatta's population was classified as minority (65% as Black and 2% as Other).

For the people that are employed in Coushatta, the median household income is below the poverty level, as defined by the U.S. Department of Health and Human Services (DHHS). In 1999, the Parish and Coushatta median household incomes were $23,153 and $15,500, respectively (U.S. Census Bureau 2009). Given that the DHHS poverty level income for 1999 was $16,895 (DHHS 2009), the median household income for Coushatta was below the poverty level.

3.9.1.2 Effects of Project

The project is anticipated to provide positive economic effects on the local community. The facility would continue to create jobs and add a new revenue source for the local economy during construction and throughout the manufacturing facility's operations. During operation, the manufacturing facility would also purchase local goods and services. The expected annual payroll is approximately $4.3 million for one production line. Based on RREP's knowledge of construction and operations of this type of manufacturing facility, the ongoing construction activities are projected to employ more than 300 full time and temporary employees, which represents nearly 800,000 labor hours. The manufacturing facility would create about 50 new permanent jobs for one production line. In addition, at least 20 additional full-time jobs related to support activities such as transportation would be created.

Regarding location of the employees, the management-level people hired to date have selected living locations from southern greater Shreveport to Natchitoches. It is expected that some

plant workers would reside in Coushatta or nearby towns. There is not expected to be a significant concentration of workers in one location such that it would produce a significant burden on the availability of adequate housing or infrastructure such as schools, hospitals or fire departments.

3.9.1.3 No Action Alternative

Construction activities have been conducted at the manufacturing facility site that have resulted in the hiring of workers and other employees. Under the No Action Alternative, current employees would no longer be employed by RREP, and no jobs or other economic benefits would be created by the operation of the facility.

3.9.2 Environmental Justice

In February 1994, President Clinton issued Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (59 FR 7629 [Section 1-201]). This order requires that "each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities, on minority populations and low-income populations."

CEQ has issued guidance to Federal agencies to assist them with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. The guidance provides information on how to interpret the key terms and criteria to consider when determining whether health or environmental effects are disproportionately high and adverse. These include whether the effects are significant or above generally accepted norms, whether the environmental effects, health risk, or rate of exposure of a minority or low income population is significant and appreciably exceeds or is likely to appreciably exceed those on the general population, and whether effects occur or would occur in a minority or low income population affected by cumulative or multiple adverse exposures from environmental hazards (CEQ 1997).

3.9.2.1 Existing Environment

A minority population is identified where either: (a) the minority population of the affected area exceeds 50%, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population. As discussed earlier, approximately 67% of the Coushatta population was classified as minority; therefore, assuming this percentage has not changed significantly since the 2000 Census, Coushatta's population, in general, is considered a minority population.

The 2000 Census data indicate that 50% of all working Coushatta residents were below the poverty level, compared to 30% of all Parish workers. Given the poverty rate for the Coushatta and the Parish as a whole, the Coushatta population is considered to be a low-income population.

3.9.2.2 Effects of Project

As demonstrated in Section 3.9.2.1, the Coushatta population is considered a minority and low-income population. The impact analysis indicated that for the following resource areas, effects to the surrounding community as a result of the proposed project have or would occur:

- surface water and wetlands – temporary and permanent impacts have and would occur to in channel waters of the U.S., Section 10 open water wetlands, and herbaceous fringe wetlands;
- air quality – construction has and operation would result in emissions of some air pollutants, as well as the greenhouse gas CO_2;
- noise – construction has and operation would generate noise; and
- transportation – construction activities at the manufacturing facility site have had temporary impacts at one intersection during PM peak hours.

Based on the impact analyses presented in Section 3.0 of this document and summarized below for the resource areas listed above, construction and operation of the AC manufacturing facility would not result in a disproportionately high and adverse impact to the health of the minority and low-income population of Coushatta specifically. In addition, construction and operation of the AC manufacturing facility would not result in a disproportionately high and adverse impact to the natural or physical environment that affects this minority and low-income population.

- Surface water and wetlands - temporary impacts due to the project equal less than 0.22 acres of in channel waters of the U.S. and Section 10 open water wetlands. Permanent impacts due to the project equal less than 0.32 acres of in channel waters of the U.S. and Section 10 open water wetlands and less than 0.01 acres to herbaceous fringe wetlands. The U.S. Army Corps of Engineers authorized the proposed activities under Nationwide Permit 39. These impacts were not significant, and they have not had an impact on the minority or low income population that appreciably exceeds or is likely to appreciably exceed those on the general population in the surrounding area. Surface water and wetlands impacts would not result in cumulative or multiple adverse exposures from environmental hazards to the minority or low-income population.

- Air quality - All required permits for construction and operation have been issued by LDEQ. As part of the permitting process, potential and real adverse environmental impacts of pollutant emissions from the proposed new permitted sources were assessed by LDEQ prior to construction to ensure that they were minimized. Even though the applicable permitting requirements do not prevent sources from releasing emissions, they do function to protect public health and welfare. As discussed in Section 3.7.2, operation would not cause or significantly contribute to an exceedance of any National Ambient Air Quality Standard and maximum offsite ground-level concentrations of toxic air pollutants would be in compliance with LDEQ toxic air pollutants Ambient Air Standards. Operation would not cause air quality impacts that would adversely affect human health or the environment in Red River Parish. Air emissions would not have a significant and adverse impact on the minority or low income population that appreciably

exceeds or is likely to appreciably exceed the impacts on the general population in the surrounding area, nor would they result in cumulative or multiple adverse exposures from environmental hazards.

- Noise - although noise has been generated by construction and would be generated by operation of the facility, as discussed in Section 3.9.4, increases to the ambient sound environment from construction and operation would not have a significant and adverse affect on any sensitive receptors, including the nearest residences. Noise impacts would not result in cumulative or multiple adverse exposures from environmental hazards to the minority or low-income population.

- Transportation – While temporary delays may have been experienced by drivers during construction, these were not significant or above generally accepted norms, and they have not had a greater impact on the minority or low income population when compared to the general population in the surrounding area. Transportation analysis indicates that the existing roads are adequate to handle increased volume during operation and no significant and adverse impacts are expected. Transportation impacts would not result in cumulative or multiple adverse exposures from environmental hazards to the minority or low-income population.

3.9.2.3 No Action Alternative

Under the No Action Alternative, there would be no additional impact on minority or low-income populations in the region of influence; however, no jobs or other economic benefits would be created by the operation of the facility.

3.9.3 Public Health and Safety

3.9.3.1 Existing Environment

Public health and safety concerns include the risk of exposure from hazardous materials that may be contained in the soil and groundwater beneath the project site related to the former uses of the site. Phase I Environmental Site Assessments were conducted for the Property in 2008 and updated in 2009 and conducted for the substation property in 2009 (Zephyr 2008a, 2009a, and 2009f). Those assessments found no evidence of recognized environmental conditions[12] in connection to the proposed project area. No environmental liens or activity and use limitations were found to be recorded against or related to the proposed project area.

Another public health and safety concern is the availability of certain public services, such as police departments, fire departments, and medical services. Such protective services are

[12] The term recognized environmental conditions means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

currently serving the proposed project area, as described in more detail in the following paragraphs.

Police Protection Services

The Red River Parish Sheriff's Office, with headquarters in Coushatta, provides police protection throughout the Parish. The Sheriff's Office employs 46 regular deputy sheriffs and two part-time deputy sheriffs. In addition, Coushatta has its own municipal police department, while the Louisiana State Police provide support to local jurisdictions. In June 2009, Red River Parish instituted Enhanced 9-1-1, giving the Parish the most technologically advanced 9-1-1 system in the region.

Fire Protection Services

The Red River Parish Fire Protection District provides fire protection services throughout the Parish, with the Central Fire and Rescue Station No. 1 located in Coushatta. If help is needed, the District has mutual aid agreements with surrounding fire protection districts (in Caddo, DeSoto, Bossier, Bienville, and Natchitoches Parishes). The Red River Parish Emergency Planning Committee has its offices in Coushatta.

Medical Services

The CHRISTUS Health System, which operates numerous hospitals throughout Louisiana, operates the CHRISTUS Coushatta Health Care Center in Coushatta. This facility is located approximately three miles from the RREP AC manufacturing facility site.

3.9.3.2 Effects of Project

3.9.3.2.1 Construction Effects

Construction of the proposed project posed the normal risks associated with construction that stem from the use of heavy equipment (bull dozers, front-end loaders, etc.) and the need for trenching, excavating, welding, etc. Site security is provided at both entrances to the construction site to prohibit access by the general public. No contaminated soil was observed or documented during development of the Phase I Environmental Site Assessments, so there is no known health and safety risk associated with disturbance of the soil.

3.9.3.2.2 Operations Effects

The RREP AC manufacturing facility site is secured by a perimeter fence, gates, and security lighting. This prohibits access by the general public. Risks to the general public due to routine operations are expected to be virtually non-existent; risks to the general public due to accidents (fires and explosions) are expected to be minimal, as discussed in more details in Table 3.17.

The ability of the existing public services (police departments, fire departments, and medical services) to continue to effectively protect public health and safety once the RREP AC manufacturing facility becomes operational are outlined, by service area, in the following paragraphs.

Police Protection Services

Public services with respect to police protection are not expected to be adversely impacted as a result of the project; there would be negligible or no increase in demand for police services. Security at the site includes fencing around the RREP AC manufacturing facility site and a card reader system for personnel access control.

Fire Protection Services

Public services with respect to fire protection are not expected to be adversely impacted as a result of the project; there would be negligible or no increase in demand for fire protection services. An on-site emergency fire water pump system would be installed. Facility personnel would be trained to maintain, test and operate the facility fire protection systems.

Medical Facilities

Public services with respect to medical facilities are not expected to be adversely impacted as a result of the project; there would be negligible or no increase in demand for services at the CHRISTUS Coushatta Health Care Center.

Additionally, any increase in population as a result of the project is expected to be negligible and dispersed throughout the region; therefore, any potential minimal increase in the demand for public services would be easily accommodated.

Occupational and Public Health and Safety

Occupational and public health and safety risks attributable to the RREP AC manufacturing facility operations are described in Table 3.17. This table identifies potential risks and describes the engineering and administrative controls (including design considerations) that have been put in place during construction and would be put in place during operation in order to minimize risks to workers and the general public.

Table 3.17 Occupational and Public Health and Safety Risks

Risk Description	Engineering Controls	Administrative Controls
Coal dust is combustible. Explosive dust concentrations could occur in confined enclosures, such as silos and dust handling systems. Overpressure effects from a dust explosion would pose minimal risk to the general public because of distance.	The facility has been designed to minimize the potential for and consequences of a dust explosion. Silos and baghouses would be equipped with explosion panels. Deflagration sensors and isolation valves would be employed. The facility is being designed in accordance with the most current editions of applicable National Fire Protection Association standards.	The Occupational Safety and Health Administration (OSHA) National Emphasis Program (NEP) for combustible dusts identifies administrative controls that should be in place at facilities where there is a potential for a dust explosion. Appropriate work practices, such as housekeeping to minimize dust accumulations and control of ignition sources, would be employed consistent with the NEP.

Risk Description	Engineering Controls	Administrative Controls
Coal and powdered AC are combustible materials and can burn when ignited. A coal or powdered AC fire would pose minimal risk to the general public because of distance.	Coal conveyors would be equipped with sprinklers. Fire hydrants and fire extinguishers would be located throughout the facility. A diesel fire water pump would provide water for firefighting.	Appropriate work practices, such as housekeeping and control of ignition sources, would be employed to minimize the possibility of a fire. Firefighting equipment would be periodically inspected in accordance with industry standards.
Byproduct gas from the thermal decomposition of coal would contain flammable constituents, and the gas temperature would likely exceed the auto-ignition temperature. Natural gas would also be used in the facility. A gas fire or explosion would pose minimal risk to the general public because of distance and minimal inventories of flammable gas on-site.	Process equipment that contains flammable gas has been designed in accordance with applicable engineering standards. The combustion process for byproduct and natural gas (afterburner) would be equipped with combustion controls and safety interlocks.	Process equipment that contains flammable gas, combustion controls and safety interlocks would be periodically inspected in accordance with applicable industry standards and manufacturer recommendation.
Coal dust is known to contain crystalline silica. Chronic exposure to elevated concentrations of dust (inhalation) could cause lung damage or lung cancer. Risks of exposure would be limited to personnel on-site.	The facility has been designed to minimize personnel exposure to dust. Open coal transfers would occur inside of properly ventilated buildings with baghouse controls. Coal conveyors would be covered and all transfer points would be vented to a baghouse. Powdered AC would be conveyed pneumatically and all emission points would be vented to a baghouse.	Ventilation systems and enclosures to minimize exposure to dust would be maintained in good working order. Personnel who would open and work on equipment that contains elevated concentrations of dust would be equipped with and trained to properly use appropriate personal protective equipment (PPE).

Risk Description	Engineering Controls	Administrative Controls
Diesel fuel would be stored on-site and used for vehicle refueling. The capacity of the proposed diesel tank would be 1,500 gallons. The on-site storage of fuel presents a potential fire/explosion hazard.	The diesel tank would be provided with secondary containment capable of controlling a catastrophic release from the storage tank plus the rainfall from a storm event. The tank would be designed to be compatible with the material being stored. Tank integrity testing would be performed in accordance with the requirements of 40 CFR Part 112. A fire extinguisher would be maintained at the fueling area.	The diesel tank would be operated in accordance with the requirements of a Spill Prevention Control and Countermeasures (SPCC) Plan that is prepared in accordance with the requirements of 40 CFR Part 112. Employees would receive training with regard to emergency procedures, emergency equipment, and emergency systems. Routine inspections would be made of the tank and equipment. Operational procedures would be designed to meet the requirements prescribed by the Department of Transportation (DOT). Warning signs would be prominently displayed in the loading/ unloading area reminding the drivers that “No Smoking” is allowed and to disconnect hoses before moving the vehicle.
Corrosive chemicals would be used in wastewater treatment and in batteries for forklifts, manlifts, etc. Aqueous urea would be used for reduction of NOx emissions in flue gas. Lime would be used for reduction of SOx emissions in flue gas. Burns, skin and eye irritation are the greatest hazard from these chemicals. Risks of exposure would be limited to persons on-site.	Corrosive chemicals would be stored in enclosed containers. Emergency eyewash / showers would be located in close proximity to corrosive chemicals.	Corrosive chemicals would be handled in accordance with facility safety, operating and maintenance procedures. Appropriate PPE would be used. Personnel would be trained in hazards.
Powdered AC may adsorb oxygen and could create an oxygen deficient atmosphere within a confined space, such as a powdered AC storage silo.		Confined space entry procedures would be employed. Procedures would include an oxygen check prior to confined space entry.
Noise from mechanical equipment is a concern within any facility. Noise levels would be surveyed following plant startup.	The facility has been designed to achieve an ambient noise level of 85 db or less. Noise sources would be insulated as necessary to minimize noise levels.	Any high noise areas would be identified and marked with signage, and a Hearing Conservation Program would be implemented.
Furnaces at the facility would create thermal hazards due to the high temperatures used to process coal. Hot surfaces would be a potential burn hazard for workers on-site.	Hot surfaces at working levels would be insulated or protected with barriers.	Insulation and barriers would be routinely inspected.

Risk Description	Engineering Controls	Administrative Controls
The process would include moving conveyers and rotating equipment. Rotating and moving equipment would create mechanical hazards for workers on-site.	Conveyers would be covered. Rotating equipment would be protected with guards and covers.	Covers and guards would be routinely inspected.
Materials and equipment would be moved around the site using forklifts, manlifts, and easy-go carts. This would create vehicular hazards within the facility, such as driving into workers or equipment, or driving off an elevated surface such as a loading dock.		Mobile equipment would be routinely inspected for safety and operators would be trained in proper operation. Hazard areas such as high traffic corridors would be marked, mirrors used when appropriate. Loading docks would have a type of barrier when trucks are not at docks.
A pond has been constructed for storage of storm water. This creates a drowning hazard due to an open body of water within the facility.	The pond will be fenced and identified by signs. The gate will be locked and only authorized personnel permitted to enter.	Procedures require any personnel doing work within the area to notify the control room and stay in contact via radio.
The RREP facility would operate as a Conditionally Exempt Small Quality Generator (less than 100 kilograms per month, or less than 220 pounds per month), or as a Small Quantity Hazardous Waste Generator (100 kilograms to 1,000 kilograms per month, or 220 to 2,204 pounds per month) based on the Resource Conservation Recovery Act (RCRA) criteria.	Any hazardous wastes generated by RREP would be provided with secondary containment and the storage areas would be routinely inspected. Universal wastes would be provided with secondary containment in approved DOT Universal Waste containers.	All hazardous waste generated at RREP would be managed in accordance with the requirements of 49 CFR Parts 260 and 262. Hazardous waste containers would be packaged and labeled in accordance with 40 CFR 262.30 – 262.34 requirements. Universal wastes would be managed in accordance with 40 CFR Part 273 requirements. Employees would receive training with regard to emergency procedures, emergency equipment, and emergency systems.

Intentionally Destructive Acts

The RREP AC manufacturing facility presents an unlikely target for an intentionally destructive act and has a low probability of attack. Table 3.17 describes risks of fire or explosion from materials used at the site and the controls in place to minimize these risks. For all combustible substances, a fire or explosion, whether intentional or accidental, would pose minimal risk to the general public because of distance from the facility and the quantities of flammable materials. In addition, the RREP AC manufacturing facility site is secured by a perimeter fence, gates, and security lighting, and card readers for personnel access, which prohibit access by the general public and deter intruders.

3.9.3.3 No Action Alternative

Construction activities have been conducted at the manufacturing facility site and workers are subject to typical hazards and occupational exposures faced at other industrial construction sites. Under the No Action Alternative, it is expected that the risk to workers and the general public would decrease because there would not be continuing construction or actual operation at the facility.

3.9.4 Noise

3.9.4.1 Existing Environment

A baseline noise monitoring study was conducted in the area of the manufacturing facility site in August 2008 and a baseline noise monitoring report was prepared for RREP in September 2008 (Zephyr 2008e). The area is rural, with few local residences and businesses. Sound level measurements were taken at community/sensitive receptors using a Quest Technologies Q-300 Noise Dosimeter (ANSI Type 2) with an eight millimeter ceramic microphone and windscreen. A calibration of the noise level meter was performed before monitoring began using a Quest Technologies QC-10 Calibrator. Measurements (L_{eq}) were taken over a 15-minute duration during the daytime and nighttime.[13] Figure 3-7 shows the locations of the noise monitoring sites. Table 3.18 is a summary of the community/sensitive receptor monitor locations and average measured values. Note that average baseline nighttime noise levels are greater than average baseline daytime noise levels at several locations. This is due to insects/wildlife, trains, and cattle noise.

Table 3.18 Noise Monitoring Locations and Average Measured Levels

Monitor ID	Monitor Location				Average Measured Baseline Noise Level—Daytime (L_{eq}(15-min) - dBA)	Average Measured Baseline Noise Level--Nighttime (L_{eq}(15-min) - dBA)
	Latitude (N)	Longitude (W)	Description	Distance to RREP Site Boundary (Feet)		
NS-1	32° 0.330'	93° 23.888'	Cemetery	775	60	54
NS-2	32° 0.558'	93° 23.082'	Nearest Residence	2,000	68	72
NS-3	32° 0.312'	93° 22.871'	Odessa Café parking lot	2,400	65	59
NS-4	32° 0.138'	93° 22.701'	Business	3,300	61	65
NS-5	31° 59.434'	93° 22.492'	Residence	5,500	45	56

[13] L_{eq} (Level Equivalent): The (energy) average noise level over a specified time period. A-weighted decibels (dBA): A measure of noise level used to compare noise from various sources. A-weighting approximates the frequency response of the human ear.

3.9.4.2 Noise Impact Criteria

There are two different types of noise impact criteria used to assess noise impact - relative and absolute. "Relative" impact refers to when project noise levels exceed the ambient (without project) noise levels by a certain amount. "Absolute" impact refers to an absolute noise level standard which would be exceeded as a result of the project.

Relative Impact Noise Criteria: The International Organization for Standardization (ISO) considers an increase of greater than 5 dBA in the ambient noise level at residential locations as significant and is used in this study (ISO 1996).

Absolute Impact Noise Criteria: The Department of Housing and Urban Development (HUD) employs 65 L_{dn} as the dividing line between acceptable and unacceptable noise levels for residential locations and is used in this study (HUD 2002). [14]

[14] Day-night average noise level (Ldn or DNL): The energy average of A-weighted decibels (dBA) sound level over a 24-hour period; includes an adjustment factor for noise between 10 p.m. and 7 a.m. to account for the greater sensitivity of most people to noise during the night.

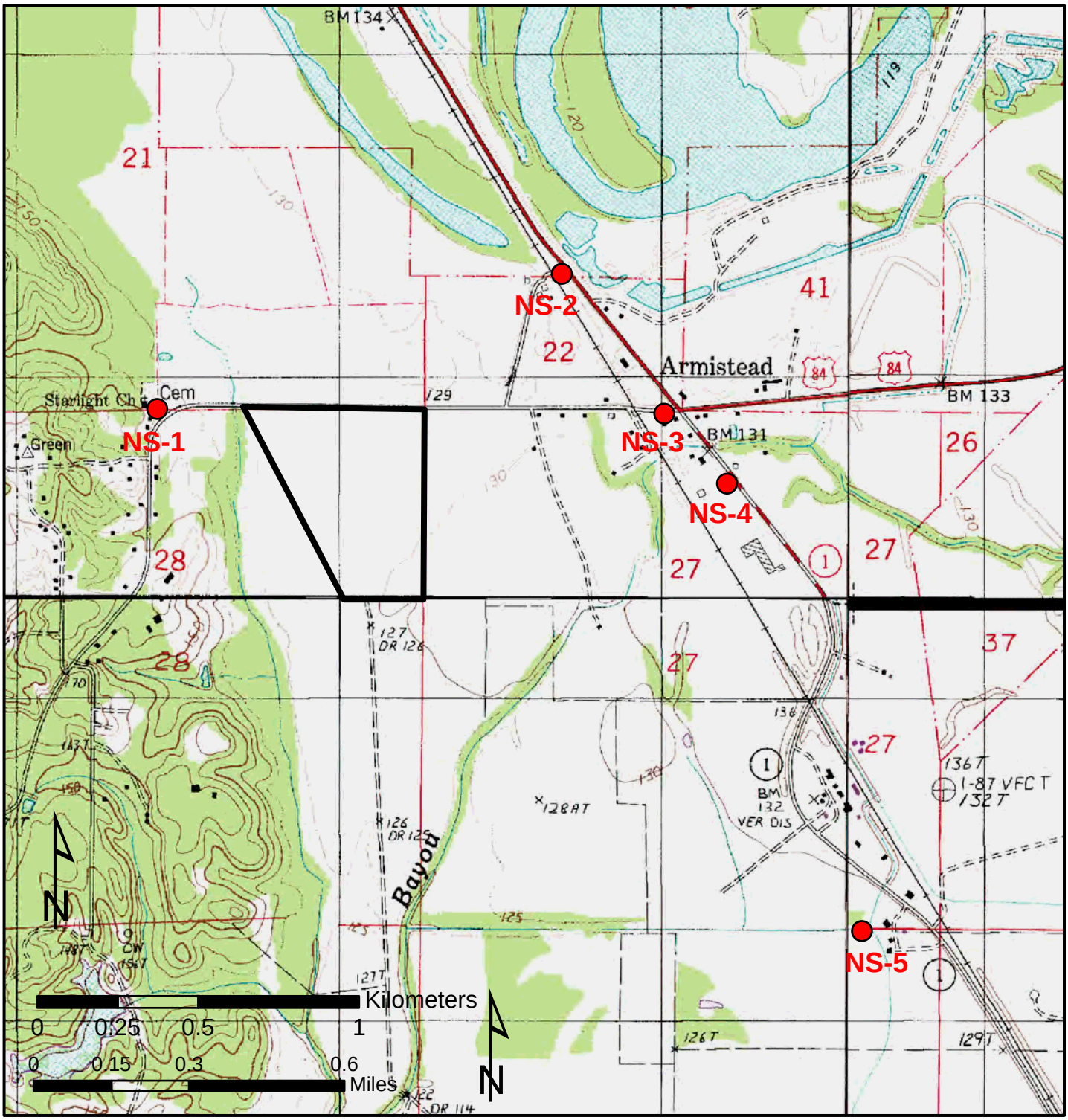


Figure 3-7
Noise Receptor Locations

Sources: Harmon USGS Quadrangle; 1996.
Armistead, Red River Parish, Louisiana
Date: 5 November 2009

Noise Receptors

Site Boundary

Construction Noise Impact Criteria: Since construction noise is temporary, construction noise standards generally allow higher levels of noise than those for facility operations. The Federal Transit Administration (FTA) construction noise method combines the noise levels of the two noisiest pieces of construction equipment and identifies locations where noise levels would exceed 90 dBA (1 hour L_{eq}) during the day, or 80 dBA (1 hour L_{eq}) at night. These criteria are used in this study (FTA 2006).

Local Noise Ordinances: There are no applicable local noise ordinances.

3.9.4.3 Effects of Project

3.9.4.3.1 Construction Effects

The majority of construction activities that generate noise have already occurred. Construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers are expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected. The quantitative noise assessment procedures given in Section 12.1.1 of the FTA *Transit Noise and Vibration Impact Assessment* guide were followed to project the noise impact at the closest resident receptor, which is about 2500 ft from the construction site (FTA 2006). Following the assumptions in the FTA guidance, the combined noise from the two loudest pieces of construction equipment (truck and Derrick crane) was projected to be 57 dBA (1 hour L_{eq}) at the receptor. This noise level is well below the levels in the FTA guidance manual (80 dBA nighttime, 90 dBA daytime) that are considered noise impacts from construction.

All construction activities are and would continue to be conducted in accordance with OSHA guidelines, which address noise and hearing conservation in specific standards for the construction industry. Guidelines for hearing protection are also being followed on site and are in accordance with OSHA.

3.9.4.3.2 Operations Effects

Noise levels generated by the operation of the proposed facility were projected based on current engineering design data. Major noise sources are listed below:

- Silos
- Roller mills
- Hoppers
- Coal crusher building with coal crusher
- Conveyors
- Air cooled exchangers and cooling tower
- Steam surface condenser
- Air compressor inlet/exhaust/extraction piping
- Steam turbine generator inlet/exhaust/extraction piping
- Furnaces and burners

- Pumps and drivers
- Baghouse
- Blowers and fans
- Compressors and drivers
- Steam turbine generator, stack and bin vent filters
- Afterburner
- Spray dryer
- Boiler

A noise model, which utilizes the commercial software, SoundPlan, was used to project surrounding environmental noise levels near the proposed facility. The equipment noise levels for the model were based on supplier data where available and engineering judgment based on the construction contractor's project experience with similar sized process equipment. Traffic generated by operation of the project would be small relative to existing conditions, thus traffic noise would be minimal and has not been included. Based on estimated of traffic The noise model follows the prediction methodology defined by the Engineering Equipment Material Users Association (EEMUA)[15], CONCAWE[16](the oil companies' European association for environmental and health protection) and ISO 9613-2[17].

Table 3.19 gives the noise levels at the community/sensitive receptor monitoring locations. Baseline Noise Levels are the same as in Table 3.18 and were measured as described in Section 3.9.4.1. Projected Noise Levels are modeled results.

[15] EEMUA, Publication No. 141 "Guide to the use of Noise Procedure Specification."

[16] The Oil Companies' International Study Group for Conservation of Clean Air and Water – Europe: The Propagation of Noise from Petroleum and Petrochemical Complexes to Neighboring Communities.

[17] International Standard ISO 9613-2: Acoustics – Attenuation of Sound during Propagation Outdoors, Part 2: General Prediction Method, 1996 (E).

Table 3.19 Baseline and Projected Operation Noise Levels

Monitor ID	Monitor Description	Average Measured Baseline Noise Level—Daytime (L_{eq}, dBA)	Average Measured Baseline Noise Level--Nighttime (L_{eq}, dBA)	Projected Noise Level due to Facility Operation Alone (L_{eq}, dBA [L_{dn}, dBA])	Projected Noise Level due to Facility plus Baseline—Daytime (L_{eq}, dBA)	Projected Noise Level due to Facility plus Baseline—Nighttime (L_{eq}, dBA)
NS-1	Cemetery	60	54	49 [55]	61	55
NS-2	Nearest Residence	68	72	49 [55]	68	72
NS-3	Odessa Café parking lot	65	59	49 [55]	65	59
NS-4	Business	61	65	49 [55]	61	65
NS-5	Residence	45	56	47 [53]	49	57

The operation of the facility should not generate any noise greater than the baseline level at one residential location (NS-2) and should not be more than about 4 dBA above the baseline (ambient) level at the other residential location (NS-5). This increase is below the relative impact criterion of 5 dBA and therefore no relative noise impacts are anticipated.

The projected noise levels from the facility alone range from 47 dBA (L_{eq}) to 49 dBA (L_{eq}) at the locations of interest. These sound levels are similar to a quiet suburban area or an electrical transformer at 100 ft; therefore, the facility plus baseline noise level is either the same or only slightly greater than the baseline noise level. In terms of L_{dn}, these levels would range from 53 L_{dn} to 55 L_{dn} and are well below the absolute noise impact criterion of 65 L_{dn}.

3.9.4.4 No Action Alternative

Construction activities have been conducted at the manufacturing facility site that have generated noise. Under the No Action Alternative there would be no noise impacts or changes to the existing conditions from operation.

3.9.5 Visual and Aesthetic Qualities

3.9.5.1 Existing Environment

No areas of recreational, scenic, or aesthetic importance are located within the proposed project area. There is no formal recreation, hunting, or fishing activity in the proposed project area, and no open space that is available for community use. The land surrounding the proposed project area primarily consists of relatively flat agricultural land and reclaimed mine land.

3.9.5.2 Effects of Project

The manufacturing facility is visible; however, there are no scenic resources on or near the site. As part of the Federal and State air permitting process, an analysis was conducted to evaluate the potential effect of AC manufacturing facility emissions on visibility at one of the closest recreational areas – North Toledo Bend State Park (see Section 3.7.2.3). The results of this analysis indicated no impacts to visibility in this area.

3.9.5.3 No Action Alternative

Construction activities have been conducted at the manufacturing facility site and the facility is visible; therefore impacts to visual resources under the No Action Alternative would be the same as for the proposed action.

3.10 CULTURAL RESOURCES

3.10.1 Existing Environment

Cultural resources investigations for the proposed project area were conducted (Zephyr 2008b, 2008d, 2009e, and 2009g). No sites, structures, or properties listed or eligible for listing in the National Register of Historic Places were identified.

3.10.2 Effects of Project

The LDEQ has a Memorandum of Understanding with the State Historic Preservation Officer (SHPO) that requires the SHPO to review projects that have applied for an LPDES permit. The SHPO determined that no known historic properties would be affected by the proposed project in response to LDEQ's request to review the project (Appendix H). In addition, on December 17, 2009, the SHPO concurred that DOE's obligations under Section 106 of the National Historic Preservation Act were met as a result of their prior review of the proposed project. No effects to cultural resources are anticipated as a result of the proposed project.

3.10.3 No Action Alternative

Under the No Action Alternative, there would be no impacts to cultural resources.

3.11 TRANSPORTATION

This section provides information regarding existing transportation routes and traffic conditions on roadways and intersections in the vicinity of the proposed project and projected impacts to nearby roads and intersections associated with operation of the RREP Facility.

3.11.1 Existing Environment

The primary existing transportation corridors in the vicinity of the proposed project include U.S. Highway 84, State Highway 177, State Highway 1, and Parish Road 604. U.S. Highway 84 runs in a northwest to southeast direction until it intersects Armistead, Louisiana, where the highway changes to a primarily east direction. State Highway 1 runs north south concurrent with U.S. Highway 84 and continues in a southeast direction from Armistead. Parish Road 604 also begins at this intersection and runs due west, serving as the access road for RRM and northern boundary of the AC manufacturing facility site. State Highway 177 generally runs in a northeast to southwest direction, and is located approximately 2 miles west of the site. Figure 3-8 shows the existing road network in the proposed project area.

State Highway 1 in the vicinity of the site is an existing two lane undivided highway with a posted speed limit of 45 miles per hour. U.S. Highway 84 in the vicinity of the site is an existing two lane undivided highway with a posted speed limit of 55 miles per hour. Parish Road 604 is an existing two lane undivided roadway with an unposted speed limit. The intersection of State Highway 1 at U.S. Highway 84/Parish Road 604 is an unsignalized four legged intersection with stop control on the Parish Road 604 and U.S. Highway 84 approaches. All four approaches consist of a single lane.

Level-of-Service (LOS) is a qualitative measure of traffic congestion related to the volume/capacity (v/c) ratio of a particular section of roadway. Categories of LOS range from ratings A through F. The range describes a progressive deterioration from A (which indicates very good operating conditions) through F (which essentially represents the functional failure of the roadway in terms of traffic movement). The majority of the highways in the State have a LOS in the A to C range, meaning they are operating below capacity, resulting in acceptable traffic operation. The majority of congestion problems are occurring in urban areas where v/c ratios are equal to or greater than 1.0 (traffic volumes exceeding highway capacity during peak periods).

According to the Louisiana Statewide Transportation Plan, the area surrounding the proposed project is mapped as LOS A-C, which indicates that the roadways in the vicinity of the proposed project are operating below capacity (DOTD 2009).

3.11.2 Effects of Project

Trucks would be the primary means of transporting materials to and from the AC manufacturing facility. Materials to be transported by truck at the site include lignite coal, ash, lime, product, and treatment chemicals. Parish Road 604, U.S. Highway 84, and State Highway 1 would be the primary roads used by trucks transporting materials to and from the facility. Although trucking activities may occur 7 days a week at times over the course of a year, on an annual basis, the maximum annual truck transport days are projected as follows: 260 each for lignite coal, ash, and lime; and 312 each for AC product and treatment chemicals.

The largest daily number of trucks (59) is associated with coal supply. Two lignite mines are in the vicinity of the AC manufacturing facility, either of which would have good quality lignite for

the AC manufacturing process. The market for Louisiana lignite is local since lignite is a low-rank (low heating value) coal that is generally not shipped long distances. There are several power plants and other industrial facilities in the area that consume Louisiana lignite. The farther of the two mines from the site, Five Forks Mine (FFM), is about 30 miles away by road. This traffic study assumes that the lignite coal is provided from the FFM and therefore all trucks utilize the intersection of State Highway 1 at U.S. Highway 84/Parish Road 604.

Lignite coal, lime, and inorganic salt would be transported to the facility by truck. The estimated numbers of lignite coal, lime, and inorganic salt trucks per day associated with a single production line are as follows:

- 59 lignite coal trucks;
- 2 lime trucks; and
- 1 inorganic salt truck.

Other materials/chemicals used at the facility, such as aqueous ammonia/urea, diesel fuel, cooling tower chemicals (antifoam, biocide, and corrosion inhibitors), laboratory chemicals, and antifreeze would be transported to the facility by truck as needed.

The final product, AC, would be transported out of the facility by truck. By-products such as ash and waste materials (general facility refuse) also would be transported out of the facility by truck. The estimated numbers of AC and ash trucks per day associated with a single production line are as follows:

- 12 AC trucks; and
- 6 ash trucks.

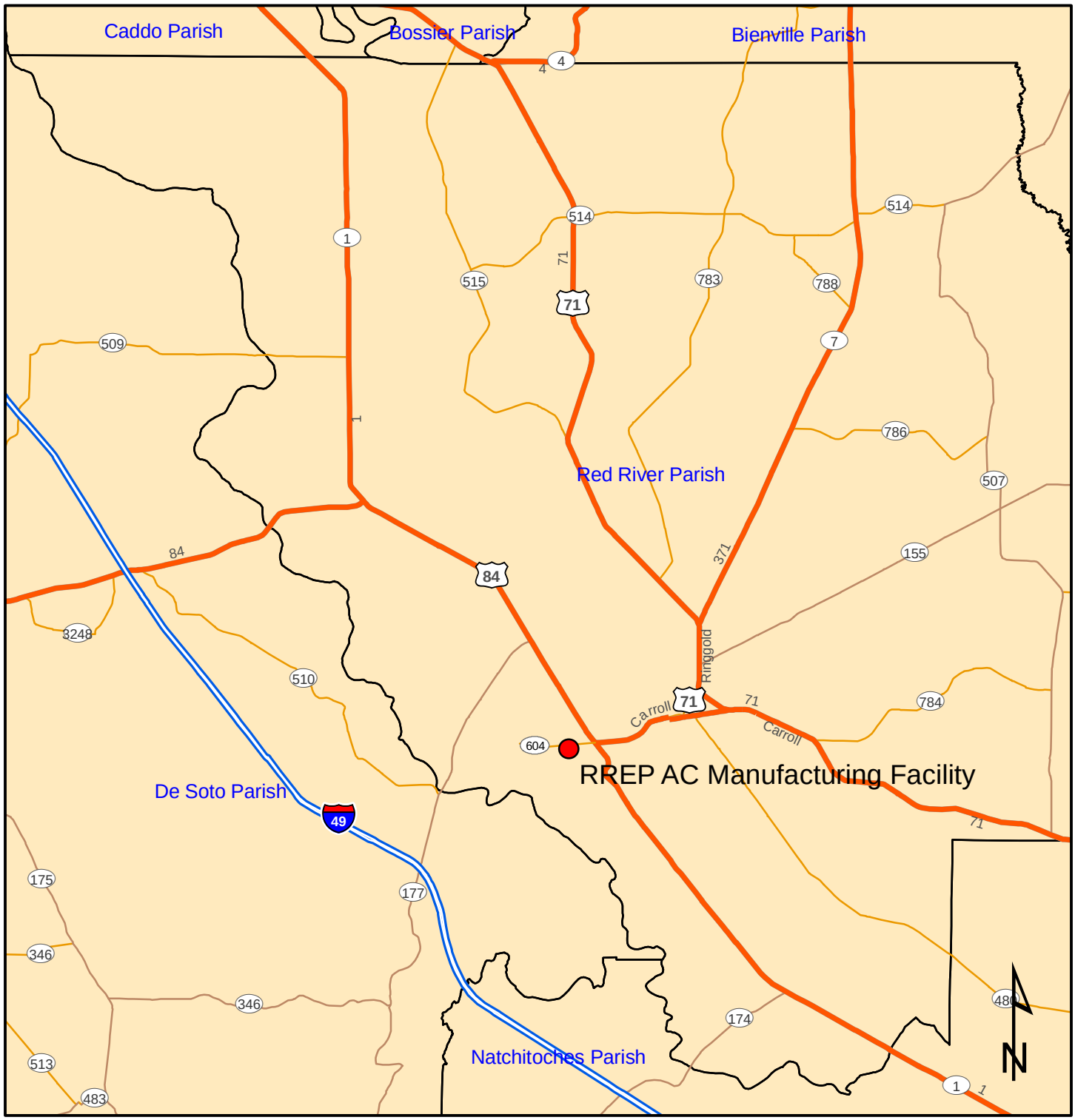
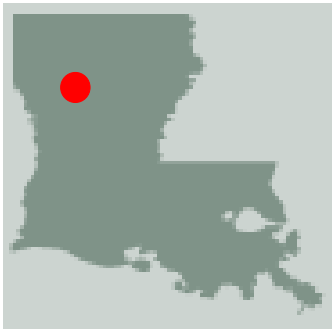


Figure 3-8
Local Road System

Limited Access
Highway
Major Road
Local Road



Sources: ArcGIS 9 ESRI Data & Maps 9.3 Media Kit 2001-2008.

Armistead, Red River Parish, Louisiana

Date: 24 July 2009

Km
0 2.5 5 10

Miles
0 2 4 8

A Traffic Impacts Study was prepared by Neel-Schaffer, Inc. of Shreveport, Louisiana (Neel-Schaffer 2009). The objective of the traffic study was to determine at what LOS the unsignalized intersections of State Highway 1 at U.S. Highway 84/Parish Road 604, Parish Road 604 at the Proposed Main Gate Entrance, and Parish Road 604 at the Proposed Coal Truck Entrance would operate during the AM and PM peaks under existing conditions and upon completion of the RREP plant.

Roadway segment analyses and intersection analyses were conducted for Parish Road 604 and the intersection of State Highway 1 at U.S. Highway 84/Parish Road 604, respectively to evaluate existing conditions, identify operational deficiencies, and to define future facility impacts. These analyses included the identification of peak hour traffic volumes, capacity, and LOS based on existing 2009 conditions. Field observations were conducted in order to collect data relevant to existing roadway, traffic, and intersection control parameters. Roadway information gathered included lane widths, lane assignments, and posted speed limits. Traffic variables analyzed included volume data, vehicle composition, and directional distribution.

3.11.2.1 Construction

The Existing Analyses within the Traffic Impact Study include the increased traffic associated with the construction of the AC manufacturing facility. They indicate that Parish Road 604 and the entrances to Parish Road 604 from the plant would continue to operate at a LOS A. The intersection of Parish Road 604 and U.S. Highway 84 would operate at a LOS B in the AM and a LOS C in the PM. During the AM peak hour, delay at the intersection of State Highway 1 and U.S. Highway 84/Parish Road 604 is negligible for the west approach; however, due to the large volume of vehicles exiting the construction site at 5 PM, the west approach experiences heavy delay at the intersection of State Highway 1 and U.S. Highway 84/Parish Road 604 during the PM peak hour. Local law enforcement is currently controlling traffic through the intersection between the hours of 5 PM – 5:30 PM. The impacts from construction to existing transportation resources are anticipated to be temporary and localized.

3.11.2.2 Operation

The Existing Plus Generated Analyses contained within the Traffic Impacts Study are based on estimated non-construction volumes plus generated traffic once the RREP plant is operational. These analyses indicate that under existing and existing conditions plus operational conditions, Parish Road 604 and the entrances to Parish Road 604 from the RREP plant would operate at a LOS A. It should also be noted that the weight of the trucks transporting materials to/from the RREP plant would not be any heavier than the street-legal trucks currently hauling lignite from the local mine.

The Traffic Impact Study indicates that once the AC manufacturing facility is operational, the east and west approach vehicles at the intersection of State Highway 1 and U.S. Highway 84/Parish Road 604 would only experience a slight delay during the AM and PM peaks. The intersection would operate at a LOS B in both the AM and PM peaks. Additionally, a left turn lane analysis was performed for the intersection to determine whether a left turn lane might be

warranted for the Parish Road 604 approach of the intersection of State Highway 1 at U.S. Highway 84/Parish Road 604. The analyses concluded that the existing plus generated traffic volumes were not large enough to warrant an eastbound left turn lane on Parish Road 604 based on opposing traffic, advancing traffic, and percent left turns.

In summary, based on the analyses performed in the Traffic Impacts Study, it is anticipated that the AC manufacturing facility would not deteriorate the LOS on Parish Road 604 or the intersection of State Highway 1 at U.S. Highway 84/Parish Road 604. In addition, the analysis revealed that the existing geometry of Parish Road 604 at the intersection of State Highway 1 and U.S. Highway 84/Parish Road 604 is adequate to handle projected volumes from the RREP plant.

The DOTD is currently designing plans that would extend U.S. Highway 371 from the existing intersection of State Highway 1 at U.S. Highway 84/Parish Road 604 to Interstate 49 (see Figure 3-9). This future roadway alignment would tie into the existing Parish Road 604 just west of the existing railroad track located west of the State Highway 1 and U.S. Highway 84/Parish Road 604 intersection. From that point, the future U.S. Highway 371 would proceed in a northwesterly direction toward Interstate 49. Parish Road 604 would be realigned to a three legged intersection with U.S. Highway 371 from the south. U.S. Highway 371 would be a two lane highway that would widen out to three lanes at its intersection with Parish Road 604 allowing for a westbound left turn pocket for Parish Road 604. Parish Road 604 would remain a two lane parish road and no geometric improvements are currently planned for the intersection of State Highway 1 at U.S. Highway 84. The addition of U.S. Highway 371 should reduce the coal truck traffic from RRM through the intersection of U.S. Highway 84/Parish Road 604 as the coal trucks would proceed northwest on 371 to Interstate 49 rather than proceeding through the intersection.

3.11.3 No Action Alternative

Construction activities at the manufacturing facility site have had temporary impacts at one intersection during the PM peak hour. Under the No Action Alternative there would be no impacts to transportation or changes to the existing conditions based on operation.

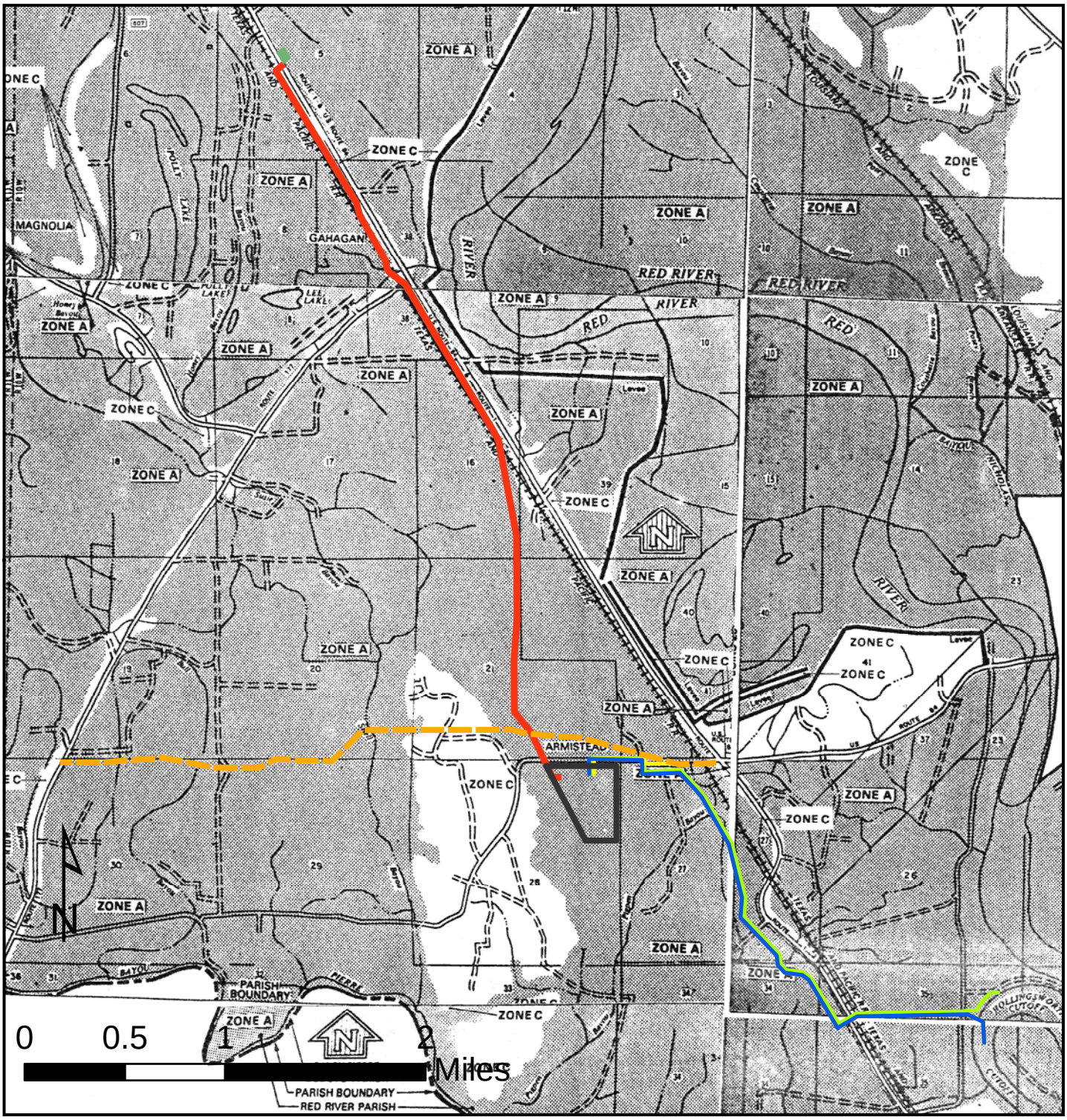


Figure 3-9
Proposed DOTD Location of US Highway 371

- Proposed US Highway 371
- RREP Site Boundary
- Proposed Substation Location
- Proposed Electric Line ROW
- Gas Line
- Oxbow Intake
- Outfall ROW

Sources: FIRM Map 220152 B, 1985.

Armistead, Red River Parish, Louisiana

Date: 30 November 2009

3.12 CUMULATIVE IMPACT ANALYSIS

3.12.1 Introduction

This section describes potential cumulative effects of the proposed action. The primary goal of cumulative impact analysis is to determine the magnitude and significance of the environmental consequences of the proposed action as described in this EA, in the context of the cumulative effects of other past, present, and future actions. This cumulative effects analysis was based on the findings of direct and indirect impacts from the resources analyzed in Sections 3.1 through 3.11 of this EA. This section presents the results of DOE's consideration of those impacts in combination with impacts of other projects in the vicinity of the proposed action that have occurred, are occurring, or might occur in the reasonably foreseeable future. The CEQ regulations require cumulative impact analysis and define it as:

> "…the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

The cumulative impact analysis identifies activities in the region that could interact, or overlap, in time or space with effects from the proposed action. The geographic scope and time frame of the analysis varies depending on the environmental resource category under consideration.

Cumulative impacts can stem from both construction and operations. This analysis differentiates, where appropriate, between cumulative impacts associated with short-term, overlapping construction impacts and longer term impacts due to operations impacts, considering all potential activities including Federal, state, local, and private actions.

3.12.2 Methodology

DOE collected and reviewed information on relevant past, present, and reasonably foreseeable future projects and actions that could result in impacts. DOE then reviewed available analyses and information about those projects to identify which projects were appropriate for inclusion in the cumulative impacts analysis. Reasonably foreseeable actions affecting resources for which the proposed project could incrementally contribute to significant impacts were deemed appropriate for inclusion. The projects considered are discussed in Section 3.12.3. The specific resources potentially impacted by the combination of the proposed project and the projects identified in Section 3.12.3 are discussed in Section 3.12.4.

3.12.3 Projects Considered for the Cumulative Impacts Analysis

This section discusses projects that DOE evaluated for inclusion in this cumulative impacts analysis. The projects described are ongoing or potentially foreseeable future actions and have

the potential to affect resources for which the proposed project could incrementally contribute to significant impacts.

3.12.3.1 Extension of U.S. Highway 371

As described in Section 3.12, the DOTD currently plans to extend U.S. Highway 371 from the existing intersection of State Highway 1 at U.S. Highway 84/Parish Road 604 to State Highway 177/U.S. Highway 371, providing improved access to Interstate 49. This is listed as Louisiana State Project No. 021-06-0001. A sketch showing the proposed location of Highway 371 relative to the RREP site is shown in Figure 3-9. According to the DOTD, road design plans are scheduled to be finalized in August 2010, with ROW clearing beginning in November 2010. The resources potentially impacted by the U.S. Highway 371 project include floodplain, transportation, and air quality.

3.12.3.2 Continued Operation of Adjacent Lignite Mine

The adjacent Oxbow Lignite Mine, known as "the Oxbow mine" and "the Red River mine", is currently owned by the Dolet Hills Lignite Company. It began operation in 1989. Over its life, the production of the Oxbow mine has ranged from a low of 401,000 tons to a high of 1,029,000 tons[18], with 559,000 tons mined in 2008.[19] The entire mine has a recoverable reserve of 180 million tons. Currently the Oxbow mine provides about 15% of the lignite used at Southwestern Electric Power Company's (SWEPCO) Dolet Hills Power Station near Mansfield, Louisiana. The resource potentially impacted by the combination of the adjacent mine with the proposed project is transportation.

3.12.3.3 Phase II of Proposed Project

As described throughout the document, the RREP AC manufacturing facility that is currently being constructed consists of one AC production line. The site, however, is of a sufficient size to allow and is permitted (air and wastewater) for two production lines. The design, capacity, and operation of the second production line would be mostly identical to the first one (some equipment and buildings would be shared.) The resource input requirements and associated outputs for the one and two production lines are summarized in Table 3.20. The infrastructure (gas line, water intake and discharge lines, the electrical substation, etc.) supporting the AC manufacturing facility can accommodate two production lines. There is sufficient landfill capacity to accommodate the solid waste generated by a second production line, and water intake, while doubled, would still be a very small percentage of the overall flow of Red River. The resources potentially impacted by the addition of the second production line are transportation, floodplains, and air quality.

[18] Louisiana Energy Facts Annual, 2007

[19] US DOE, Energy Information Administration, Annual Coal Report 2008

Table 3.20 Maximum Resource Inputs and Outputs for the RREP AC Manufacturing Facility

Resource	One Production Line	Two Production Lines
Inputs		
Coal	389,332 tpy	778,664 tpy
Electricity[a]	56,940 MWh	113,880 MWh
Natural gas	174 MMscf/yr	348 MMscf/yr
Urea (50%)	436,000 gal/yr (solution)	872,000 gal/yr (solution)
Lime	10,150 tpy	20,300 tpy
Inorganic salts	15,330 tpy	30,660 tpy
Water	322 MMgal/yr	644 MMgal/yr
Diesel	1,825 gal/yr	3,650 gal/yr
Outputs		
Product	87,600 tpy	175,200 tpy
Electricity	109,500 MWh	219,000 MWh
Waste solids	17,500 tpy	35,000 tpy
Wastewater discharge	59 MMgal/yr	118 MMgal/yr
Water (evap losses, etc.)	263 MMgal/yr	526 MMgal/yr

[a] Input electricity is internally produced, however these values are based on electricity consumed during operations without considering power produced

3.12.3.4 Other Projects

Inquiries to the Police Juries of Red River and DeSoto Parishes were made to identify projects that could have overlapping construction or operations impacts appropriate for inclusion in this EA. According to the Policy Jury of Red River Parish (Mr. Jessie Davis was contacted November 6, 2009), there are no private projects in the Parish under development. The only government project under development is the U.S. Highway 371 DOTD project. The Police Jury of nearby DeSoto Parish (Melissa Lafette was contacted on November 10, 2009) stated that there are no projects under development, except for work associated with Haynesville Shale. Haynesville Shale is a rock formation mainly composed of consolidated clay-sized particles deposited and buried in northwest Louisiana and East Texas. The Haynesville Shale came into prominence in 2008 as a potentially major shale gas resource. Producing natural gas from the Haynesville Shale involves drilling wells from 10,000 feet to 13,000 feet deep.

In addition, the Coordinating and Development Corporation (CDC), a private, nonprofit, membership-supported corporation that serves the economic, community, and business development needs of 10 parishes in Northwest Louisiana, eight counties in Northeast Texas, and four counties in Southwest Arkansas, was contacted. CDC confirmed that the primary activity is related to the Haynesville Shale project. This project involves a series of drilling sites

spread across the region as well as associated pipelines, lay down areas, and compressor stations. The project is ongoing, in that some of the wells are operational, while others are permitted, but not yet operating. The two closest wells to the AC manufacturing facility site are estimated to be 1 and 1.5 miles away. The main impact from these wells would be related to ground water. The proposed project does not impact ground water, so it was determined that the Haynesville project would not affect resources for which the proposed project could incrementally contribute to significant impacts. Therefore, the Haynesville Shale activities are not evaluated in this cumulative impacts analysis.

3.12.4 Environmental Consequences

This section builds on the results of the resource-specific analyses found in Sections 3.1 through 3.11 of this EA. This environmental consequences discussion is a compilation of potential impacts; that is, the cumulative result of impacts of the proposed action when added to the potential impacts of other projects. Analyses of potential significant (negative) cumulative effects associated with the extension of U.S. Highway 371, the continued operation of the Oxbow Lignite Mine, or the addition of a second AC production line focused on the three resource areas most relevant to potential cumulative impacts: transportation, floodplains, and air quality.

3.12.4.1 Transportation

The addition of U.S. Highway 371 should relieve traffic in the area, since it would provide an additional route to the major highway, Interstate 49. It should also reduce the coal truck traffic from the Oxbow Lignite Mine through the intersection of U.S. Highway 84/Parish Road 604, and subsequently on Highway 1 as the coal trucks would likely proceed northwest on U.S. Highway 371 rather than proceeding through the afore-mentioned intersection.

Truck traffic and worker commuter vehicle traffic associated with the addition of a second production line would have a minor long-term cumulative effect on traffic volume in Red River Parish. The intersections of Parish Road 604 at the Main Gate Entrance and the Coal Truck Entrance would continue to operate at a LOS A, as would Parish Road 604. The intersection of State Highway 1 at US Highway 84/Parish Road 604 would operate at a LOS B in both the AM and PM peaks, which is the same category of LOS as that projected for a single production line, with the east and west approaches experiencing slight to moderate delay. These conclusions are based on unsignalized intersection analyses performed using existing plus the generated traffic volumes (employee and truck traffic) anticipated for a second production line. Based on a left turn lane analyses performed for the Parish Road 604 approach to the intersection of State Highway 1 at US Highway 84/Parish Road 604, no additional geometric improvements would be necessary for the second production line.

3.12.4.2 Floodplains

The potential floodplain impact of the U.S. Highway 371 project would be to provide another buffer (in addition to the levee on the northern portion of the AC manufacturing facility site)

between the site and surface water flow that approaches the site from the north/northwest. The Federal Highway Administration approved the EA prepared for the U.S. Highway 371 project and concluded that the project would not adversely impact the 100 year floodplain.

The Floodplain Section (3.6.1) and Appendix C provide specific discussion on floodplain impacts of the first and second production lines. For the first production line, the conclusion is that the project would not have any significant adverse floodplain impact on the adjacent properties. This is based on modeling conducted and the fact that there is no net fill in the floodplain below the BFE and therefore no adverse effect on the floodplain storage volume. The same analysis and modeling was conducted for the projected cumulative effect of a second production line on the floodplain. With the second line, there would still be no net fill below the BFE, and water flow impacts would be minimal. Floodplain protection measures implemented as part of the construction of the first production line (see Section 3.6.1.2) would also be applied, as necessary, during the construction of the second production line.

3.12.4.3 Air Quality and Climate Change

Air quality impacts during construction of U.S. Highway 371 could possibly overlap spatially and temporally with construction of the second production line sited at the AC manufacturing facility. However, because the specific construction schedule for U.S. Highway 371 and the second production line are not available, it is not possible for DOE to predict at this time whether the construction air quality impacts would be additive. Any impacts from highway construction would be temporary and would not be expected to incrementally contribute to a significant impact on air quality when combined with the AC manufacturing facility. Regarding air quality impacts during operation, an EA and FONSI approved by the Federal Highway Administration on the extension of U.S. Highway 371 concluded that anticipated traffic volumes from the project would not adversely affect the designation of either De Soto or Red River Parish as attainment areas, nor would it exceed the carbon monoxide standards. Impacts from use of the completed highway would not be expected to incrementally contribute to a significant impact on air quality when combined with the RREP AC manufacturing facility.

All required air quality permits (for construction and operation) that have been issued by the LDEQ allow for two production lines. Construction-related emissions and impacts associated with a second production line would be significantly less than that generated with the first production line since most of the site preparation work (e.g., grading) and a significant portion of the facility infrastructure would have been developed with the construction of the first production line. With respect to manufacturing facility operations, the data and impacts described for Air Quality in Section 3.7 are for two production lines. As shown in Tables 3.12, 3.13, and 3.14, the RREP AC manufacturing facility with two production lines would be in compliance with all Federal and state ambient air quality standards. With the construction of the second line, the total AC produced at the RREP AC manufacturing facility would be capable of reducing mercury from approximately 80 GW of coal-fired power plants.

The addition of a second AC production line would have a minor long-term cumulative effect on climate change due to the increased CO_2 emissions from the facility and increased truck traffic.

Due to the increase in truck traffic associated with raw material and product transport, on-road vehicle CO_2 emissions would approximately double.

While the scientific understanding of climate change continues to evolve, the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report has stated that warming of the Earth's climate is unequivocal, and that warming is very likely attributable to increases in atmospheric greenhouse gases caused by human activities (anthropogenic) (IPCC 2007). The IPCC's Fourth Assessment Report indicates that changes in many physical and biological systems, such as increases in global temperatures, more frequent heat waves, rising sea levels, coastal flooding, loss of wildlife habitat, spread of infectious disease, and other potential environmental impacts are linked to changes in the climate system, and that some changes may be irreversible (IPCC 2007).

The release of anthropogenic greenhouse gases and their potential contribution to global warming are inherently cumulative phenomena. Greenhouse gas emissions from the proposed action are relatively small compared to the 8,026 million tons (7,282 million metric tonnes) of CO_2-equivalent greenhouse gases emitted in the U.S. in 2007 (EIA 2007) and the 54 billion tons (49 billion metric tonnes) of CO_2-equivalent anthropogenic greenhouse gases emitted globally in 2004 (IPCC 2007). However, emissions from the proposed action in combination with past and future emissions from all other sources would contribute incrementally to the climate change impacts described above. However, at present there is no methodology that would allow DOE to estimate the specific impacts (if any) this increment of climate change would produce in the vicinity of the facility or elsewhere.

4.0 ENVIRONMENTAL AND REGULATORY REVIEWS

The AC manufacturing facility, linear features (gas pipeline, water intake pipeline, wastewater discharge, and electric utilities line), and water intake pump station and substation are subject to a myriad of Federal and State permitting and regulatory requirements. The primary permitting agencies include EPA, USACE, and LDEQ. The facility and features have been designed and constructed, and would be operated in accordance with applicable regulatory requirements.

4.1 FEDERAL REGULATORY REQUIREMENTS AND COORDINATION

4.1.1 Applicable Federal Regulatory Requirements

- NEPA (42 USC 4321-4370); NEPA Implementing Procedures (10 CFR Part 1021)
- CAA (42 USC 7401 et seq., as amended):
    - Prevention of Significant Deterioration of Air Quality (40 CFR Part 52).
    - State Operating Permit Program (40 CFR Part 70).
    - New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units (40 CFR Part 60, Subpart Db).
    - New Source Performance Standards for Coal Preparation Plants (40 CFR Part 60, Subpart Y).
    - New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII).
    - Compliance Assurance Monitoring (40 CFR Part 64)
- CWA (33 USC 1251 et seq., as amended):
    - Spill Prevention Control and Countermeasures (40 CFR Part 112).
    - Nationwide Permit No. 39 (33 CFR Part 323) (USACE).
- RCRA (42 USC 6921 et seq):
    - Hazardous Waste Management Systems (40 CFR Part 260).
    - Standards Applicable to Generators of Hazardous Waste (40 CFR Part 262).
- Endangered Species Act (16 USC 1531-1543)
- Migratory Bird Treaty Act (16 USC 701, et seq.)
- Farmland Protection Policy Act (7 USC 4201 et. seq., as amended)
- National Historic Preservation Act (16 USC 470 et seq., as amended)
- Archeological Resources Protection Act (16 USC 470)

4.1.2 Federal Agency Correspondence and Coordination

- EPA: Comments by EPA Region 6 on Class I Area Modeling Protocol assumptions received on January 28, 2008 (during the public comment period for the PSD permit).

- USFWS: Letters were submitted to and approved by USFWS indicating that there would be no adverse impacts to T&E species; letters submitted February 20, 2008, December 12, 2008, and March 6, 2009 and authorization issued February 22, 2008, December 17, 2008, and March 10, 2009.
- USACE, Vicksburg (Mississippi) District Office:
    - Pre-Construction Notification(s) submitted to and approved by the USACE stating that the project would be authorized under NWP 39; applications submitted February 21, 2008, December 18, 2008, and March 18, 2009 and authorization issued April 28, 2008, January 20, 2009, and April 7, 2009 (ID No. MVK-2008-234).
    - Levee Crossing Coordination: RREP initiated coordination regarding traversing of the Red River Levee with the USACE as part of the review process by the Red River Parish Levee and Drainage District. On January 6, 2009 and March 24, 2009, RREP received written confirmation from the USACE that the proposed crossing is acceptable.
- USFS: Coordinated with the USFS on the development of Air Dispersion Modeling for Federal PSD Class I Area Analysis; modeling protocol submitted July 3, 2007 and comments received on September 27, 2007. Acceptance of modeling results and finding of no visibility impacts received on January 31, 2008.
- USDA-NRCS: Coordinated with the NRCS by submitting a USDA Farmland Conversion Impact Rating Form (1006).

4.2 STATE REGULATORY REQUIREMENTS AND COORDINATION

4.2.1 Applicable State Regulatory Requirements

- LDEQ:
    - Environmental Assessment – IT Factors Analysis (La. R.S. 30:2018).
    - Air Quality Regulations (LAC 33:III).
    - Solid Waste Regulations (LAC 33:VII).
    - Hazardous Waste Regulations (LAC 33:V Subpart 1).
    - Water Quality Regulations (LAC 33:IX).
        - Groundwater Certification (LAC 33:IX Subpart 1).
        - Spill Prevention and Control (LAC 33:IX Subpart 1).
        - LPDES Stormwater Permits associated with Construction (LAC 33:IX Subpart 2).
        - LPDES Industrial Wastewater Discharge Permits (LAC 33:IX Subpart 2).

Louisiana Environmental Assessment Statement Requirement:

A required part of a permit application for a “major source” in Louisiana is providing responses to the "IT Questions" or “IT Decision” Questionnaire. The "IT Questions" were formulated by the Louisiana Supreme Court in the *Save Ourselves vs. Louisiana Environmental Control Commission*,

452 So. 2d at 1152 (La. 1984). The responses are intended to assure the LDEQ that the project and the site are suitable. The five questions are as follows:

I. Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

II. Does a cost-benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?

III. Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

IV. Are there alternative sites which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

V. Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

RREP submitted its "IT Decision" Questionnaire responses as part of the original air permit application package for the AC manufacturing facility, and submitted an update in March 2009 as part of the LPDES permitting process. As part of the air permit package issued by LDEQ, in the Basis for Decision, they concluded that "Based on a careful review and evaluation of the entire administrative record, which includes the permit applications, Environmental Assessment Statement, the proposed permits, and all public comments, the Louisiana Department of Environmental Quality…finds that the proposed permits have minimized or avoided potential and real adverse environmental impacts to the maximum extent possible and that social and economic benefits of the proposed AC manufacturing facility outweigh adverse environmental impacts" (LDEQ 2008).

4.2.2 State Agency Correspondence and Coordination

- LDEQ:
    - LPDES Water Discharge Permit, Red River Environmental Products, LLC, issued August 11, 2009.
    - "LPDES Permit Application to Discharge Wastewater From Industrial Facilities", ADA-ES Inc., Red River Environmental Products, prepared by Zephyr Environmental Corporation, March 2009.
    - Application for Groundwater Certification submitted on July 31, 2007 and issued August 22, 2007.
    - Water Quality Certification, applications submitted on April 3, 2008, December 22, 2008 and March 18, 2009 and issued April 18, 2008, January 16, 2009, and April 2, 2009.

- "Notice of Intent, Storm Water General Permit for Construction Activities Greater than 5 Acres", BE&K Engineering, submitted March 18, 2008 (SWPPP prepared but not submitted as per general permit) issued June 10, 2008; "Stormwater Pollution Prevention Plan", BE&K Engineering, Project Name: Red River Environmental Products Activated Carbon Facility, March 18, 2008.
- LDEQ PSD Permit No. PSD-LA-727 and Initial Part 70 Air Operating Permit No. 2420-00027-VO, issued May 28, 2008.
- Application for PSD Permit and Part 70 Operating Permit submitted to LDEQ by Zephyr Environmental Corporation, July 2007.

- LSHPO:
  - Letter from AR Consultants, Inc., to Louisiana Division of Historic Preservation, February 6, 2009, and SHPO Concurrence, March 6, 2009.
  - Letter from LDEQ to SHPO, March 10, 2009, and SHPO Concurrence, April 6, 2009.
  - E-mail from DOE to SHPO on December 14, 2009 and SHPO concurrence, December 17, 2009.
- DOTD:
  - Levee Crossing Coordination: RREP initiated coordination regarding traversing Red River Levee as part of the review process by the Red River Parish Levee and Drainage District. On November 17, 2008 and March 10, 2009, RREP received written confirmation from DOTD that the proposed Water Line crossing of the Red River Levee and Parish Road 601 via overtopping is acceptable.
- Louisiana Office of Conservation:
  - Phase III Bond Release Approval, Supplemental Order No. LSM-1-A (08-1), May 9, 2008.
  - Land Use Change Approval, Supplemental Order No. LSM-1-A (07-3), September 25, 2007.

4.3 LOCAL REGULATORY REQUIREMENTS AND COORDINATION

- Red River Parish Levee Board & Drainage District: RREP initiated coordination regarding traversing of the Red River Levee. On November 25, 2008 and March 24, 2009, RREP received written confirmation from the Red River Parish Levee Board & Drainage District that the proposed crossing is acceptable.
- Red River Parish Police Jury, Resolution on Land Use Approval, February 20, 2009

5.0 LIST OF PREPARERS

U.S. Department of Energy

Sharon Thomas
NEPA Document Manager
M.E.M., Environmental Management
B.S., Marine Science

Matt McMillen
NEPA Compliance Officer
M.S., Natural Resources Development
B.S., Environmental Science

Zephyr Environmental Corporation:

Jennifer Sharp Seinfeld, P.E.
Principal
B.S., Chemical Engineering
Maryland Chemical Engineering License #19433

Brad W. Watson
Natural Resources Manager
Associate of Applied Science (Specialization in Environmental Compliance)

Clay V. Fischer
Natural Resources Project Manager
M.S., Range and Wildlife Management
B.A., Wildlife Biology

Patrick A. Kainer
Staff Scientist
B.S., Wildlife and Fisheries Sciences

Louis A. Corio
Senior Project Scientist
M.S., Meteorology
B.S., Meteorology

Bonnie S. Blam, CSP
Senior Project Scientist
M.B.A., Management
B.S., Chemical Engineering

David Mahler
Senior Project Manager
B.S. Chemical Engineering
Maryland Chemical Engineering License #36105

David Sorrells, P.E.
Senior Project Manager
B.S. Industrial Engineering
Texas Professional Engineering License #42153

PBS&J Environmental Consulting:

Paul A. Jensen, Ph.D., P.E., BCEE
Vice President and Principal Technical Professional
Ph.D. Civil and Environmental Engineering
M.S. Physical Oceanography
B.S. Maritime Transportation

Steven R. McVey, PG, CAPM
Group Manager
B.S., Geology

Angela G. Bulger
Project Manager
M.S., Environmental Ecology
B.S., Systematics and Ecology

ADA Carbon Solutions, LLC:

Sheila Glesmann
Senior Vice President, Development
B.S., Mechanical Engineering
California Mechanical Engineering license #28911, 1994

Andrea Adams
Environmental and QA Manager
M.S., Atmospheric Sciences
B.S., Atmospheric Sciences

Darren Meadows
Engineering Manager
B.S. Environmental Engineering
M.E. Hazardous Waste Engineering
Registered Professional Engineer, New Mexico, License #13876

Harris Group, Inc.

James Eck, P.E.
Project Manager
B.S., Mechanical Engineering
Registered Professional Engineer, Colorado, License #28028

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2008b. *Environmental Constraints Analysis South Parish 604 Site, Coushatta, Louisiana*, January 2008.

2008c. *Red River Environmental Products, Pre-Construction Notification Submittal*, February 21, 2008.

2008d. *Environmental Constraints Analysis, 130-Acre Yarbrough Tract, March 2008.*

2008e. *Baseline Noise Monitoring Report for Red River Environmental Products Louisiana Site and Surrounding Areas*, September 2008.

2008f. *Supplemental Pre-Construction Notification Submittal*, December 18, 2008.

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2009d. *Phase I Environmental Site Assessment for Identifying Recognized Environmental Conditions, 3.7-Acre Site Parish Road 604*, May 2009.

2009e. *Environmental Constraints Analysis, 3.7-Acre Site*, May 2009.

2009f. *Phase I Environmental Site Assessment for Identifying Recognized Environmental Conditions, Substation Site*, July 2009.

2009g. *Environmental Constraints Analysis, Substation Site*, July 2009.

APPENDIX A

FARMLAND CONVERSION IMPACT RATING FORMS

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 10/30/09
Name Of Project Red River Environmental Products, LLC	Federal Agency Involved Department of Energy
Proposed Land Use Industrial-Main Site	County And State Red River Parish, Louisiana
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 10/21/09

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).* Yes ☑ No ☐ | Acres Irrigated 0 | Average Farm Size 447

Major Crop(s) Corn, Cotton, Soybean	Farmable Land In Govt. Jurisdiction Acres: 153,705 % 64	Amount Of Farmland As Defined in FPPA Acres: 153,705 % 64
Name Of Land Evaluation System Used Red River Parish LESA	Name Of Local Site Assessment System None	Date Land Evaluation Returned By NRCS 10/30/09

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	59.4			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	59.4	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	59.4			
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.040			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	27.0			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	77	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use		10			
2. Perimeter In Nonurban Use		8			
3. Percent Of Site Being Farmed		2			
4. Protection Provided By State And Local Government		0			
5. Distance From Urban Builtup Area		10			
6. Distance To Urban Support Services		0			
7. Size Of Present Farm Unit Compared To Average		10			
8. Creation Of Nonfarmable Farmland		0			
9. Availability Of Farm Support Services		5			
10. On-Farm Investments		1			
11. Effects Of Conversion On Farm Support Services		0			
12. Compatibility With Existing Agricultural Use		0			
TOTAL SITE ASSESSMENT POINTS	160	46	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	77	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	46	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	123	0	0	0

Site Selected: See Map | Date Of Selection 10/21/09 | Was A Local Site Assessment Used? Yes ☐ No ☒

Reason For Selection: The main facility site (previously a portion of the Red River Mining Company Oxbow Lignite Surface Mine) was selected primarily for easy access to coal reserves and existing infrastructure. The substation and intake water pump sites were chosen for their locations adjacent to an overhead transmission line and a water source. Construction of the facility, substation, and intake pump sites will result in 59.4 acres, 2.914 acres and 0.15 acres respectively of direct impacts to farmland.

(See Instructions on reverse side)

Form AD-1006 (10-83)

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U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 10/30/09
Name Of Project Red River Environmental Products, LLC	Federal Agency Involved Department of Energy
Proposed Land Use Industrial-Substation Site	County And State Red River Parish, Louisiana
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 10/21/09

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☑	No ☐	Acres Irrigated 0	Average Farm Size 447
Major Crop(s) Corn, Cotton, Soybean	Farmable Land In Govt. Jurisdiction Acres: 153,705	% 64	Amount Of Farmland As Defined in FPPA Acres: 153,705	% 64
Name Of Land Evaluation System Used Red River Parish LESA	Name Of Local Site Assessment System None		Date Land Evaluation Returned By NRCS 10/30/09	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	2.9			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	2.9	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	2.9			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0019			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	27.0			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	76	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	76	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	76	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection: The main facility site (previously a portion of the Red River Mining Company Oxbow Lignite Surface Mine) was selected primarily for easy access to coal reserves and existing infrastructure. The substation and intake water pump sites were chosen for their locations adjacent to an overhead transmission line and a water source. Construction of the facility, substation, and intake pump sites will result in 59.4 acres, 2.914 acres and 0.15 acres respectively of direct impacts to farmland.

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 10/30/09
Name Of Project Red River Environmental Products, LLC	Federal Agency Involved Department of Energy
Proposed Land Use Industrial-Intake Pump Site	County And State Red River Parish, Louisiana
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 10/21/09

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☑	No ☐	Acres Irrigated 0	Average Farm Size 447
Major Crop(s) Corn, Cotton, Soybean	Farmable Land In Govt. Jurisdiction Acres: 153,705	% 64	Amount Of Farmland As Defined in FPPA Acres: 153,705	% 64
Name Of Land Evaluation System Used Red River Parish LESA	Name Of Local Site Assessment System None		Date Land Evaluation Returned By NRCS 10/30/09	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	0.15			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	~~0~~ 0.15	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0.15			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.000098			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	63.0			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	100	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	100	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	100	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection: The main facility site (previously a portion of the Red River Mining Company Oxbow Lignite Surface Mine) was selected primarily for easy access to coal reserves and existing infrastructure. The substation and intake water pump sites were chosen for their locations adjacent to an overhead transmission line and a water source. Construction of the facility, substation, and intake pump sites will result in 59.4 acres, 2.914 acres and 0.15 acres respectively of direct impacts to farmland.

(See Instructions on reverse side)

Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 10/21/09	4. Sheet 1 of 1
1. Name of Project Red River Environmental Products, LLC	5. Federal Agency Involved Department of Energy	
2. Type of Project Industrial	6. County and State Red River Parish, Louisiana	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 10/21/09	2. Person Completing Form Marc L Bridelin
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐	4. Acres Irrigated 0	Average Farm Size 447
5. Major Crop(s) Corn, Cotton, Soybeans	6. Farmable Land in Government Jurisdiction Acres: 153,705 % 64	7. Amount of Farmland As Defined in FPPA Acres: 153,705 % 64
8. Name Of Land Evaluation System Used Red River Parish LESA	9. Name of Local Site Assessment System NONE	10. Date Land Evaluation Returned by NRCS 11/06/09

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	0.11			
B. Total Acres To Be Converted Indirectly, Or To Receive Services	3			
C. Total Acres In Corridor	3	0	0	0
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	0.11			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.00007			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	13			
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	85			
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points			
1. Area in Nonurban Use	15	10		
2. Perimeter in Nonurban Use	10	8		
3. Percent Of Corridor Being Farmed	20	0		
4. Protection Provided By State And Local Government	20	0		
5. Size of Present Farm Unit Compared To Average	10	5		
6. Creation Of Nonfarmable Farmland	25	0		
7. Availability Of Farm Support Services	5	5		
8. On-Farm Investments	20	5		
9. Effects Of Conversion On Farm Support Services	25	0		
10. Compatibility With Existing Agricultural Use	10	1		
TOTAL CORRIDOR ASSESSMENT POINTS	160	34	0	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V)	100			
Total Corridor Assessment (From Part VI above or a local site assessment)	160	34	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260			

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
A	3	10/21/09	YES ☐ NO ☑

5. Reason For Selection:

The proposed ROW corridors were chosen based upon the shortest travel distance, landowner willingness, and environmental factors such as wetlands.

Signature of Person Completing this Part: Clay V. Fischer

DATE 10/21/09

NOTE: Complete a form for each segment with more than one Alternate Corridor

APPENDIX B

USFWS DOCUMENTATION

February 20, 2008

RECEIVED
FEB 21 2008
FISH & WLDL. SERV
LAFAYETTE, LA.

Mr. Jim Boggs
Field Supervisor
U.S. Fish and Wildlife Services
Lafayette Ecological Services Field Office
646 Cajundome Boulevard, Suite 400
Lafayette, LA 70506

Re: Red River Environmental Products, LLC
South Parish Road 604 Site, Coushatta, Red River Parish, Louisiana

Dear Mr. Boggs:

On behalf of our client Red River Environmental Products, LLC (RREP), Zephyr Environmental Corporation (Zephyr) is forwarding this letter to fulfill the requirements of the Nationwide Permitting Process regarding consultation with your agency in regard to the potential occurrence of threatened/endangered species and/or their habitat on the above referenced site.

SITE DESCRIPTION

The applicant proposes to construct an industrial facility on the approximately 59-acre subject site. The facility will include a plant site, access roadway, water intake structure and waterline, gas line, electric line, and potable waterline right-of-ways.

The proposed industrial facility will be located between one-half and one mile west of Armistead (Harmon LA, USGS quadrangle), Louisiana on the south side of Parish Road 604, and approximately three miles west of the current Red River channel (See Figures 1 and 2 in Appendix A). The plant site will be approximately 1/4 mile west of the Missouri Pacific Railroad and State Highway 1. The site is currently within the Red River Mine (RRM) Permit boundary. The plant site consists of flat terrain which was recently mined and reclaimed as part of normal Red River Mine operations (Appendix B, Photographs B-1 and B-2). Currently the plant site exhibits bare ground and clumps of Bermuda grass and Johnson grass. Pig Pen Bayou outlines the northern and eastern boundaries of the plant site. An existing pipeline right-of-way (ROW) (Exxon) bounds the plant site to the west. The current mine pit bounds the site to the south (Appendix B, Photograph B-3). The approximate geographic coordinate of the plant site is latitude 32° 00' 08.87" N and longitude 93° 23' 34.14" W.

Pig Pen Bayou is a relatively open stream corridor. It has a defined bed-and-bank with an ordinary high water mark (OHWM) of approximately 40 feet and is considered perennial/intermittent. Vegetation along the stream channel in the area of South Parish Road 604 consists of cattail (*Typha latifolia*), bushy bluestem (*Andropogon glomeratus*), and black willow (*Salix nigra*) (Appendix B, Photograph B-4). Annual ragweed (*Ambrosia artemisiifolia*) is the dominant species just above the ordinary high water mark. Elsewhere, Pig Pen Bayou exhibits very little vegetation as it has recently been re-routed as a part of normal mine operations (Appendix B, Photograph B-5). An isolated segment of Pig Pen Bayou (Appendix B,

Photograph B-6) will be traversed by a water supply pipeline ROW which will extend approximately two miles south from the plant site to the E6 sediment containment pond and terminate at an intake structure on the containment pond (Appendix B, Photograph B-7).

Threatened and Endangered Species

Federally threatened (T) and endangered (E) species listed by the U.S. Fish and Wildlife Service (USFWS) as having the potential to occur in Red River Parish are *Scaphirhynchus albus* (pallid sturgeon, E) and *Sterna antillarum* (least tern, E).

The ***pallid sturgeon*** is a large, primarily cartilaginous fish with a flattened snout and a long, slender tail base with bony plates. They are toothless and the mouth is located on the underside of the snout. These fish are typically colored gray dorsally and white ventrally and can weigh up to 86 pounds. The pallid sturgeon is similar in appearance to the shovelnose sturgeon; however, the shovelnose sturgeon is typically darker in color with bony plates along the belly.

These fish are generally limited to the Missouri and Mississippi Rivers with some occurrences in the Yellowstone and Atchafalaya rivers. Information on the pallid sturgeon is limited primarily due to their rarity. They are known to prefer the bottoms of large, swift, turbid rivers with a sandy-substrate. They have been found at depths ranging from 1-7 meters. Spawning is believed to occur between June and August depending upon flood events. Pallid sturgeons primarily eat smaller fish and aquatic invertebrates.

Least terns are small shorebirds, measuring about 21-24 cm long with a 51 cm wingspread. Sexes appear similar, with a black-capped crown, white forehead, grayish back and dorsal wing surface, white undersurface; legs are a variation of orange and yellow colors depending on the sex, and a black-tipped bill whose color also varies depending on sex.

The interior least tern is piscivorous, feeding in shallow waters of rivers, streams and lakes. Other least terns also feed on crustaceans, insects, mollusks and annelids. Terns usually feed close to their nesting sites. Terns nesting at sand and gravel pits and other artificial habitats may fly up to 3.2 km to fish.

Breeding colonies or terneries are usually small (up to 20 nests) with nests spaced far apart. Egg-laying and incubation occur from late May to early August, depending on the geographical location and availability of habitat.

The interior least tern is migratory and historically bred along the Mississippi and Red River systems of central Louisiana. Distribution generally is restricted to less altered river segments.

The riverine nesting areas of interior least terns are sparsely vegetated sand and gravel bars within a wide unobstructed river channel, or salt flats along lake shorelines. Nesting locations usually are at the higher elevations and away from the water's edge because

nesting starts when the river flows are high and small amounts of sand are exposed. The size of nesting areas depends on water levels and the extent of associated sandbars.

Zephyr completed a pedestrian survey of the plant site and nearby areas to determine if habitat likely to support the two federally-listed T&E species for Red River Parish exists. The T&E species habitat survey was completed by a qualified wildlife biologist. Data were collected to describe resident vegetation communities and assess the potential for occurrence of T&E species.

The vegetative community observed within the survey area is limited to areas immediately adjacent to Pig Pen Bayou. The majority of the site is bare ground. The site does not possess habitat that supports the pallid sturgeon or the interior least tern. No T&E species were observed within the survey area during the survey. It is Zephyr's opinion that construction of the proposed project will not adversely affect either listed species.

Should you have any questions please contact me at 512-636-0645 (mobile) or 512-879-6629 (office) or contact Ms. Jennifer Seinfeld at 410-312-7915. Construction is scheduled to begin on this project as early as April 4, 2008 unless you contact us with questions or concerns. Thank you for your assistance in this matter.

Sincerely,
Zephyr Environmental Corporation

Clay V. Fischer
Natural Resources Project Manager

cc: Ms. Jennifer Sharp Seinfeld, P.E., Zephyr Environmental Corporation
Ms. Andrea Adams, ADA-ES, Inc.
Ms. Sheila Glesmann, Emission Strategies, Inc.

This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act). The project, as proposed,
(✓) Will have no effect on those resources
( ) Is not likely to adversely affect those resources.
This finding fulfills the requirements under Section 7(a)(2) of the Act.

Feb 22 2008
Date

Acting Supervisor
Louisiana Field Office
U.S. Fish and Wildlife Service

zephyr environmental corporation

zephyr environmental corporation

consulting ♦ training ♦ data systems

December 12, 2008

This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act). The project, as proposed,
( ) Will have no effect on those resources
(X) Is not likely to adversely affect those resources.
This finding fulfills the requirements under Section 7(a)(2) of the Act.

Acting Supervisor Date
Louisiana Field Office
U.S. Fish and Wildlife Service

Mr. Jim Boggs
Field Supervisor
US Fish and Wildlife Service
Lafayette Ecological Services Field Office
646 Cajundome Boulevard
Suite 400
Lafayette, LA 70506

Re: **Red River Environmental Products, LLC, Coushatta, Red River Parish, Louisiana**

Dear Mr. Boggs:

On behalf of our client Red River Environmental Products, LLC, (RREP), Zephyr Environmental Corporation (Zephyr) is submitting this supplemental consultation letter to fulfill the requirements of the Nationwide Permitting process, specifically General Condition 17 regarding consultation with your agency in regards to the potential occurrence of threatened/endangered species and or their habitat on the above referenced site. The applicant proposes to construct a waterline and intake structure associated with an industrial facility which your office has previously reviewed and concurred as unlikely to adversely affect any listed species. The previous approval letter is included in Appendix C.

SITE DESCRIPTION

The proposed Water Line ROW and intake structure will extend from the plant site (immediately south of Parish Road 604) approximately 2.5 miles southeast to Hollingsworth Cutoff (an oxbow of the Red River) (Figures 1 and 2, Appendix A). The proposed Water Line ROW will generally parallel Pig Pen Bayou along the southern bank while traversing southeast towards Hollingsworth Cutoff. Three crossings of Pig Pen Bayou via trenching will be required. Pig Pen Bayou is a relatively open stream corridor. It has a defined bed-and-bank with an ordinary high water mark (OHWM) of approximately 40 feet and is considered perennial/intermittent. Vegetation along the stream channel consists of cattail (*Typha latifolia*), bushy bluestem (*Andropogon glomeratus*), and black willow (*Salix nigra*) (Appendix B, Photograph 1). Annual ragweed (*Ambrosia artemisiifolia*) is the dominant species just above the ordinary high water mark. Recent re-routing of Pig Pen Bayou as a part of normal mine operations at Red River Coal Mine has resulted in certain portions exhibiting very little vegetation (Appendix B, Photograph 2). Approximately 9500 feet southeast of the plant site, the Water Line ROW will initiate an eastern path across Pig Pen Bayou via trenching and the Union Pacific Railroad and Highway 1 ROW's via directional bore. Current conditions exhibited in this portion of the proposed Water Line ROW are described as agricultural hay pasture between Highway 1 and Hollingsworth Cutoff to the east (Photograph 3, Appendix B).

The proposed intake pump will be located on the bank of Hollingsworth Cutoff (Photograph 4, Appendix B). The intake line from the structure reaches approximately 750 feet from the bank into the open water of Hollingsworth Cutoff. Conditions immediately adjacent to the cutoff are

described as level and dominated by woody species such as hackberry (Celtis laeviegata), American elm (Ulmus americana), and cedar elm (U. crassiafolia) with an understory of Johnsongrass (Sorghum halepense), greenbriar (Smilax bona-nox), goldenrod (Solidago sp.), and poison ivy (Toxicodendron radicans). A steep slope separates the intake pump from the cutoff and below the slope; vegetation becomes less dense and is dominated by herbaceous species. Near normal water level of the oxbow, buttercup (Ranunculus sp.), smartweed (Polygonum sp.), and button bush (Cephalanthus occidentalis) dominate. Below normal water level, butter cup and water hyacinth (Eichornia crassipes) dominate out to a depth of approximately 1 foot at which point floating mats of water hyacinth and open water dominate. The approximate geographic coordinate of the intake pump is latitude 32° 1' 10.86" N and longitude 93° 23' 45.03" W. Hollingsworth Cutoff exhibits steep banks and fairly slow water circulation with a maximum depth of approximately 14-feet at normal water level. Listed species potentially occurring in the area are discussed below.

Threatened and Endangered Species

Federally threatened (T) and endangered (E) species listed by the U.S. Fish and Wildlife Service (USFWS) as having the potential to occur in Red River Parish are *Scaphirhynchus albus* (pallid sturgeon, E) and *Sterna antillarum* (least tern, E).

> The ***pallid sturgeon*** is a large, primarily cartilaginous fish with a flattened snout and a long, slender tail base with bony plates. They are toothless and the mouth is located on the underside of the snout. These fish are typically colored gray dorsally and white ventrally and can weigh up to 86 pounds. The pallid sturgeon is similar in appearance to the shovelnose sturgeon; however, the shovelnose sturgeon is typically darker in color with bony plates along the belly.
>
> These fish are generally limited to the Missouri and Mississippi Rivers with some occurrences in the Yellowstone and Atchafalaya rivers. Information on the pallid sturgeon is limited primarily due to their rarity. They are known to prefer the bottoms of large, swift, turbid rivers with a sandy-substrate. They have been found at depths ranging from 1-7 meters. Spawning is believed to occur between June and August depending upon flood events. Pallid sturgeons primarily eat smaller fish and aquatic invertebrates.
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> ***Least terns*** are small shorebirds, measuring about 21-24 cm long with a 51 cm wingspread. Sexes appear similar; with a black-capped crown, white forehead, grayish back and dorsal wing surface, white undersurface, legs are a variation of orange and yellow colors depending on the sex, and a black-tipped bill whose color also varies depending on sex.
>
> The interior least tern is piscivorous, feeding in shallow waters of rivers, streams and lakes. Other least terns also feed on crustaceans, insects, mollusks and annelids. Terns usually feed close to their nesting sites. Terns nesting at sand and gravel pits and other artificial habitats may fly up to 3.2 km to fish.

Breeding colonies or terneries are usually small (up to 20 nests) with nests spaced far apart. Egg-laying and incubation occur from late May to early August, depending on the geographical location and availability of habitat.

The interior least tern is migratory and historically bred along the Mississippi and Red River systems of central Louisiana. Distribution generally is restricted to less altered river segments.

The riverine nesting areas of interior least terns are sparsely vegetated sand and gravel bars within a wide unobstructed river channel, or salt flats along lake shorelines. Nesting locations usually are at the higher elevations and away from the water's edge because nesting starts when the river flows are high and small amounts of sand are exposed. The size of nesting areas depends on water levels and the extent of associated sandbars.

Zephyr completed a pedestrian survey of the waterline route and nearby areas to determine if habitat likely to support the two federally-listed T&E species for Red River Parish exists. The T&E species habitat survey was completed by a qualified wildlife biologist. Data were collected to describe resident vegetation communities and assess the potential for occurrence of T&E species.

The vegetative community observed within the survey area is limited to those areas immediately adjacent to the plant site, waterline ROW, and intake structure. No areas within the project footprint possess habitat that supports the pallid sturgeon or the interior least tern. No T&E species were observed within the survey area during the survey. It is Zephyr's opinion that construction of the proposed project will not adversely affect either listed species.

We believe this letter summarizing our survey fulfills the requirements of General Condition 17 of our Nationwide Permit. Should you have any questions please contact me at 512-636-0645 (mobile) or 512-879-6629 (office) or my colleague Jennifer Seinfeld at 410-312-7915. If you concur with our analysis, please indicate as such by signing below and faxing the signed copy to me at (512) 329-8253. Thank you for you assistance in this matter.

Sincerely,
Zephyr Environmental Corporation

Clay V. Fischer
Natural Resources Project Manager

cc: Ms. Jennifer Seinfeld, Environmental Corporation, Baltimore, Maryland
Ms. Andrea Adams, ADA-ES, Littleton, Colorado

zephyr environmental corporation

zephyr environmental corporation

consulting ♦ training ♦ data systems

6 March 2009

Mr. Jim Boggs
Field Supervisor
US Fish and Wildlife Service
Lafayette Ecological Services Field Office
646 Cajundome Boulevard
Suite 400
Lafayette, LA 70506

This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act). The project, as proposed,
( ) Will have no effect on those resources
(✓) Is not likely to adversely affect those resources.
This finding fulfills the requirements under Section 7(a)(2) of the Act.

Deborah A. Fuller March 10, 2009

Acting Supervisor — Date
Louisiana Field Office
U.S. Fish and Wildlife Service

Re: Red River Environmental Products, LLC, Coushatta, Red River Parish, Louisiana

Dear Mr. Boggs:

On behalf of our client Red River Environmental Products, LLC, (RREP), Zephyr Environmental Corporation (Zephyr) is submitting this letter to fulfill the requirements of the Nationwide Permitting process, specifically General Condition 17 regarding consultation with your agency in regards to the potential occurrence of threatened/endangered species and or their habitat on the above referenced site. The applicant proposes to construct a substation, electric line and outfall structure associated with an industrial facility which your office has previously reviewed and concurred as unlikely to adversely affect any listed species.

SITE DESCRIPTION

Substation And Electric Line Right-of-Way (Row)

The substation site is located northwest of Armistead, Louisiana on the east side of US Highway 1. Immediately north of the intersection of US Highway 1 and the Cleco Electric main line, a substation with dimensions of approximately 235 x 120-feet will be constructed to route power to the RREP site (Figure 1 Appendix A). Access to the substation will be from US Highway 1 via a 107 x 20-feet paved roadway. The majority of the substation site has been cleared and is actively farmed. The substation site is bounded to the south by an existing Cleco Transmission line and to the west by US Highway 1; a CrossTex pipeline ROW and a transmission line ROW also traverse the substation site along the western boundary. A narrow portion of the substation site situated near the Cleco Transmission Line is densely vegetated with annual ragweed (*Ambrosia annuus*), yankee weed (*Eupatorium compositifolium*), and sunflower (*Helianthus annuus*). A man-made non-jurisdictional swale which carries stormwater from the farm field to the bar-ditch along the east side of US Hwy 1 traverses the substation site from east to west and is located immediately north of the Cleco Transmission Line. The approximate geographic coordinate of the center of the Substation site is N 32.05579 and W 93.41745.

The Substation site is primarily developed for farming with the exception of a narrow portion of the southern boundary which has been graded to allow drainage of stormwaters offsite or is too near the Cleco Transmission Line to farm. At the time of investigation, a majority of the substation site exhibited almost fallow conditions with only recent sprouts of winter wheat and scattered weeds visible. The narrow unfarmed portion of the substation site situated near the

Cleco Transmission Line exhibited dense frost-killed vegetation dominated by annual ragweed (*Ambrosia annuus*), yankee weed (*Eupatorium compositifolium*), and sunflower (*Helianthus annuus*). The man-made non-jurisdictional swale generally exhibits large areas of bare ground with scattered smartweed (*Polygonum* sp.) and dock (*Rumex* sp.) in the vicinity of US Highway 1.

The proposed electric line ROW will begin approximately 4 miles north of the plant site at the substation. From the substation, the proposed electric line ROW will traverse to the west side of US Highway 1, and then parallel an existing electric ROW which generally parallels the Union Pacific Railroad ROW on a 30-foot offset to the west. At Honey Bayou, the electric line ROW will jog slightly west to a natural opening within the canopy in order to avoid the need the removal of cypress trees from the ROW. Approximately 11,500 feet southeast of the starting point, the ROW will re-direct in a more southerly heading to avoid impacts to forested wetlands associated with an unnamed abandoned slough of the Red River. For approximately 2,500 feet, the proposed electric line ROW will skirt the feature to the west. At such point, it will intersect with the previously existing electric line ROW and continue due south on a 30-foot offset to the east of the existing electric line ROW for approximately 6,700 feet to the RREP site.

Outfall Line ROW

As proposed, the outfall line ROW will parallel (within the same trench) the authorized intake water line ROW (proposed in previous submittal) from the RREP facility across Pig Pen Bayou (via trenching) and Parish Road 604 via directional drill, then east along Parish Road 604 and back across Parish Road 604 (via directional drill) Pig Pen Bayou (via trenching), then southeast for approximately 9000 feet along the west bank of Pig Pen Bayou, east across Pig Pen Bayou (via trenching), then east under the Union Pacific Railroad ROW and US Highway 1 (via directional drill) (Figure 2 Appendix A). Pig Pen Bayou exhibits a defined bed and bank condition with an OHWM of 40 feet at all points traversed by the propose ROW. From US Highway 1 the outfall line ROW will continue to parallel the intake water line ROW and traverse Parish Road 601 and the Red River levee via overtopping. Approximately 50 feet east of the levee, the outfall line ROW will jog north across a nearby property line and then continue northeast along the Hollingsworth Cutoff top bank to the Red River.

The proposed outfall ROW traverses areas previously developed for coal mining and farming. Typical vegetation within the ROW consists of Bermudagrass, St. Augustine grass, ragweed, sunflower, and johnsongrass with scattered hackberry, elm, and smilax along fence lines.

Outfall Structure

The proposed outfall station will consist of restrained joint ductile iron (RJDI) piping within the river channel with diffusers to allow discharge. Concrete ballasts will be installed on the bottom of the river channel to prevent floatation of the pipe and to keep it firmly on the bottom.

Trenching will be utilized to install the RJDI through the bank. The trench will be backfilled with the existing excavated material. The excavated material not needed for backfill will be removed to an upland location so the finished ground surface matches the preconstruction surface. A 30-foot permanent easement and two 25-foot temporary construction easements on either side (80 foot wide total) will be provided for the construction of the outfall structure from the normal water surface elevation to the terminus of the outfall structure. From the normal water surface elevation to Parish Road 601, only the 30-foot permanent easement and the 25-foot temporary easement to the north will be needed. The construction will require the vegetation in the permanent easement to be removed. The excavation will be backfilled with excavated soil and after the installation is complete; all areas will be returned to pre-construction contours. No heavy equipment is anticipated to be utilized below the OHWM and/or in sensitive areas. Activities beyond the waters edge will be performed from a floating barge.

Once through the bank, the pipeline will be partially exposed above the bed of the Red River. The underwater trench will be open cut and the same construction techniques discussed above will be employed. The necessary excavation will be performed from the barge as well as the joining and placement of the pipe.

Threatened and Endangered Species

Federally threatened (T) and endangered (E) species listed by the U.S. Fish and Wildlife Service (USFWS) as having the potential to occur in Red River Parish are *Scaphirhynchus albus* (pallid sturgeon, E) and *Sterna antillarum* (least tern, E).

> The ***pallid sturgeon*** is a large, primarily cartilaginous fish with a flattened snout and a long, slender tail base with bony plates. They are toothless and the mouth is located on the underside of the snout. These fish are typically colored gray dorsally and white ventrally and can weigh up to 86 pounds. The pallid sturgeon is similar in appearance to the shovelnose sturgeon; however, the shovelnose sturgeon is typically darker in color with bony plates along the belly.
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annelids. Terns usually feed close to their nesting sites. Terns nesting at sand and gravel pits and other artificial habitats may fly up to 3.2 km to fish.

Breeding colonies or terneries are usually small (up to 20 nests) with nests spaced far apart. Egg-laying and incubation occur from late May to early August, depending on the geographical location and availability of habitat.

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The riverine nesting areas of interior least terns are sparsely vegetated sand and gravel bars within a wide unobstructed river channel, or salt flats along lake shorelines. Nesting locations usually are at the higher elevations and away from the water's edge because nesting starts when the river flows are high and small amounts of sand are exposed. The size of nesting areas depends on water levels and the extent of associated sandbars.

Zephyr completed a pedestrian survey of the proposed electric line and outfall line ROWs, as well as the outfall structure location to determine if habitat likely to support the two federally-listed T&E species for Red River Parish exists. The T&E species habitat survey was completed by a qualified wildlife biologist. Data were collected to describe resident vegetation communities and assess the potential for occurrence of T&E species. Photographs of existing vegetation at the substation site and within the proposed electric line and outfall ROWs are provided in Appendix B.

The vegetative community observed within the survey area is limited to those areas immediately adjacent to the plant site, electric line ROW, and outfall line ROW and structure. No areas within the project footprint possess habitat that supports the pallid sturgeon or the interior least tern. No T&E species were observed within the survey area during the survey. It is Zephyr's opinion that construction of the proposed project will not adversely affect either listed species.

As mentioned earlier, portions of the this project have been reviewed by your office previously. This coordination letter is forwarded to update USFWS to recently modified portions of the project. Copies of the two previous coordination letters with stamped concurrence are included in Appendix C.

We believe this letter summarizing our survey fulfills the requirements of General Condition 17 of our Nationwide Permit. Should you have any questions please contact me at 512-636-0645 (mobile) or 512-879-6629 (office) or my colleague Jennifer Seinfeld at 410-312-7915. If you concur with our analysis, please indicate as such by signing below and faxing the signed copy to me at (512) 329-8253. Thank you for you assistance in this matter.

Sincerely,
Zephyr Environmental Corporation

Clay V. Fischer
Natural Resources Project Manager

cc: Ms. Jennifer Sharp Seinfeld, P.E. Zephyr, Baltimore, Maryland
Ms. Andrea Adams, ADA-ES, Littleton, Colorado

Signature of Concurrence

USFWS Representative Signature Date

APPENDIX C

FLOODPLAIN DOCUMENTATION

The Times

PROOF OF PUBLICATION

STATE OF LOUISIANA

PARISH OF CADDO

Before me, the undersigned authority, personally came and appeared

Altheas Critton personally known to me,

Who being duly sworn, deposes and says that she is the Assistant to the Classified Advertising Manager of The Times, and that the attached Advertisement entitled:

UNITED STATES DEPARTMENT OF ENERGY
Notice of Floodplain Action RREP Activated Carbon Manufacturing Facility

As per copy of advertisement hereto annexed, was published in

The Times on the following dates to wit:

September 21, 2009

(Signed) Altheas Critton

Sworn to and subscribed before me this 21st day of September, 2009

Diana W. Barber

DIANA W. BARBER, NOTARY PUBLIC # 60491
CADDO PARISH, LOUISIANA
MY COMMISSION IS FOR LIFE

(Notary)

UNITED STATES DEPARTMENT OF ENERGY
Notice of Floodplain Action RREP Activated Carbon Manufacturing Facility

The Department of Energy (DOE) Loan Guarantee Program Office (LGPO) is providing notice of a proposed DOE action that involves continuation of construction in a floodplain. DOE is considering an energy loan guarantee pursuant to Title XVII of the Energy Policy Act for Red River Environmental Products (RREP) Activated Carbon Manufacturing Facility that would occupy approximately 60 acres of land just west of Armistead, Red River Parish, Louisiana. The site of the facility, which is currently under construction and is seeking a DOE loan guarantee to complete the facility, is in the 100-year floodplain. DOE will prepare a floodplain assessment as required by 10 CFR Part 1022.12, and the floodplain assessment will be included in the Environmental Assessment (EA) being prepared under the National Environmental Policy Act. A notice will be posted when the floodplain assessment is available for public review. Contact Sharon Thomas within 15 days to provide comments on today's notice of floodplain action at 202-586-5335 or via email at sharon.r.thomas@hq.doe.gov.

The Times:
September 21, 2009

GANNETT

AFFIDAVIT OF PUBLICATION

STATE OF LOUISIANA

Parish of Natchitoches

Before me, a Notary Public, personally came and appeared Vickie Feazell

who, being duly sworn, did depose and say that she/he is Bookkeeper of

The *Coushatta Citizen*, a newspaper of general circulation published within the Parish of Red River,

and that United States Department of Energy "Notice of Flood Action" RKEF Activated Carbon Manufacturing Facility

as per copy attached hereto, was published in said newspaper in the issues of September 24, 2009

(S) Vicki Feazell

SWORN AND SUBSCRIBED to before me this 24th day of September

Dianne B. Litton

Notary Public

Dianne B. Litton
#015767

PBS&J

An employee-owned company

11 September, 2009

Darren Meadows, P.E.
Engineering Manager
ADA Carbon Solutions
555 Oppenheimer, Suite 207
Los Alamos, NM 87544

RE: Analysis of Floodplain Issues at RREP Activated Carbon Plant Site

PBS&J Project Number: 100009702

Dear Mr. Meadows:

Red River Environmental Products (RREP) is constructing an activated carbon plant at the Red River Mine in Red River Parish near the city of Coushatta, Louisiana. This letter report presents PBS&J's analyses and findings of the effect of the project on the 100-year floodplain near the site. Our focus is on the effect of the first production line, but an assessment of the effect of the future second production line was also made based on available information.

BACKGROUND

As illustrated in Figure 1, the project area is within a larger former mine site that is enclosed by a levee to the east and a knoll on the west. As part of the mining process, drainage from the north (Pig Pen Bayou) has been diverted to the east of the site in a canal to the north of the levee. Runoff from the area is collected at the south, away from the project area, and removed by pumping. So long as the levee remains intact, it would protect the area within from flooding sources outside, at least up to an elevation of approximately 134 feet. However, since the levee is not certified by FEMA and some portion of it could be removed in the future, this letter report presents the analyses performed to evaluate the effect of the project on the adjacent floodplain assuming there is no levee protection.

According to FEMA's FIRM Panel 220152 B dated May 15, 1985, the project area is completely in Zone A. Therefore, according to FEMA regulations, proposed development cannot result in an increase in the Base Flood Elevation (BFE) by more than one foot. The Floodplain Administrator of Red River Parish has confirmed that the parish does not have regulations more stringent than the requirements of the FEMA National Flood Insurance Program.

Before construction began, RREP contracted with Owen and White Consulting Engineers in Baton Rouge, Louisiana to compute and certify the BFE around the manufacturing site. Owen & White computed the BFE to be 132.6 feet above MSL and recommended that foundation elevations be set at least one foot above the BFE (Owen & White, Inc. 2008). The study calculated BFE values based on data from 4 possible nearby flooding sources - Bayou Pierre, Pigpen Bayou, Shell Bayou and the Red River. The study determined that the Bayou Pierre BFE value of 132.6 feet was the most conservative and appropriate.

ANALYSIS OF FLOODPLAIN IMPACTS

The first step in our evaluation of effects on adjacent properties was to determine the balance between cut and fill in the 100-yr floodplain defined by the computed BFE of 132.6 ft, based on pre-project

topographic survey of the site and construction plan of the first production line provided by ADA. Figure 2 shows the location of seven cross-sections across the site for estimating cut and fill. The cross-sections are shown in Figure 3. The cut and fill calculations are shown in Table 1. The volumes of cut and fill in the floodplain were estimated to be 51,000 CY and 29,000 CY, respectively. There is no net fill in the floodplain below the BFE and therefore no adverse effect on the floodplain storage volume, which would affect routing and hydrology.

Construction of the second production line will require an estimate of additional 25,000 CY of fill to the south of the first production line. Since not all of the fill will be in the existing floodplain, and there is an excess of 22,000 CY of cut over fill volume in the construction of the first production line, no overall net fill is expected even after construction of the second production line. We recommend that this estimate be confirmed when the detailed design of the second production line is available.

Evaluating project effects on the water surface elevation is more complex. Typically, the analyses involve hydrologic and hydraulic (H&H) modeling to determine the flows through the area and the resulting water surface elevations before and after a project. Bayou Pierre has a very large watershed at this location (about 700 square miles). The project involves construction in a relatively small area compared to a large floodplain of the bayou. Intuitively, the project should not have a significant adverse impact on the overall flood elevation. The issue does not seem to warrant an extensive detailed H&H analysis. Instead, a simplified approach as discussed below was used.

The discharge records of USGS stream gages for Bayou Pierre upstream and downstream of the site were reviewed to provide an indication of the magnitude of flow at this location. USGS gage 07351600, Bayou Pierre near Grand Bayou, is upstream of the site and has a drainage area of 661 square miles. The gage has a discharge record from 10/1/1977 to 9/30/1984 and the maximum daily discharge is 7,200 cfs. The gage downstream of the site is 07351750, Bayou Pierre near Lake End. It has a drainage area of 860 square miles. The period of record is from 10/1/1980 to 2/9/2009. The maximum daily discharge is 13,500 cfs. In the vicinity of the project area, flood water would travel from north to south bounded by the railroad embankment to the east and the knoll to the west. Without a detailed analysis, the flow through this area is not known. The entire Bayou Pierre floodplain width at this point is approximately five miles and much wider than the area between the railroad and the knoll, a width of about one mile. Since this is at the edge of the floodplain, a conservative estimate of the flow through this area is 20% of the entire flow of Bayou Pierre. Since the USGS stream records may not encompass a 100-year event, we will assume the 100-year flow to be twice the highest flow recorded or 27,000 cfs. A conservative estimate of the flow from a 100-yr event through the area between the railroad and the knoll could be 20% of this value or 5,400 cfs. A range of flows from 500 cfs to 10,000 cfs was used to bracket the possible flow.

To evaluate the effect of the RREP facility on adjacent property, assuming the levee on the north side parallel to Red River Parish Road 604 were removed, a HEC-RAS model was constructed with the cross-sections shown in Figure 4. USGS quadrangle sheets for Harmon and Evelyn, Louisiana with contours in 10-foot intervals were used to extend the cross-sections to the west. The model cross-sections are shown in Figure 5. Two models were constructed with cross-sections reflecting both pre-project and post-project conditions to compare the differences.

This modeling effort is not intended to determine a specific water surface elevation for the 100-year event, but is a simplified approach to evaluate the relative impact of the project. For consideration of a 100-yr flooding event, the area should be at a water surface elevation similar to the BFE. Therefore, the downstream boundary water surface elevation was assumed to be 132.0 ft. It was found that changing the

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An employee-owned company

downstream boundary water surface elevation to 131.5 ft or 132.5 ft resulted only in small changes in the differences between pre- and post-project water surface elevations.

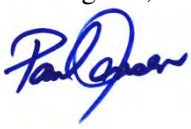
A Manning's n value of 0.06 was used for the existing condition. The proposed condition in the project area is expected to have a smoother surface due to either paved area or better maintained grass area. Nevertheless, the same relatively high n value was also used in the proposed condition to be conservative.

The differences in water surface elevation pre- and post-project are shown in Table 2. The water surface elevations at most cross-sections are decreased slightly after the project. There is a slight increase at the north (upstream) end of the site. With a flow of 5,000 cfs, close to the estimated maximum amount at that location for a 100-yr event, the increase is only 0.03 ft. Even if the flow is as high as 10,000 cfs, which is unlikely, the increase is still only 0.10 ft. Therefore, we concluded that the project would not have any significant adverse floodplain impact on the adjacent properties.

An assessment of the effect of the second production line was made by raising the proposed ground level at River Stations 1664 and 1439 accordingly. At the north end of the site, with a flow of 5,000 cfs the increase in water surface elevation between pre-project and post-project including the second line is still 0.03 ft. With 10,000 cfs, the increase becomes 0.12 ft. Therefore, the effect of the second production line is also expected to be minimal.

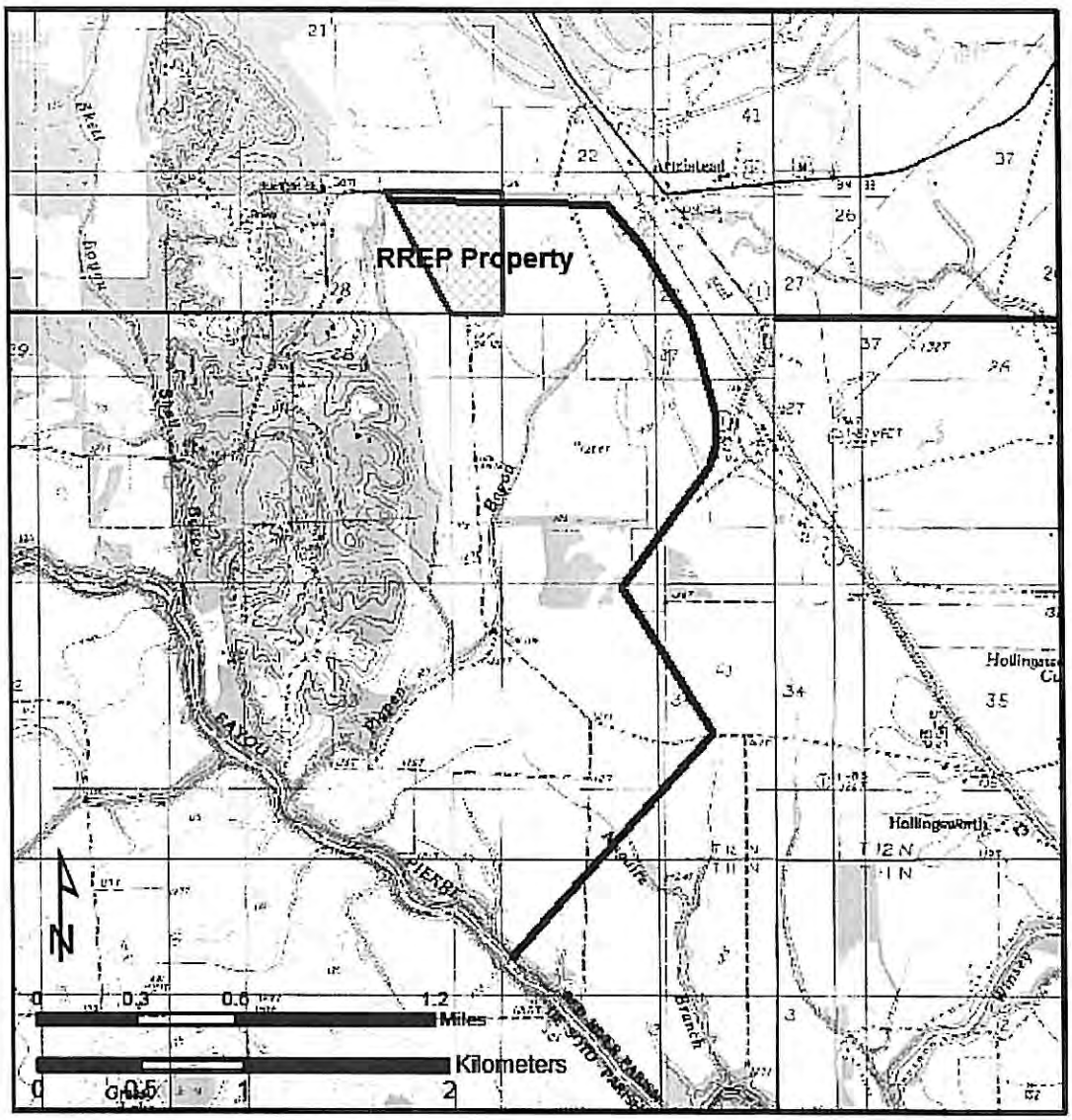
If you have any question, please contact me at 512-342-3302 or via email at PAJensen@pbsj.com, or Ka-Leung Lee at 512-342-3303 or klee@pbsj.com.

With regards,



Paul A. Jensen, Ph.D., PE, BCEE
Vice President
Louisiana PE 34040

Figure 1
RREP Property and Levee



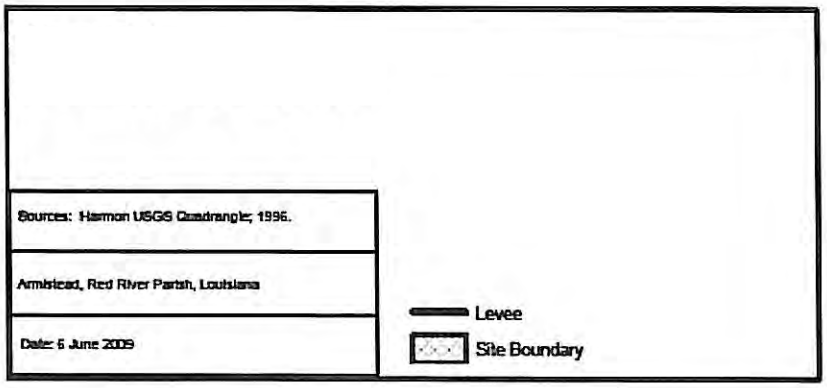


Figure 2
Location of Cross Sections for Cut and Fill Calculations

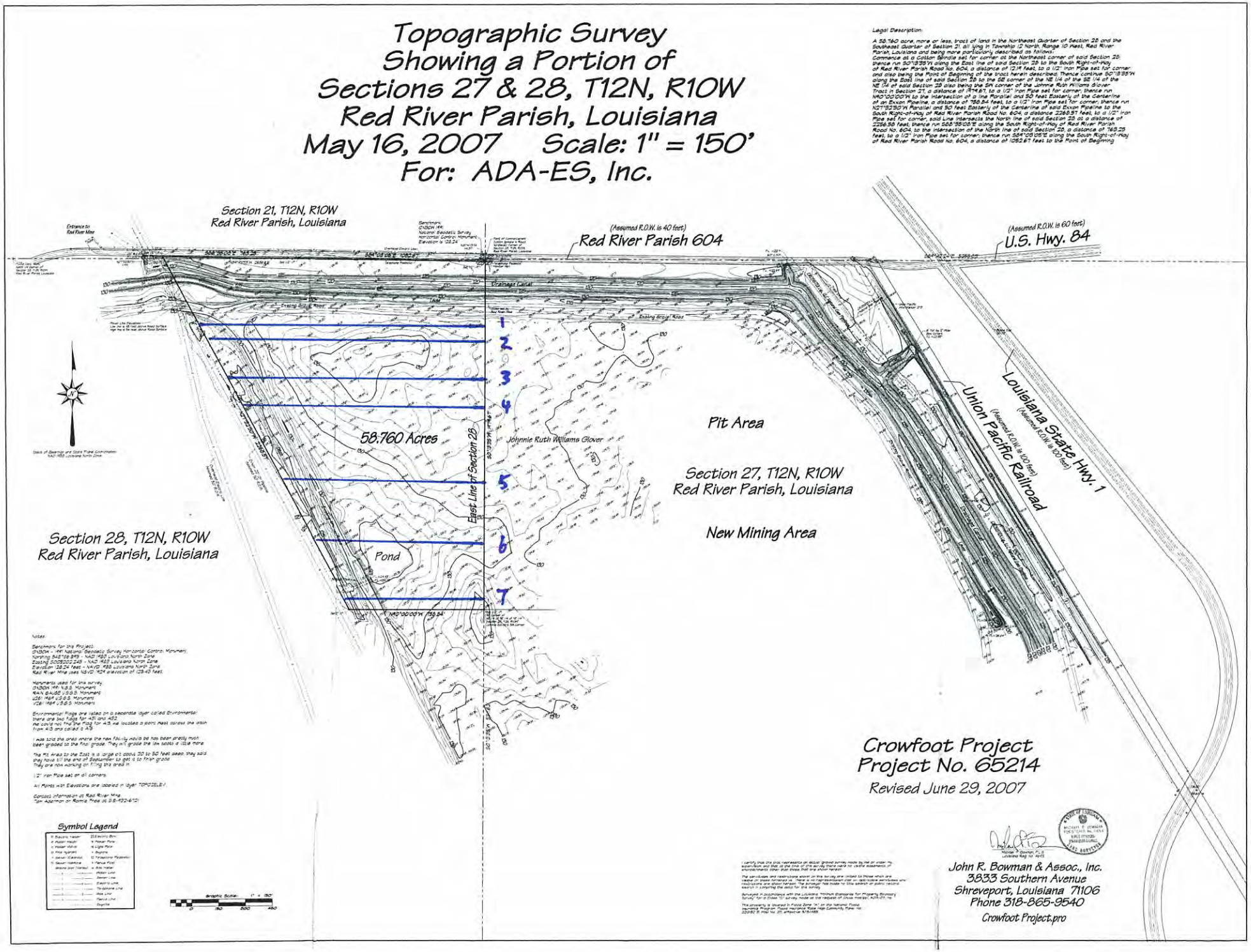


Figure 3
Cross Sections for Cut & Fill Calculations

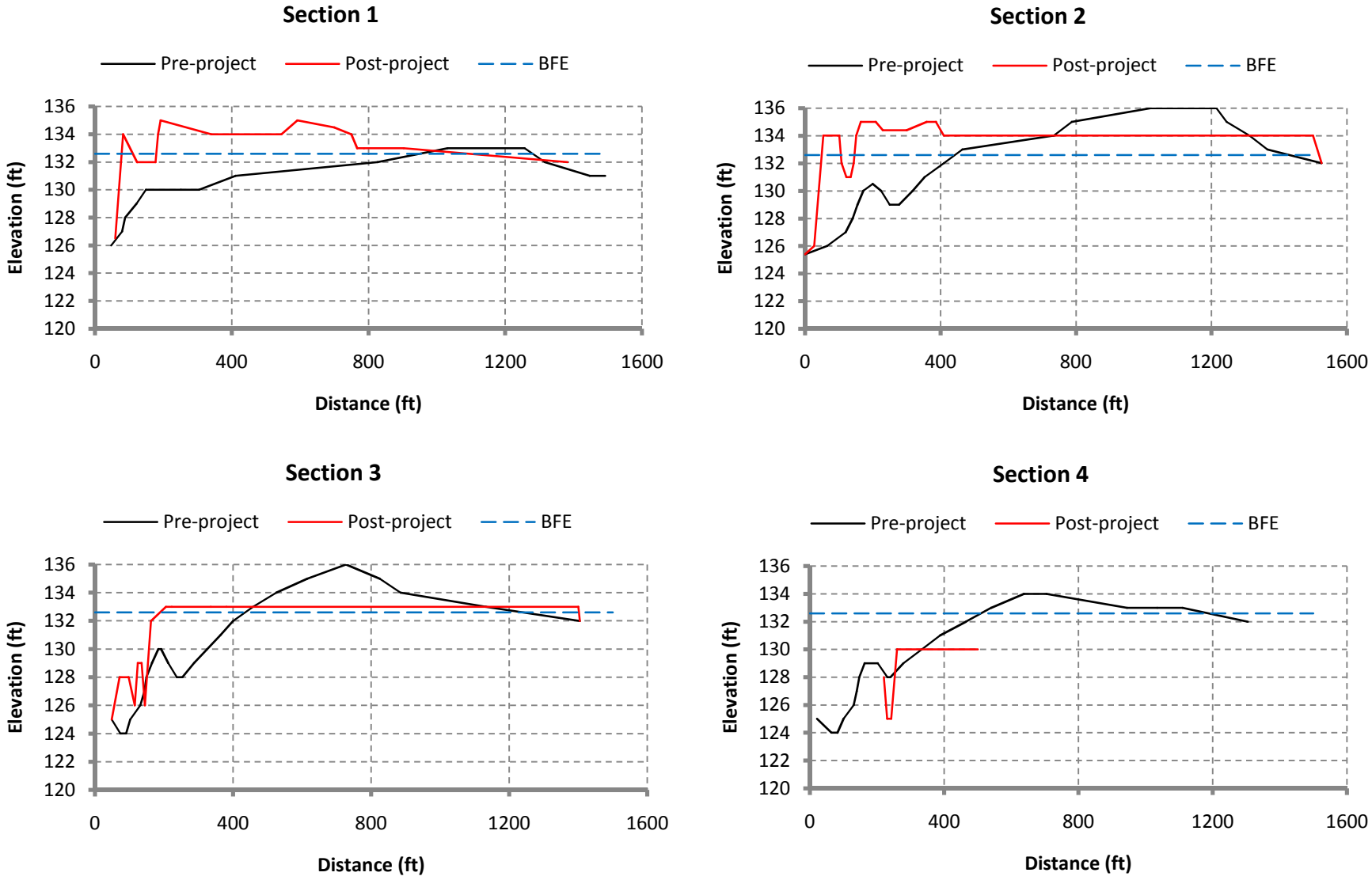
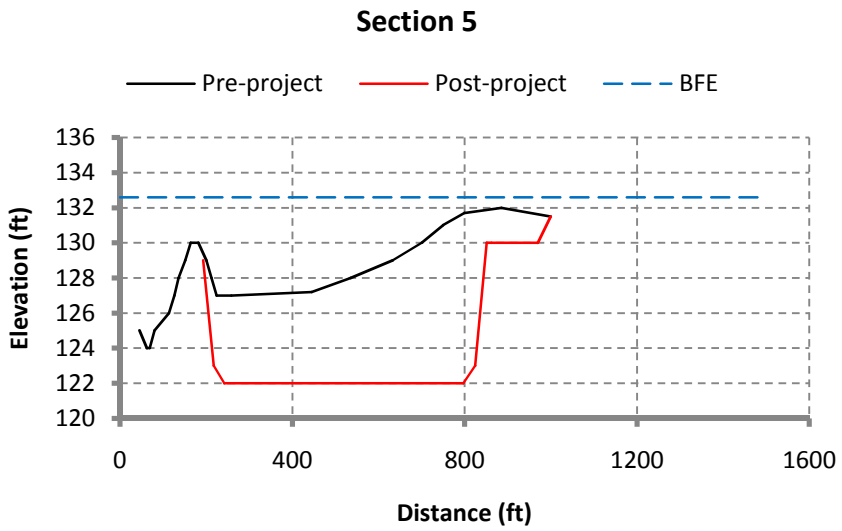
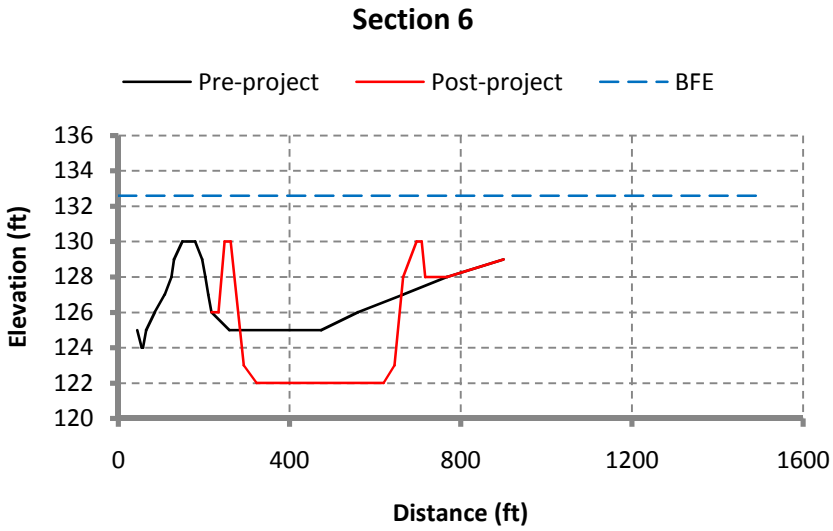


Figure 3 (Cont'd)
Cross Sections for Cut & Fill Calculations





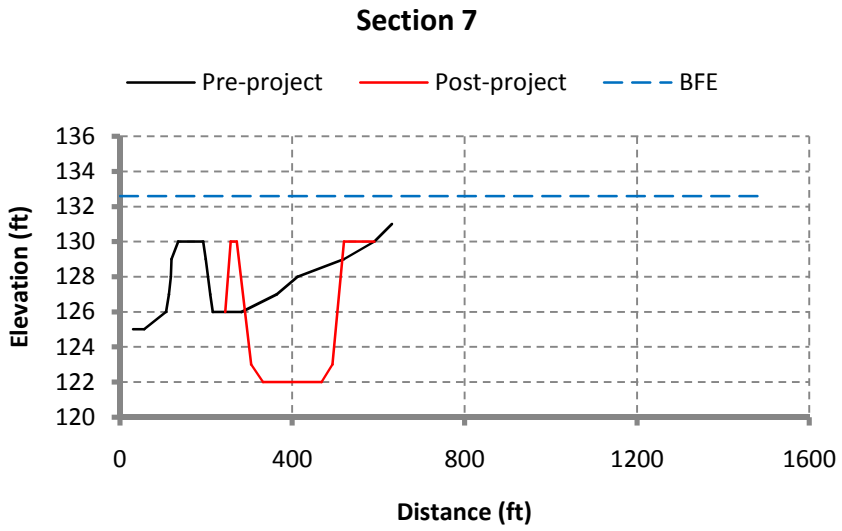


Table 1
Estimates of Cut & Fill in Floodplain Below BFE

Section	Distance ft	Cut Area sq ft	Fill Area sq ft	Cut Vol cu ft	Fill Vol cu ft
End		0	1400		
	160			0	224,000
1		0	1400		
	88			0	116,600
2		0	1250		
	220			0	247,500
3		0	1000		
	158			7,900	86,900
4		100	100		
	20			1,000	1,000
End		0	0		
End		0	0		
	20			43,000	0
5		4300	0		
	345			948,750	43,125
6		1200	250		
	288			338,400	64,800
7		1150	200		
	60			34,500	6,000
End		0	0		
			Total (cu ft)	1,373,550	789,925
			Total (cu yd)	**51,000**	**29,000**

Figure 4
Location of HEC-RAS Cross Sections

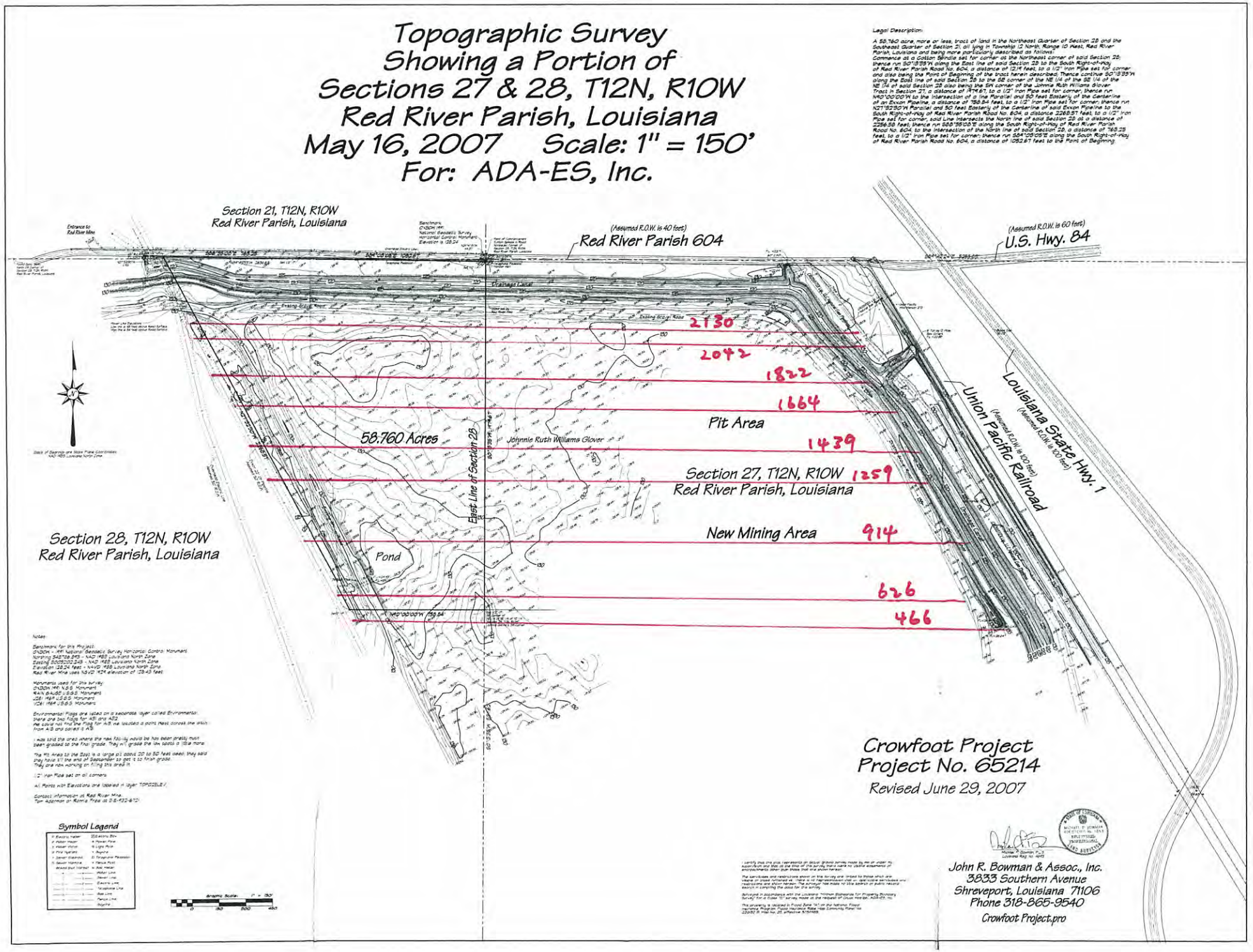


Figure 5
HEC-RAS Cross Sections

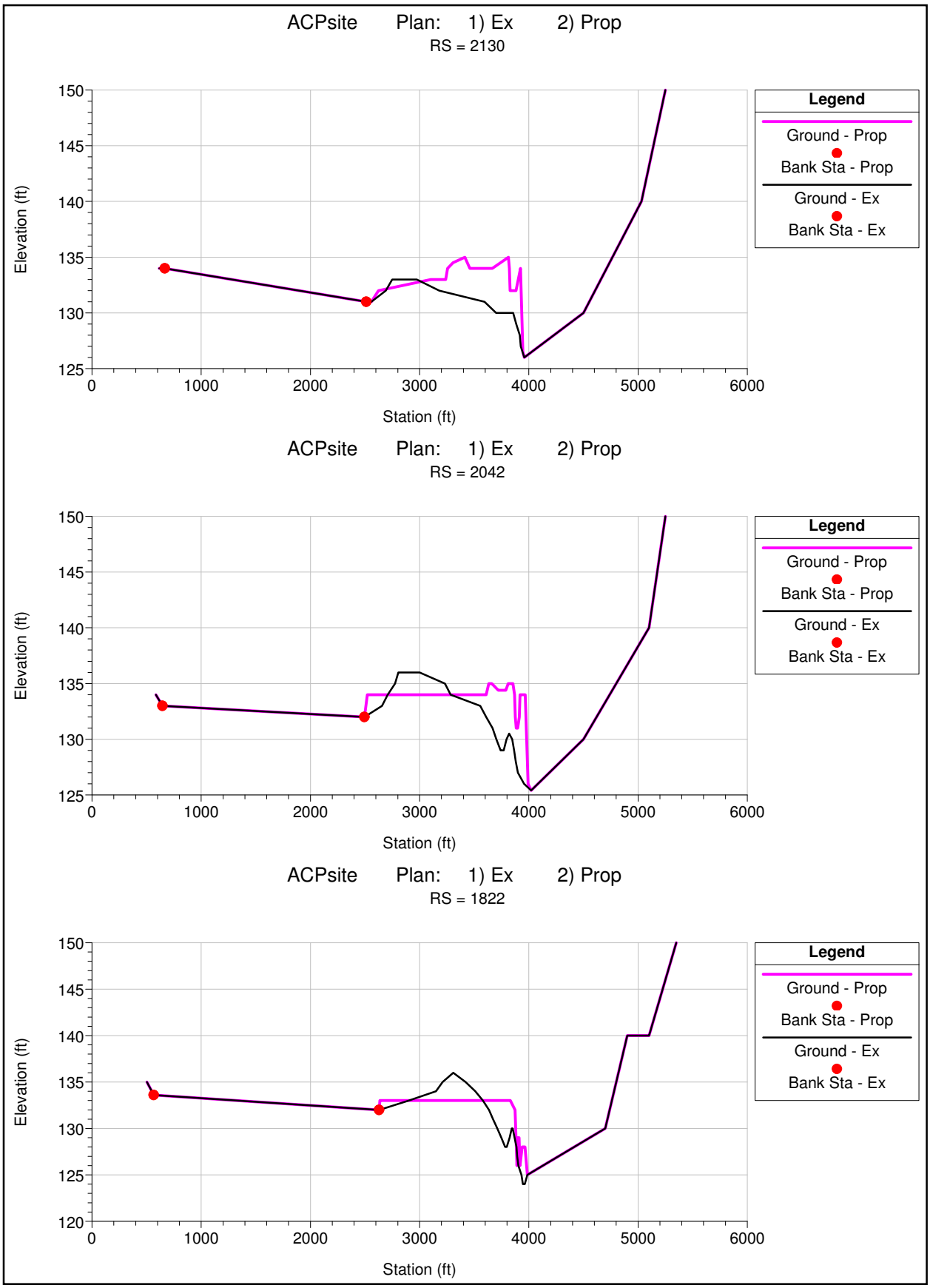


Figure 5 (Cont'd)
HEC-RAS Cross Sections

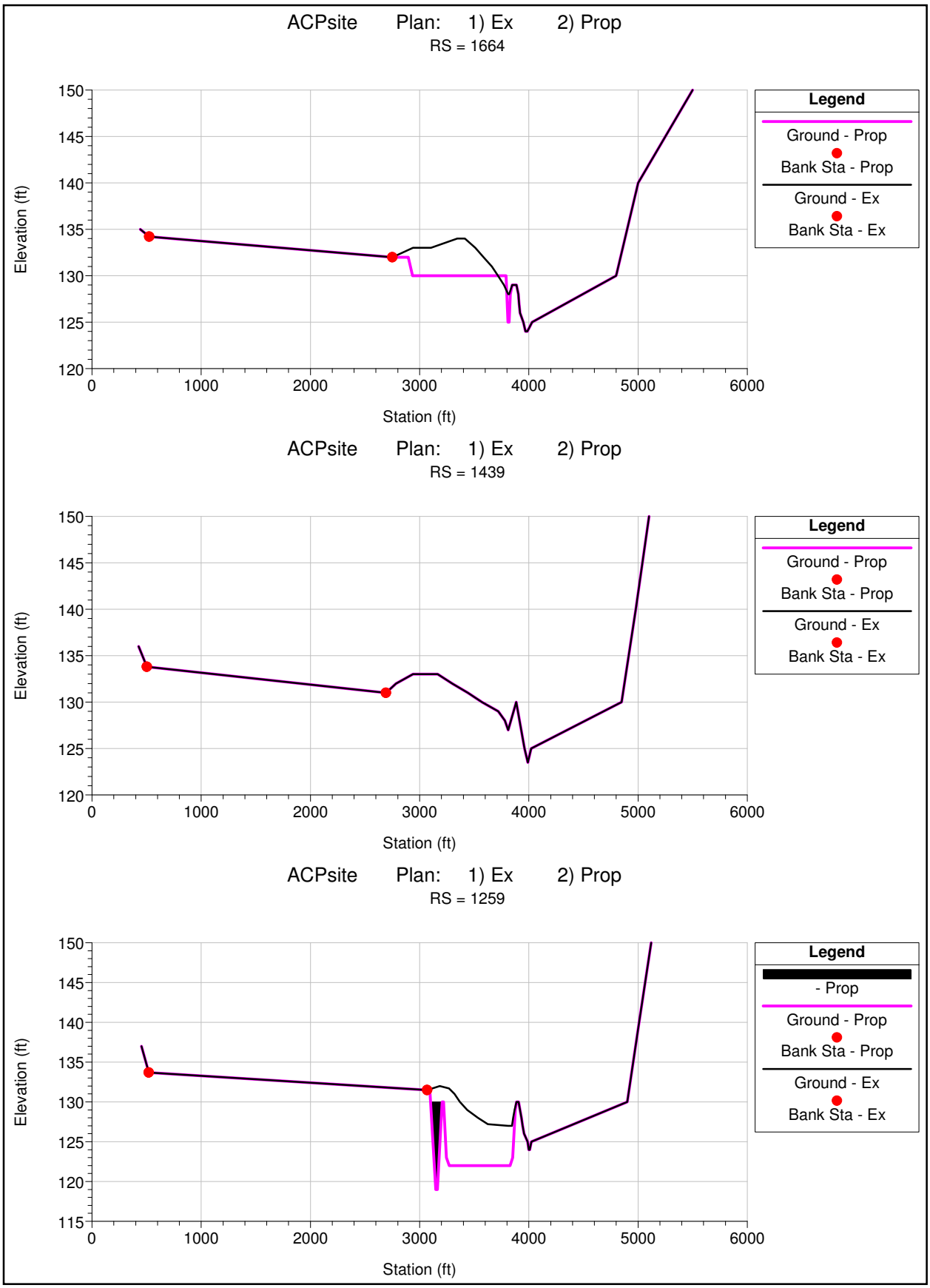


Figure 5 (Cont'd)
HEC-RAS Cross Sections

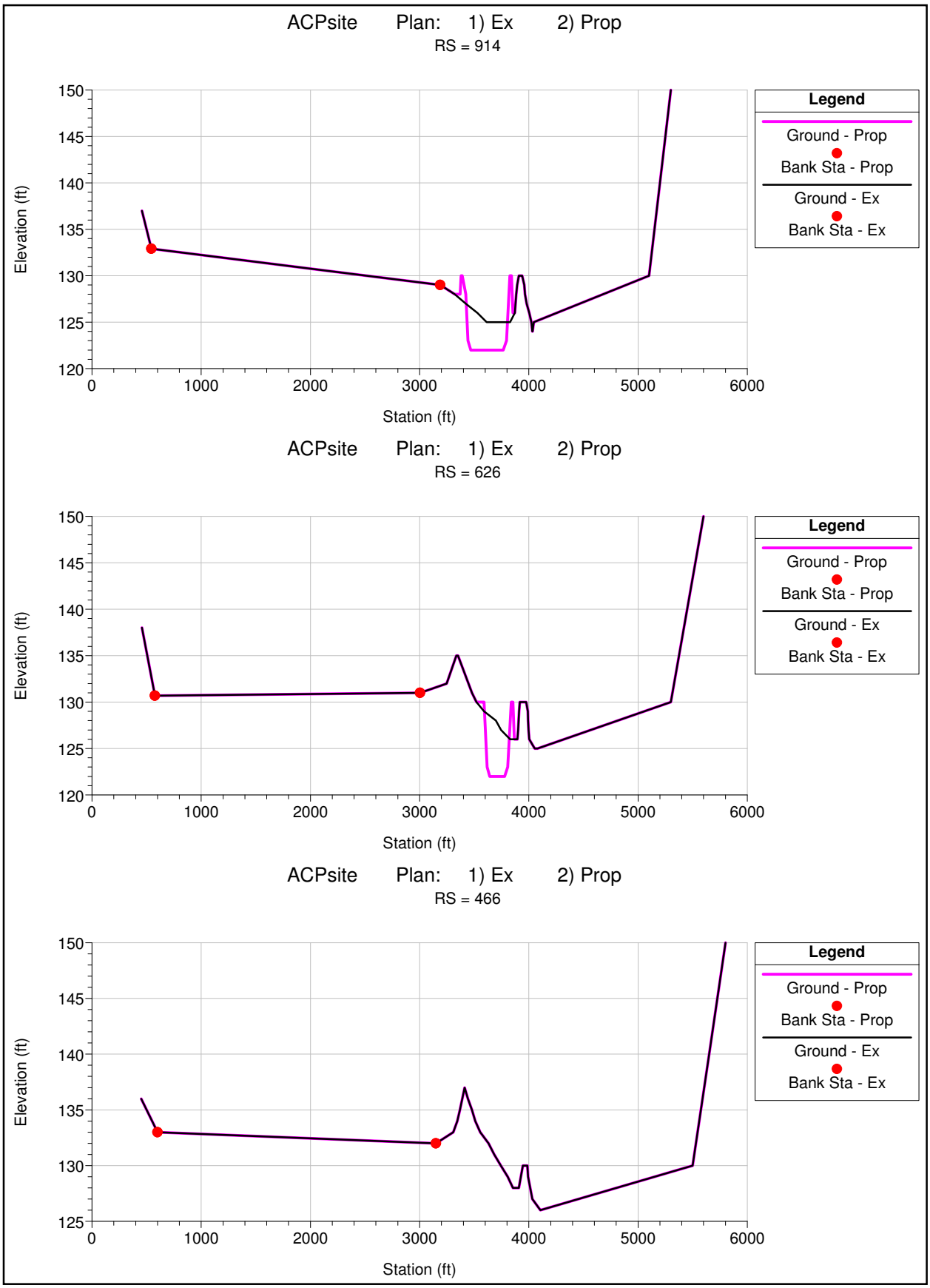


Table 2
Comparison between Pre-Project and Post-Project
Water Surface Elevations

River Sta	Q Total (cfs)	W.S. Elev		
		Pre-Project (ft)	Post-Project (ft)	Increase (ft)
2130	500	132.00	132.00	0.00
2130	1000	132.01	132.01	0.00
2130	2000	132.05	132.06	0.01
2130	3000	132.11	132.12	0.01
2130	4000	132.20	132.22	0.02
2130	5000	132.30	132.33	0.03
2130	6000	132.41	132.45	0.04
2130	7000	132.53	132.59	0.06
2130	8000	132.66	132.73	0.07
2130	9000	132.79	132.87	0.08
2130	10000	132.92	133.02	0.10
2042	500	132.00	132.00	0.00
2042	1000	132.01	132.01	0.00
2042	2000	132.04	132.04	0.00
2042	3000	132.09	132.09	0.00
2042	4000	132.15	132.15	0.00
2042	5000	132.24	132.23	-0.01
2042	6000	132.33	132.32	-0.01
2042	7000	132.43	132.42	-0.01
2042	8000	132.54	132.52	-0.02
2042	9000	132.65	132.64	-0.01
2042	10000	132.77	132.75	-0.02
1822	500	132.00	132.00	0.00
1822	1000	132.01	132.01	0.00
1822	2000	132.03	132.02	-0.01
1822	3000	132.06	132.04	-0.02
1822	4000	132.11	132.08	-0.03
1822	5000	132.16	132.12	-0.04
1822	6000	132.23	132.17	-0.06
1822	7000	132.30	132.22	-0.08
1822	8000	132.38	132.28	-0.10
1822	9000	132.47	132.35	-0.12
1822	10000	132.56	132.41	-0.15

Table 2 (Cont'd)
Comparison between Pre-Project and Post-Project
Water Surface Elevations

River Sta	Q Total	W.S. Elev		
		Pre-Project	Post-Project	Increase
	(cfs)	(ft)	(ft)	(ft)
1664	500	132.00	132.00	0.00
1664	1000	132.01	132.00	-0.01
1664	2000	132.02	132.01	-0.01
1664	3000	132.05	132.03	-0.02
1664	4000	132.08	132.06	-0.02
1664	5000	132.13	132.09	-0.04
1664	6000	132.18	132.13	-0.05
1664	7000	132.24	132.17	-0.07
1664	8000	132.30	132.22	-0.08
1664	9000	132.37	132.27	-0.10
1664	10000	132.45	132.33	-0.12
1439	500	132.00	132.00	0.00
1439	1000	132.00	132.00	0.00
1439	2000	132.01	132.01	0.00
1439	3000	132.03	132.02	-0.01
1439	4000	132.05	132.03	-0.02
1439	5000	132.08	132.04	-0.04
1439	6000	132.12	132.06	-0.06
1439	7000	132.16	132.09	-0.07
1439	8000	132.20	132.11	-0.09
1439	9000	132.25	132.14	-0.11
1439	10000	132.30	132.17	-0.13
1259	500	132.00	132.00	0.00
1259	1000	132.00	132.00	0.00
1259	2000	132.01	132.01	0.00
1259	3000	132.02	132.01	-0.01
1259	4000	132.04	132.03	-0.01
1259	5000	132.06	132.04	-0.02
1259	6000	132.08	132.06	-0.02
1259	7000	132.11	132.08	-0.03
1259	8000	132.14	132.10	-0.04
1259	9000	132.17	132.12	-0.05
1259	10000	132.21	132.15	-0.06

Table 2 (Cont'd)
Comparison between Pre-Project and Post-Project
Water Surface Elevations

River Sta	Q Total	W.S. Elev		
		Pre-Project	Post-Project	Increase
	(cfs)	(ft)	(ft)	(ft)
914	500	132.00	132.00	0.00
914	1000	132.00	132.00	0.00
914	2000	132.01	132.00	-0.01
914	3000	132.01	132.01	0.00
914	4000	132.02	132.02	0.00
914	5000	132.04	132.03	-0.01
914	6000	132.05	132.04	-0.01
914	7000	132.07	132.06	-0.01
914	8000	132.09	132.07	-0.02
914	9000	132.11	132.09	-0.02
914	10000	132.14	132.11	-0.03
626	500	132.00	132.00	0.00
626	1000	132.00	132.00	0.00
626	2000	132.00	132.00	0.00
626	3000	132.01	132.01	0.00
626	4000	132.01	132.01	0.00
626	5000	132.02	132.02	0.00
626	6000	132.03	132.03	0.00
626	7000	132.04	132.03	-0.01
626	8000	132.05	132.04	-0.01
626	9000	132.06	132.06	0.00
626	10000	132.08	132.07	-0.01
466	500	132.00	132.00	0.00
466	1000	132.00	132.00	0.00
466	2000	132.00	132.00	0.00
466	3000	132.00	132.00	0.00
466	4000	132.00	132.00	0.00
466	5000	132.00	132.00	0.00
466	6000	132.00	132.00	0.00
466	7000	132.00	132.00	0.00
466	8000	132.00	132.00	0.00
466	9000	132.00	132.00	0.00
466	10000	132.00	132.00	0.00

RED RIVER PARISH
Police Jury

Telephone
318-932-5719

Fax
318-932-5080

P.O. DRAWER 709 **COUSHATTA, LOUISIANA 71019-0709**

BEN TAYLOR
PRESIDENT
P.O. Box 1027
District 6, Coushatta 71019

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VICE PRESIDENT
Rt. 5, Box 119
District 7, Coushatta 71019

WILLIAM BROWN
Rt. 3, Box 297
District 1, Coushatta 71019

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District 2, Coushatta 71019

BILLY JOE GAY
Rt. 1, Box 234-B
District 3, Coushatta 71019

JOHN MOORE, JR.
Rt. 4, Box 196
District 5, Coushatta 71019

JESSIE DAVIS
MANAGER
Rt. 1, Box 355
District 4, Shreveport 71115

CAROLYN H. JOHNSON
Secretary/Treasurer

DEBRA ZIMMERMAN
Administrative Assistant

JOHNNY SHARPLEY
Road Superintendent

September 4, 2009

Darren Meadows
ADA engineering department

RE: Flood Plan Management:

Dear Sir,

Red River Parish does not have regulations more stringent than state and federal regulation. We administer and enforce floodplain Management regulations in accordance with the FEMA National Flood Insurance Program regulation.

If we can be of further assistance, please call.

Sincerely,

Jessie Davis
Flood Plain Administrator

BASE FLOOD ELEVATION

to

HUNT, GUILLOT & ASSOCIATES, LLC
PROJECT MANAGERS & ENGINEERS

for

ADA -ES Facility

at

North American Coal Corporation
Red River Mine
Red River Parish, Louisiana

Prepared by

Owen & White INC.
CONSULTING ENGINEERS

February, 2008

EXECUTIVE SUMMARY

ADA-ES, Inc. plans to construct a processing facility at the Red River Mine in Red River Parish near the city of Coushatta, Louisiana. The proposed facility is located in Zone A on the Flood Insurance Rate Map. It is necessary to compute a Base Flood Elevation for the facility.

There are three potential sources of flooding:

1. Bayou Pierre along the south boundary
2. Pigpen Bayou along the east boundary
3. Shell Bayou along the west boundary

Approximate Base Flood Elevations were developed for Bayou Pierre in a 1999 FEMA study for DeSoto Parish. Since the gauges which provided this data are no longer active, the 1999 analysis remains as the best information available.

Hydrologic and hydraulic analysis have been performed on Pigpen Bayou and Shell Bayou for this report.

To alleviate the concern of flooding from Red River, a profile from the Corps of Engineers Lock and Dam study is provided. This is actually superfluous since flooding from the Red River would need to breach its levee, Louisiana Highway 1 and an elevated railroad before reaching the project site.

The computed Base Flood Elevations for the project site are as follows:

Bayou Pierre	132.6 feet
Pigpen Bayou	129.3 feet
Shell Bayou	125.8 feet
Red River	132.4 feet

It is recommended that foundation elevations be set at least one foot above the computed Base Flood Elevation of **132.6 feet**.

ENGINEER'S CERTIFICATION

This is to certify that Owen and White, Inc., under authorization of Hunt, Guillot and Associates, made an investigation of a 130 acre tract of land located in Sections 27 and 28, Township 12 North, Range 10 West of Red River Parish, LA. This is a Determination of Base Flood Elevations for ADA Environmental Services as part of the Red River Mine of the North American Coal Corporation. To the best of my knowledge and belief, all statements and information in this report are true and correct, and we have not knowingly withheld any significant information.

Theodore E. DeBaene, P.E., CFM
Civil Engineer, LA Reg. No. 12784

OBJECTIVE

ADA-ES, Inc. plans to construct a processing facility at the North American Coal Corporation's Red River Mine in Red River Parish as presented on the Vicinity Map, Exhibit 1.

The mine property is bounded on the South by Bayou Pierre, on the east by a relocated Pigpen Bayou, on the west by Shell Bayou and on the north by parish road 604. The ADA-ES site is in the north central portion of the mine site as presented in Exhibit 2.

The site is located on the Red River Parish Flood Insurance Rate Map in Zone A (Exhibit 3). There are no established Base Flood Elevations (BFE) in Zone A. It is the responsibility of the developers to determine the appropriate BFE.

It is the objective of this report to determine the BFE for this site.

Three are three potential flood sources that are analyzed:

1. Bayou Pierre
2. Pigpen Bayou
3. Shell Bayou

A fourth consideration, Red River, is also evaluated.

It is further noted that the entire site is surrounded by a levee with a working height of 134.5 feet. However, the levee is not certified so for determination of regulatory Base Flood Elevations, it does not exist.

BAYOU PIERRE

In 1999, a FEMA Flood Insurance Study was performed in DeSoto Parish. The study included the establishment of Enhanced Base Flood Elevations along Bayou Pierre. The area remains a Zone A but elevations are available to establish foundations and as "Community Determined" BFEs on Elevation Certificates.

The Base Flood Elevations were determined by analyzing six gauging stations along Bayou Pierre. The period of record varied from station to station with a total span from 1939 to 1997. By comparing maximum stages in common years, all missing data and data extensions were established. A flood frequency analysis with Weibull plotting positions was prepared for each station. The resultant base flood elevations were interpolated onto maps of the stream.

The ADA-ES site is located between the Hanna gauge and the Evelyn gauge. The Flood Frequency elevation curve produced Based Flood Elevation as follows:

Gauge	BFE	Drainage Area
Hanna	130.5 feet	729 square miles
Evelyn	133.6 feet	707 square miles

The location of the BFEs extracted into Red River Parish are presented in Exhibit 4. The corresponding BFEs for the site are:

Southern tip 132.3 feet

Northwest corner 132.6 feet

PIGPEN BAYOU

The Red River Mine is constructed on a downstream reach of Pigpen Bayou. The stream has been diverted through a 30 feet bottom width perimeter ditch. The outlet to Bayou Pierre actually flows through another stream "Maguire Branch".

The Pigpen Bayou basin has a drainage area of 6.0 square miles at the confluence of Bayou Pierre. It is quite flat having a slope of 4.2 feet per mile. The Basin Map is presented in Appendix A.

The regression analysis from "Floods in Louisiana, Magnitude and Frequency" is used to determine the discharge at its mouth.

$$Q_{p100} = 10.5\ DA^{0.792}\ SLP^{0.691}\ (AP-35)^{0.783}$$

where

DA – drainage area is in square miles
SLP – channel slope is in feet per mile
AP – annual precipitation is 49 inches

The resultant peak discharge is 714 cfs.

The hydraulic analysis is performed in HECRAS with 12 cross sections at approximately 1000 foot intervals along the perimeter ditch. The reach begins south of the project site at the 90° bend in the perimeter ditch and continues to the northwest corner of the site. The cross sections are developed from LiDAR imagery.

The starting water surface elevation boundary condition is normal depth. Since the drainage area for this basin is only 1% of Bayou Pierre's drainage area, the Pigpen Basin flood condition is independent of Bayou Pierre water surface elevations.

The peak discharge of 714 cfs at the mouth of the stream is conservatively used throughout the model.

The computed water surface elevation for the 100 year event on Pigpen Bayou, at the northwest corner of the project site is 129.3 feet.

SHELL BAYOU

The western boundary of Red River Mine is Shell Bayou. The ridgeline along this boundary varies from 160 to 200 feet. This high ridgeline continues for about 3,600 feet north of the site. It, then, flattens into a wide floodplain with a meandering stream bed. As it meanders northwest, it become known as Susie Bayou and Honey Bayou.

The Shell Bayou Basin has a drainage area of 10.1 square miles at the confluence of Bayou Pierre. It is very flat having a slope of only 1.6 feet/mile. The Basin Map is presented in Appendix A.

The regression analysis from "Floods in Louisiana, Magnitude and Frequency" is again used to determine peak discharge. The resultant peak 100 year discharge at is mouth is 925 cfs.

The hydraulic analysis is performed in HECRAS with 7 cross sections at approximately 1000 foot intervals. The reach begins 555 feet upstream of the confluence with Bayou Pierre and continues to a point opposite the northwest corner of the site. The cross sections are developed from LiDAR imagery.

The starting water surface elevation boundary condition is normal depth. Since the drainage area for this basin is less than 2% of Bayou Pierre's drainage area, the Shell Bayou flood condition is independent of the Bayou Pierre water surface elevations.

The peak discharge of 925 cfs at the mouth of the stream is conservatively used throughout the model.

The computed water surface elevation for the 100 year event on Shell Bayou is 125.8 feet at a point opposite the northwest corner of the project site.

RED RIVER

A major stream, the Red River, meanders near the drainage basin. Its closet penetration to the site is about one mile. The Red River is contained by a levee. Certification of that levee is underway and is anticipated to be completed by the Corps of Engineers in the near future.

If that levee would breach, potential floodwaters would need to also pass through an elevated Louisiana Highway 1 and an elevated railroad. It is highly unlikely that all three would breach. Even if they do, the floodwaters would spread over an extensive area thereby reducing the elevation from that contained within the levee.

To further alleviate the concern of Red River flooding, a copy of 100 year frequency elevations from Design Memorandum No 3 is presented in Exhibit 5. US Highway 84 is located at Post Project River Mile 177.8. The Post Project (current conditions) 100 year water surface elevation at US Highway 84 is 132.4 feet. The water surface elevation is contained within the levees and is lower than the BFE computed for Bayou Pierre.

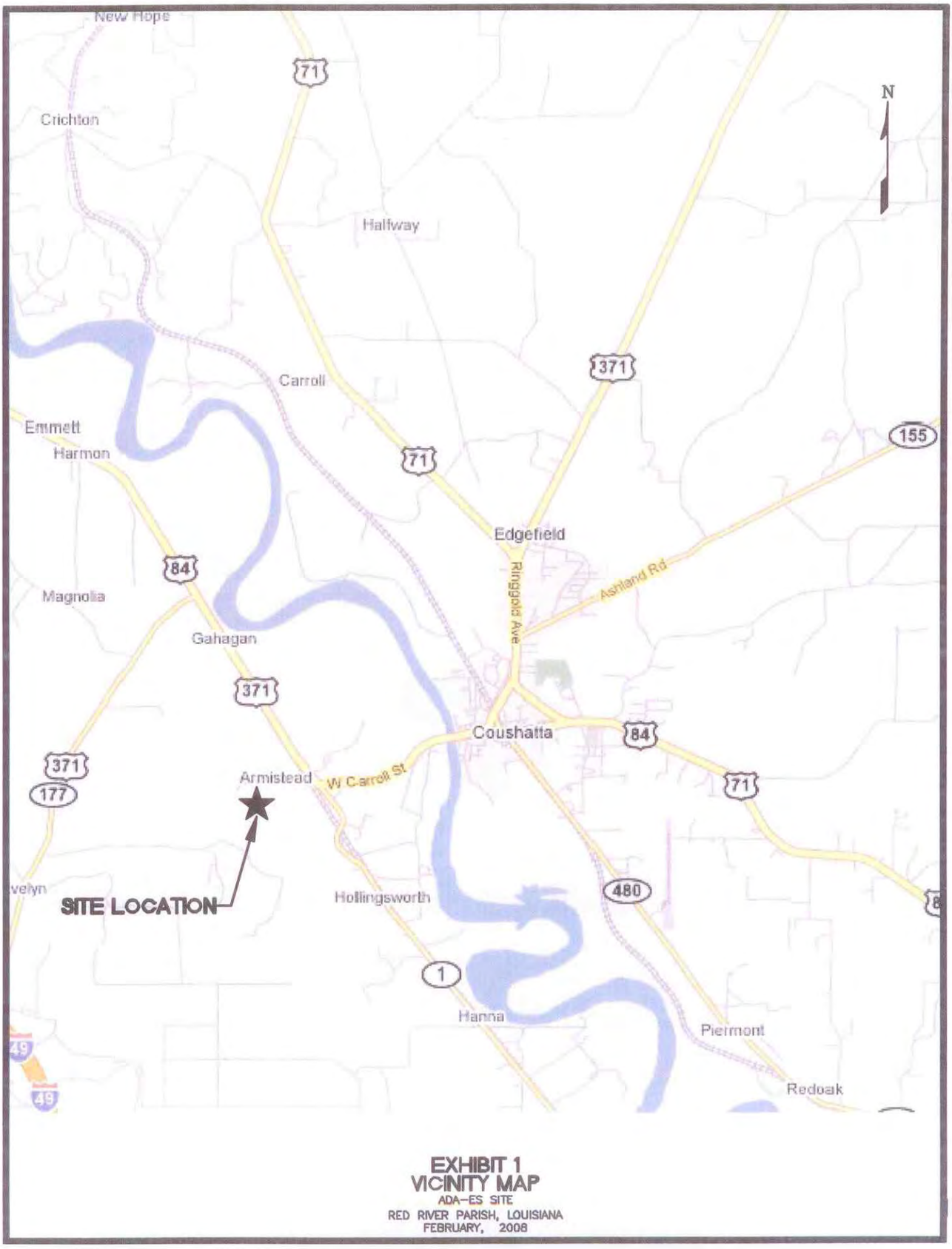


EXHIBIT 1
VICINITY MAP
ADA-ES SITE
RED RIVER PARISH, LOUISIANA
FEBRUARY, 2008

EXHIBIT 2
ADA- ES SITE MAP
ADA–ES SITE
RED RIVER PARISH, LOUISIANA
FEBRUARY, 2008

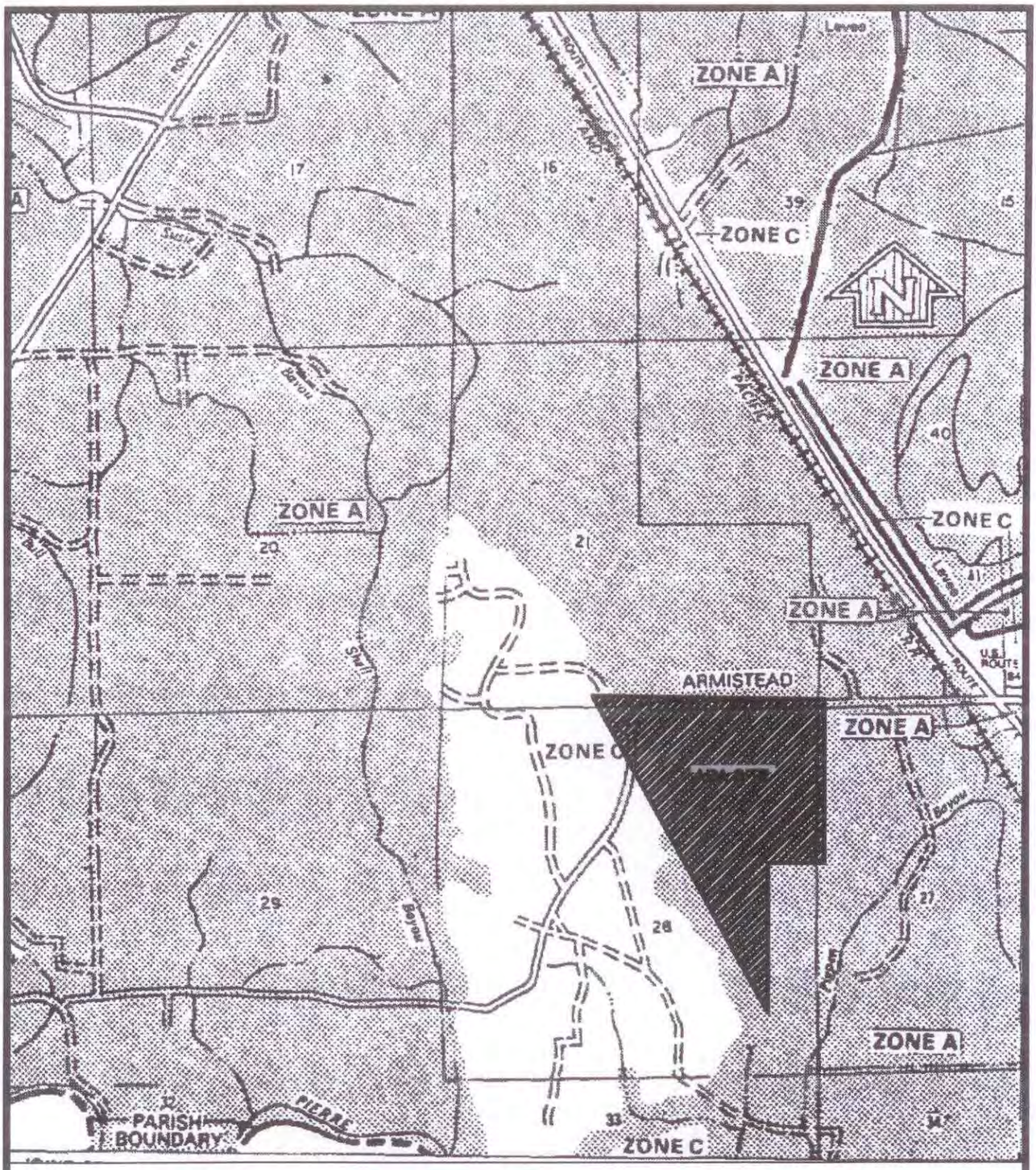


EXHIBIT 3
FIRM MAP
ADA-ES SITE
RED RIVER PARISH, LOUISIANA

EXHIBIT 4
BASE FLOOD ELEVATION
BAYOU PIERRE ANALYSIS
ADA-ES SITE
RED RIVER PARISH, LOUISIANA
FEBRUARY, 2008

APPENDIX A
DRAINAGE BASIN MAP
ARKLEX PID
RED RIVER PARISH, LOUISIANA
FEBRUARY, 2008

APPENDIX D

USACE DOCUMENTATION

DEPARTMENT OF THE ARMY
VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

January 6, 2009

Operations Division
Project Resources Management

Honorable Milton Forrest
President, Red River Levee
and Drainage District
Post Office Box 433
Coushatta, Louisiana 71019

Dear Mr. Forrest:

I refer to the permit application of December 8, 2008, from JW Porter and Associates, on behalf of Red River Environmental Products, LLC, to install one 6-inch water line and one 14-inch water line crossing the Red River Levee in Red River Parish, Louisiana. The pipelines will be installed up and over the Red River Levee on the Red River West Bank (right descending bank). The proposed work will cross the Red River Levee in Section 35, Township 12 North, Range 10 West at coordinates 31°59'14.29517" N., 93°21'34.23997" W.

The Vicksburg District has reviewed the application and has no objection to the proposed work provided it is conducted in compliance with Vicksburg District Regulation 1130-2-530. Any pipelines that are to be abandoned must be removed from the levee, and remaining voids grouted and sealed. The up-and-over levee crossing must comply with the enclosed typical buried utility crossing. The proposed air valve, shown on the applicant's drawing, shall be installed in such a way that long-term maintenance of the levee is not compromised. The utility crossing (crown and side slopes) must be covered with a minimum of 2 feet of appropriate fill material. The crown shall be sloped 1 on 20 over the pipeline. The side slopes shall be sloped to 1 on 10 over the pipeline. Bermuda turf must be re-established in any disturbed areas to prevent erosion. If there are any changes to the proposed work, we request you submit them to us for our review and re-evaluation.

It is recommended that you include the standard clause in your permit requiring any future relocation be accomplished by and at the applicant's expense. The applicant should be advised that Federal and state permits other than the local sponsor permit may be required. These might include Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, or state environmental permits.

Please be advised that a Department of the Army Section 10/404 permit may be required if work involves the discharge of dredged or fill material (land clearing, ditching, filling, leveeing, excavation, etc.) into wetlands or other waters of the United States. For work in such areas, plans should be submitted to our Regulatory Branch for a determination of permit requirements prior to starting work. You may contact Mr. Ken Mosley our Regulatory Branch at (601) 631-5289 for additional information.

Please have the applicant coordinate with Mr. David Dupre' of the Corps of Engineers' Red River Project Office prior to commencement and completion of work. Mr. Dupre' can be contacted at (318) 549-3000, extension 25104. If the applicant requires assistance from the Vicksburg District, please have him contact Mr. Neal Lewis of our Project Resources Management Branch at (601) 631-7493.

Sincerely,

Dennis O. Norris, P.E.
Chief, Operations Division

Enclosure

DEPARTMENT OF THE ARMY
VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

March 24, 2009

Operations Division
Project Resources Management

Honorable Milton Forrest
President, Red River Levee
and Drainage District
Post Office Box 433
Coushatta, Louisiana 71019

Dear Mr. Forrest:

I refer to the permit application of March 10, 2009, from JW Porter and Associates, on behalf of Red River Environmental Products, LLC, requesting an amendment to a previously approved typical utility crossing on the Red River Levee of December 8, 2008. The applicant has requested to install an 8-inch discharge line crossing the Red River Levee (right descending bank) in Red River Parish, Louisiana. The crossing is located at coordinates N31 59 14.29517, W93 21 34.23997. The applicant has indicated that once the 8-inch line crosses the riverside of the levee embankment, it will meander northward and discharge over the top bank of the Red River and down the slope through Hollingsworth Revetment. The applicant has submitted detailed drawings on how the discharge line will cut through the revetment and how the line will be anchored.

The Vicksburg District has reviewed the application and has no objection to the proposed work provided it is conducted in compliance with our District Regulation 1130-2-530. The up-and-over levee crossing must comply with the enclosed typical buried utility crossing detail. A minimum of 2 feet of material shall be placed over the pipeline along the crown as well as both levee slopes. Once the crossing is completed, all areas shall be properly turfed in order to prevent erosion. Additionally, where the proposed 8-inch waterline passes through or under the existing trench fill revetment, the owner is responsible for repairing any damage to the existing revetment and is required to restore the bank to its original grade by capping the disturbed area with an 18- to 24-inch blanket of graded stone "C". We recommend that adequate signage be placed where the pipeline enters the Red River.

Please be advised that a Department of the Army Section 10/404 permit may be required if work involves the discharge of dredged or fill material (land clearing, ditching, filling,

leveling, excavation, etc.) into wetlands or other waters of the United States. For work in such areas, plans should be submitted to our Regulatory Branch for a determination of permit requirements prior to starting work. You may contact Mr. Ken Mosley of our Regulatory Branch at (601) 631-5289 for additional information.

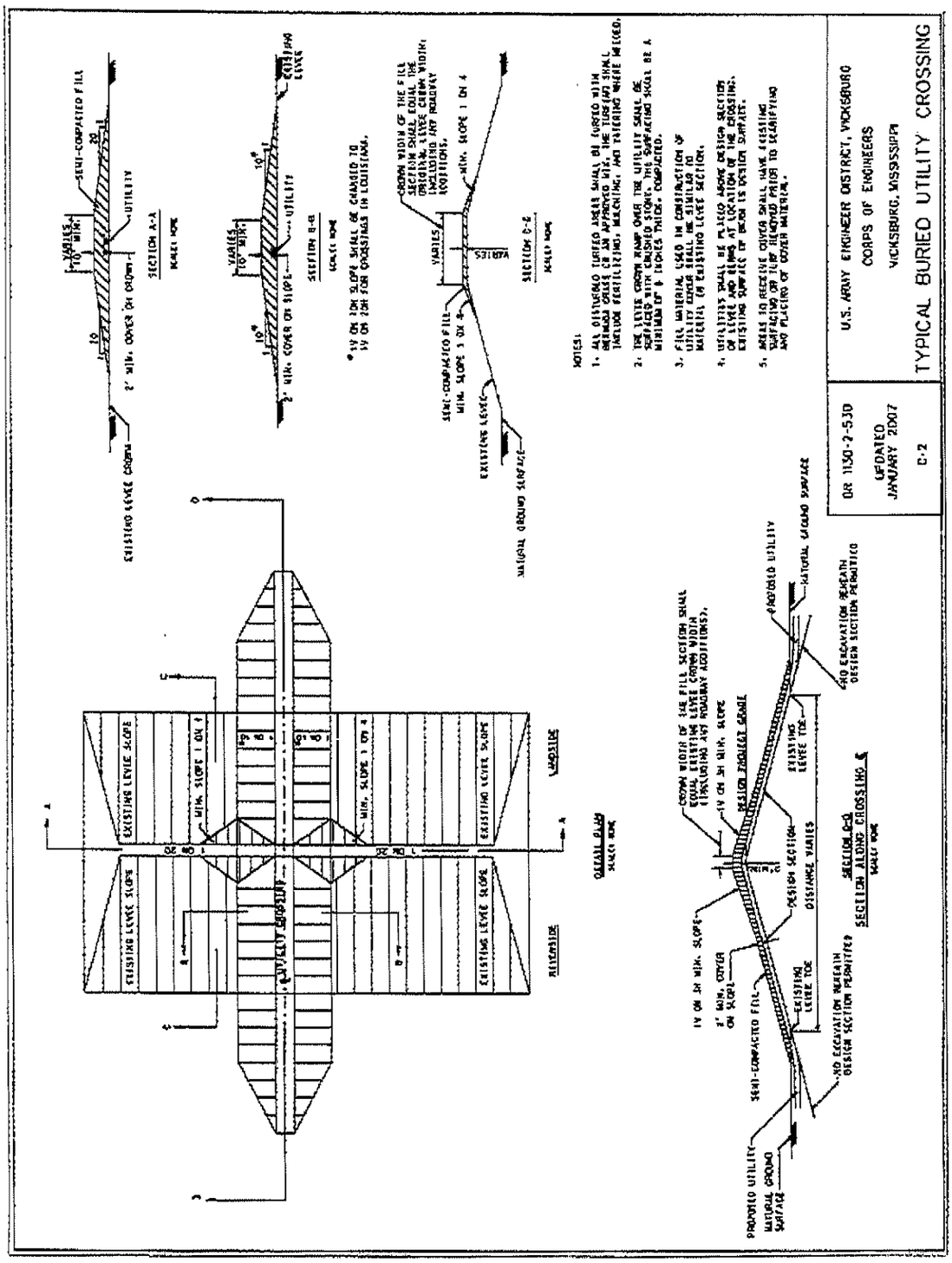
Please have the applicant coordinate with Mr. David Dupre' of the Corps of Engineers' Red River Project Office prior to commencement and completion of any work. Mr. Dupre' can be contacted at (318) 549-3000, extension 25104. If the applicant requires assistance from the Vicksburg District, please have him contact Mr. Neal Lewis of our Project Resources Management Branch at (601) 631-7493. We are forwarding a copy of this letter to Mr. Don R. Maddox, Louisiana Department of Transportation and Development, Post Office Box 38, Shreveport, Louisiana 71161.

Sincerely,

Dennis C. Norris, P.E.
Chief, Operations Division

Enclosure

DR 1130-2-530
17 Dec 06



DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

April 28, 2008

Operations Division

SUBJECT: Red River Environmental Products, LLC, South Parish Road 604 Site, Coushatta, Red River Parish, Louisiana

Ms. Andrea Adams
Red River Environmental Products, LLC
C/O ADA-ES, Incorporated
8100 South Park Way, Unit B
Littleton, Colorado 80120

Dear Ms. Adams:

Based upon the information provided, it appears that Department of the Army permit requirements for the proposed work will be authorized by Nationwide Permit No. 39, as specified in the March 12, 2007, Federal Register, Issuance of Nationwide Permits; Notice (72 FR 11092-11198), provided the activity complies with the Nationwide Permit Special Conditions (enclosure 1), the Nationwide Permit General Conditions (enclosure 2), and the Regional Conditions (enclosure 3). It is your responsibility to read and become familiar with the enclosed conditions in order for you to ensure that the activity authorized herein complies with the Nationwide Permits.

This verification is valid for a period of 2 years, or until the Nationwide Permit is modified, suspended, or revoked. Activities which are under construction or that are under contract to commence in reliance upon a Nationwide Permit will remain authorized, provided the activity is completed within 12 months of the date of any subsequent modification, expiration, or revocation of the Nationwide Permit. Upon completion of the activity authorized by this Nationwide Permit, please fill out the enclosed certification of compliance (enclosure 4) and return it to our office.

This authorization was based upon a preliminary determination that there appear to be jurisdictional areas on the property subject to regulation pursuant to Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the Clean Water Act. For your information, I have enclosed a copy of the appeals form for your review (enclosure 5).

Thank you for advising us of your plans. If you change your plans for the proposed work, or if the proposed work does not comply with the conditions of the Nationwide Permit, please contact Mr. Kevin Philley of this office, telephone (601) 631-5607, fax (601) 631-5459, or e-mail address: regulatory@usace.army.mil. In any future correspondence concerning this project, please refer to Identification No. MVK-2008-234.

I am forwarding a copy of this letter to Mr. Clay V. Fischer, Zephyr Environmental Corporation, 2600 Via Fortuna, Suite 450, Austin, Texas 78746.

The Vicksburg District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the Customer Service Survey found on our web site at http://per2.nwp.usace.army.mil/survey.html, or if more convenient, complete the enclosed survey form (enclosure 6) and return it in the envelope provided.

Sincerely,

Anthony R. Lobred
Acting Chief, Permit Section
Regulatory Branch

Enclosures

SPECIAL CONDITIONS

NATIONWIDE PERMIT No. 39

COMMERCIAL and INSTITUTIONAL DEVELOPMENTS

1. Discharges of dredged or fill material into non-tidal waters of the United States for the construction or expansion of commercial and institutional building foundations and building pads and attendant features that are necessary for the use and maintenance of the structures. Attendant features may include, but are not limited to, roads, parking lots, garages, yards, utility lines, storm water management facilities, and recreation facilities such as playgrounds and playing fields. Examples of commercial developments include retail stores, industrial facilities, restaurants, business parks, and shopping centers. Examples of institutional developments include schools, fire stations, government office buildings, judicial buildings, public works buildings, libraries, hospitals, and places of worship. The construction of new golf courses, new ski areas, or oil and gas wells is not authorized by this NWP. (Section 10 and 404)

2. The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds this 300 linear foot limit is waived in writing by the district engineer. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters.

3. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

4. Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 27.) (Sections 10 and 404)

2007 NATIONWIDE PERMIT GENERAL CONDITIONS

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

Enclosure 2

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity

is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate

Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to

authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

22. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S.

EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

26. Compliance Certification. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete

and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity:

(1) Until notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) If 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective

permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic

environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

D. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

STATE OF LOUISIANA
NATIONWIDE PERMIT (NWP) REGIONAL CONDITIONS
May 12, 2007, Final NWPs

PART I - REGIONAL CONDITIONS FOR ALL NWPS:

Regional Condition 1. No activity may cause the permanent loss of greater than 1/2 acre of seasonally inundated cypress swamp and/or cypress-tupelo swamp.

Regional Condition 2. No activity may cause the permanent loss of greater than 1/2 acre of pine savanna, pine flatwoods and/or pitcher plant bogs.

Regional Condition 3. No activity is authorized under any NWP permit which has been determined to have an adverse impact upon a federal or state designated rookery and/or bird sanctuary.

Regional Condition 4. No existing den or candidate den trees may be felled within areas known to be occupied by the threatened Louisiana black bear. (Candidate den trees are defined as bald cypress and/or tupelo gum with visible cavities, having a minimum diameter-at-breast-height of 36 inches, and associated with rivers, lakes, streams, bayous, sloughs or other waterbodies.)

Regional Condition 5. Due to the occurrence of threatened or endangered species, **Pre-Construction Notification** shall be required for **ALL** instream activities in the following waterways: Bayou Boeuf Tributaries in Rapides Parish: (Brown Creek, Mack Branch, Clear Creek, Little Brushy Creek, Loving Creek, Little Loving Creek, Long Branch, Bayou Clear, Castor Creek, Valentine Creek, and Little Bayou Clear), Amite River (LA Highway 37 at Grangeville to Port Vincent), Bogue Falaya River and Tributaries, Abita River and Tributaries, Bayou Chinchuba (between U.S. 190 and Louisiana Highway 59), West Pearl River, Bogue Chitto River and Tributaries, and Red River tributaries in Grant Parish (Black Creek, Swafford Creek, Cypress Creek, Beaver Creek, Cress Creek, Jordon Creek, Hudson Creek, Gray Creek, Moccosin Branch and James Branch).

Regional Condition 6. The Department of the Army (DA) authorization shall be conditioned to require that any excavated and/or fill material placed within wetlands must be free of contaminants, to the best of the applicant's knowledge.

Regional Condition 7. For work within the Louisiana Coastal Zone and/or the Outer Continental Shelf off Louisiana;

a. An application for work must first be submitted to the Louisiana Department of Natural Resources, Coastal Management Division who will then forward the request to the Corps of Engineers.

b. NWP requests that have not received a Coastal Use Permit or other consistency determination from the CMD would be processed by the Corps but granted authorization would be conditioned to require the applicant to obtain appropriate authorization from CMD before the NWP is valid.

c. The New Orleans District's Programmatic General Permit generally supersedes the Nationwide Permit authorization for activities located within the Louisiana Coastal Zone as

incorporated within the New Orleans Corps District boundaries. Projects will not qualify for a Nationwide Permit if they qualify for the Programmatic General Permit.

Regional condition 8. A Pre-Construction Notification, as defined under nationwide general condition 27, will be provided for all activities (except those covered by the **pipeline safety program designated time-sensitive inspections and repairs – NWP 47**) that meet one or both of the following criteria;

a. Adversely affects greater than 1/10 acre of wetlands, and/or

b. Adversely impacts a designated Natural and Scenic River, a state or federal wildlife management area and/or refuge.

PART II - REGIONAL CONDITIONS FOR SPECIFIC NWPS

NWP 1. *Aids to Navigation*:

No additional regional conditions are in effect.

NWP 2. *Structures in Artificial Canals*:

No additional regional conditions are in effect.

NWP 3. *Maintenance*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 4. *Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities*:

No additional regional conditions are in effect.

NWP 5. *Scientific Measurement Devices*:

A Pre-Construction Notification, as defined under nationwide general condition 27, is required for all weirs and flumes in any water of the United States.

NWP 6. *Survey Activities*:

Pre-Construction Notification, as defined under nationwide general condition 27, is required for all **seismic survey activities.** The state and federal resource agencies will be forwarded a copy of the Pre-Construction Notification regardless of acreage impact.

NWP 7. *Outfall Structures and Maintenance*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

Activities that include the construction of intake structures must include adequate fish screening devices.

NWP 8. *Oil and Gas Structures*:

No additional regional conditions are in effect.

NWP 9. *Structures in Fleeting and Anchorage Areas*:

No additional regional conditions are in effect.

NWP 10. *Mooring Buoys*:

No additional regional conditions are in effect.

NWP 11. *Temporary Recreational Structures*:

No additional regional conditions are in effect.

NWP 12. *Utility Line Activities*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

A 50-foot gap shall be required for every 500 linear feet of sidecast material resulting from trench excavation activities associated with utility line construction. Under certain circumstances the gap intervals may be modified. Additionally, no fill shall be placed in a manner which would impede natural watercourses.

Pre-Construction Notification, as defined under nationwide general condition 27, is required for **utility line activities** regardless of impact acreage. The U.S. Fish and Wildlife Service and National Marine Fisheries Service will be forwarded a copy of the Pre-Construction Notification.

NWP 13. *Bank Stabilization*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 14. *Linear Transportation Projects*:

Pre-Construction Notification, as defined under nationwide general condition 27, is required for all **linear transportation crossings** regardless of impact acreage. The U.S. Fish and Wildlife Service and National Marine Fisheries Service will be forwarded a copy of the Pre-Construction Notification for all NWP #14 activities.

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 15. *U.S. Coast Guard Approved Bridges*:

No additional regional conditions are in effect.

NWP 16. *Return Water from Upland Contained Disposal Areas*:

No additional regional conditions are in effect.

NWP 17. *Hydropower Projects*:

No additional regional conditions are in effect.

NWP 18. *Minor Discharges*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 19. *Minor Dredging*:

No additional regional conditions are in effect.

NWP 20. *Oil Spill Cleanup*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 21. *Surface Coal Mining Activities*:

This NWP, via disavowal of water quality certification by the Louisiana Department of Environmental Quality, is considered **denied** without prejudice. Individual requests for approval under this NWP will be considered on a case-by-case basis only after receipt by the appropriate Corps district of an individual water quality certification, waiver, or other approval by the Louisiana Department of Environmental Quality.

NWP 22. *Removal of Vessels*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 23. *Approved Categorical Exclusions*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 24. *State Administered Section 404 Programs*:

Not applicable in the state of Louisiana.

NWP 25. *Structural Discharges*:

No additional regional conditions are in effect.

NWP 26. *(RESERVED)*

NWP 27. *Stream and Wetland Restoration Activities*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

No activities shall be authorized that would convert tidal wetlands to another aquatic habitat type.

NWP 28. *Modifications of Existing Marinas*:

No additional regional conditions are in effect.

NWP 29. *Single-Family Housing*:

This NWP, via disavowal of water quality certification by the Louisiana Department of Environmental Quality, is considered **denied** without prejudice. Individual requests for approval under this NWP will be considered on a case-by-case basis only after receipt by the appropriate Corps district of an individual water quality certification, waiver, or other approval by the Louisiana Department of Environmental Quality.

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 30. *Moist Soil Management for Wildlife*:

Pre-Construction Notification, as defined under nationwide general condition 27, is required for all activities regardless of the impact acreage. The U.S. Fish and Wildlife Service and the Louisiana Wildlife and Fisheries will be forwarded a copy of the complete Pre-Construction Notification. A copy of the water-level management plan must be submitted as part of the Pre-Construction Notification.

NWP 31. *Maintenance of Existing Flood Control Facilities*:

This NWP, via disavowal of water quality certification by the Louisiana Department of Environmental Quality, is considered **denied** without prejudice. Individual requests for approval under this NWP will be considered on a case-by-case basis only after receipt by the appropriate Corps district of an individual water quality certification, waiver, or other approval by the Louisiana Department of Environmental Quality.

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 32. *Completed Enforcement Actions*:

No additional regional conditions are in effect.

NWP 33. *Temporary Construction, Access and Dewatering*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 34. *Cranberry Production*:

Not applicable within the state of Louisiana.

NWP 35. *Maintenance Dredging of Existing Basins*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 36. *Boat Ramps*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 37. *Emergency Watershed Protection and Rehabilitation*:

No additional regional conditions are in effect.

NWP 38. *Cleanup of Hazardous and Toxic Waste*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 39. *Residential, Commercial and Institutional Developments*:

This NWP, via disavowal of water quality certification by the Louisiana Department of Environmental Quality, is considered **denied** without prejudice. Individual requests for approval under this NWP will be considered on a case-by-case basis only after receipt by the appropriate

Corps district of an individual water quality certification, waiver, or other approval by the Louisiana Department of Environmental Quality.

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

Work which would result in the resuspension of dredged material shall be prohibited in Bayou d'Inde, the Inner Harbor Canal, Calcasieu River at the mouth of Bayou d'Inde, Harvey Canal, California Canal, and Bayous Trepagnier, Rigaud, Olsen and Verdine, Capitol Lake, Coon Island Loop, Devil's Swamp, and Tensas River (areas within and upstream of Tensas National Wildlife Refuge), Ouachita River (areas within and upstream of the Upper Ouachita National Wildlife Refuge), Wham Brake drainage (Staulkinghead Creek, Little Bayou Boeuf, Bayou Lafourche and Lake Irwin).

NWP 40. *Agricultural Activities*:

This NWP, via disavowal of water quality certification by the Louisiana Department of Environmental Quality, is considered **denied** without prejudice. Individual requests for approval under this NWP will be considered on a case-by-case basis only after receipt by the appropriate Corps district of an individual water quality certification, waiver, or other approval by the Louisiana Department of Environmental Quality.

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 41. *Reshaping Existing Drainage Ditches*:

No discharges shall be allowed under this NWP that would adversely impact mature riparian corridors.

Work which would result in the resuspension of dredged material shall be prohibited in Bayou d'Inde, the Inner Harbor Canal, Calcasieu River at the mouth of Bayou d'Inde, Harvey Canal, California Canal, and Bayous Trepagnier, Rigaud, Olsen and Verdine, Capitol Lake, Coon Island Loop, Devil's Swamp, and Tensas River (areas within and upstream of Tensas National Wildlife Refuge), Ouachita River (areas within and upstream of the Upper Ouachita National Wildlife Refuge), Wham Brake drainage (Staulkinghead Creek, Little Bayou Boeuf, Bayou Lafourche and Lake Irwin).

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 42. *Recreational Facilities*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual

requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

Work which would result in the resuspension of dredged material shall be prohibited in Bayou d'Inde, the Inner Harbor Canal, Calcasieu River at the mouth of Bayou d'Inde, Harvey Canal, California Canal, and Bayous Trepagnier, Rigaud, Olsen and Verdine, Capitol Lake, Coon Island Loop, Devil's Swamp, and Tensas River (areas within and upstream of Tensas National Wildlife Refuge), Ouachita River (areas within and upstream of the Upper Ouachita National Wildlife Refuge), Wham Brake drainage (Staulkinghead Creek, Little Bayou Boeuf, Bayou Lafourche and Lake Irwin).

NWP 43. *Stormwater Management Facilities*:

This NWP, via disavowal of water quality certification by the Louisiana Department of Environmental Quality, is considered **denied** without prejudice. Individual requests for approval under this NWP will be considered on a case-by-case basis only after receipt by the appropriate Corps district of an individual water quality certification, waiver, or other approval by the Louisiana Department of Environmental Quality.

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

Work which would result in the resuspension of dredged material shall be prohibited in Bayou d'Inde, the Inner Harbor Canal, Calcasieu River at the mouth of Bayou d'Inde, Harvey Canal, California Canal, and Bayous Trepagnier, Rigaud, Olsen and Verdine, Capitol Lake, Coon Island Loop, Devil's Swamp, and Tensas River (areas within and upstream of Tensas National Wildlife Refuge), Ouachita River (areas within and upstream of the Upper Ouachita National Wildlife Refuge), Wham Brake drainage (Staulkinghead Creek, Little Bayou Boeuf, Bayou Lafourche and Lake Irwin).

NWP 44. *Mining Activities*:

This NWP, via disavowal of water quality certification by the Louisiana Department of Environmental Quality, is considered **denied** without prejudice. Individual requests for approval under this NWP will be considered on a case-by-case basis only after receipt by the appropriate Corps district of an individual water quality certification, waiver, or other approval by the Louisiana Department of Environmental Quality.

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

Work which would result in the resuspension of dredged material shall be prohibited in Bayou d'Inde, the Inner Harbor Canal, Calcasieu River at the mouth of Bayou d'Inde, Harvey Canal, California Canal, and Bayous Trepagnier, Rigaud, Olsen and Verdine, Capitol Lake, Coon Island Loop, Devil's Swamp, and Tensas River (areas within and upstream of Tensas National Wildlife

Refuge), Ouachita River (areas within and upstream of the Upper Ouachita National Wildlife Refuge), Wham Brake drainage (Staulkinghead Creek, Little Bayou Boeuf, Bayou Lafourche and Lake Irwin).

NWP 45. *Emergency Repair Activities*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 46. *Discharges into Ditches and Canals*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 47. *Pipeline Safety Program Designated Time Sensitive Inspections and Repairs:*

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 48. *Commercial Shellfish Aquaculture Activities*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 49. *Coal Remining Activities*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

NWP 50. *Underground Coal Mining Activities*:

This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered **denied** without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will ***be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.***

PART III - WATER QUALITY REGIONAL NWPS CONDITIONS FOR "INDIAN COUNTRY" LANDS

The Environmental Protection Agency (EPA) is the agency required to address water quality certification of the 2007 nationwide permits (NWPs) in Indian country[1] where a tribe has not received treatment in the same manner as a state for the Clean Water Act (CWA) Section 401 program. Tribes which have received treatment in the same manner as a state (TAS) for the water quality standards and §401 certification programs and which have EPA-approved water quality standards will be contacted by the Corps of Engineers for the water quality certification process. EPA is the agency required to address water quality certification for tribes that have not received TAS for the water quality standards and 401 certification programs. At this time, no Indian tribes in Louisiana have CWA Section 401 authority.

1. The permittee shall conduct all work in such a manner to comply with all U.S. Army Corps of Engineers §404 permit conditions.

2. The permittee shall keep a copy of this certification with conditions at the project site during all phases of construction. All contractors or subcontractors involved in the project must be provided a copy of this certification prior to commencement of activities.

3. All heavy equipment used in the project areas shall be steam cleaned before the start of the project and inspected daily for leaks. Leaking equipment must not be used in or near surface water or in a wetland area. Equipment shall be parked outside the waterbody when not in use.

4. All fuels, oil, hydraulic fluid, or other substances of this nature must not be stored, temporarily or otherwise, within the normal floodplain or the wetland. A secondary containment system for these items shall be used in the event the primary containment system leaks. Refueling or servicing of equipment must not take place within 100 feet of any watercourse or within the wetland area.

5. The construction area shall be protected such that a runoff event will not move soil or contaminants to surface water or away from the construction site. These measures shall be in place prior to the commencement of activities and inspected daily.

6. Temporary mats must be placed on stream banks, riparian areas, and wetlands, to minimize impacts to soil and vegetation from heavy equipment. Temporary access roads must be restored to pre-project conditions.

7. All asphalt, concrete, and other construction materials must be properly handled and contained to prevent releases to the stream channels. All concrete that is to be poured must be fully contained in mortar-tight forms to prevent accidental releases to surface water or ground

[1] "Indian Country", as defined in 18 U.S.C. 1151, means: (1) all land within the limits of any Indian reservation under the jurisdiction of the United States government, not withstanding the issuance of any patent, and including rights-of-way running through the reservation; (2) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

water. No discharge of any concrete to surface water or ground water may occur. Dumping of waste materials near watercourses is strictly prohibited.

8. Work in a stream channel should be limited to periods of no flow when practicable, and must be limited to periods of low flow. Avoid working within the channel during spring runoff or summer thunderstorm season.

9. When working in a stream channel, flowing water must be temporarily diverted around the work area to minimize sedimentation and turbidity problems. Acceptable diversion structures are non-erosive and include (but are not limited to) sand bags, water bladders, concrete barriers lined with plastic, and flumes.

10. The permittee shall restore all areas disturbed by construction activities to pre-project conditions. This shall include restoration of surface contours, stabilization of the soil, and restoration of appropriate native vegetation to establish permanent cover.

Certification of Compliance
With Department of the Army Permit

Nationwide Permit Number:	NW 39
Identification Number:	MVK-2008-234
Name of Permittee:	Red River Environmental Products, LLC
Issued Date:	04/28/2008
Evaluator name:	Kevin Philley
Expiration Date:	04/28/2010

Upon completion of the activity authorized by this permit, sign this certification and return it to the following address:

USACE, Vicksburg District
ATTN: Regulatory Branch
4155 Clay Street
Vicksburg, Mississippi 39183-3435

Please note that your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit modification, suspension, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit including any required mitigation.

Date work was completed: _____

_____ _____

Signature of Permittee Date Signed

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Red River Environmental Products, LLC	File Number: MVK-2008-234	Date: April 28, 2008
Attached is:		See Section Below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

• ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations (JD) associated with the permit.

• OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

• ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

• APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

• ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

• APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Kevin Philley
U.S. Army Corps of Engineers
Regulatory Branch
4155 Clay Street
Vicksburg, MS 39183-3435
(601) 631-5607

If you only have questions regarding the appeal process you may also contact:

Division Engineer
Attn: Appeals Review Officer
Mississippi Valley Division
Post Office Box 80
Vicksburg, MS 39181-0080
(601)634-5820

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
Signature of appellant or agent.		

Approved: 9 May 2006
OMB No.: 0710-0012
Expires: 31 May 2009

The Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0710-0012), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that nonwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE ADDRESS. RETURN COMPLETED APPLICATION TO THE ADDRESS SHOWN ON THE APPLICATION INSTRUCTION SHEET .

CUSTOMER SERVICE SURVEY - REGULATORY PROGRAM
US ARMY CORPS OF ENGINEERS

We at the U.S. Army Corps of Engineers Regulatory Branch are committed to improving service to our customers and would like to know how well we have been doing. Who are our customers? You are our **customers** if you submitted a permit application, requested a jurisdictional determination or wetland delineation, or scheduled a pre-application meeting with us. **Other customers** include those of you who receive our Public Notice and/or commented on a particular project or our work in general, because of your interest in the Regulatory Program. To identify how we can better serve you, we need your help. Please take the time to fill out this brief survey and mail it back to us. Your honest opinions will help us determine areas in which we need to improve. For each question, please indicate the level of service you received by marking the appropriate number on a scale from 1-5, with 1 being low (dissatisfied) and 5 being high (very satisfied). If the question does not apply to you, simply mark N/A. Thank you for your time and comments! Response to this survey is **VOLUNTARY**. If you choose not to respond, it will not affect any current or future dealings you may have with the USACE in any way.

I. FOR APPLICANTS & OTHERS REQUIRING AUTHORIZATIONS	***LOW SATISFACTION***			***HIGH SATISFACTION***		
1. Do you think you received your Corps permit decision in a reasonable amount of time?	O 1	O 2	O 3	O 4	O 5	O NA
2. Do you think you received your Corps jurisdictional determination in a reasonable amount of time?	O 1	O 2	O 3	O 4	O 5	O NA
3. If we recommended/required project changes/modifications to reduce impacts, did we clearly explain the reasons why?	O 1	O 2	O 3	O 4	O 5	O NA
4. If we recommended/required project changes/modifications to reduce impacts, did the changes seem reasonable to you?	O 1	O 2	O 3	O 4	O 5	O NA
5. If we denied your permit, did we clearly explain the reasons why?	O 1	O 2	O 3	O 4	O 5	O NA
6. For enforcement cases, did our office clearly and professionaly explain the basis for the enforcement action (e.g., what work we believe you performed without authorization?	O 1	O 2	O 3	O 4	O 5	O NA
7. For enforcement cases, did our office include options for resolution?	O 1	O 2	O 3	O 4	O 5	O NA
II. FOR "OTHER" CUSTOMERS						
1. For permitted actions, was the permit effective in achieving appropiate protection/mitigation for impacts to aquatic resources?	O 1	O 2	O 3	O 4	O 5	O NA
2. For enforecement actions, did the Corps require appropiate compensation/ restoration for impacts to aquatic resources?	O 1	O 2	O 3	O 4	O 5	O NA
III. FOR APPLICANTS & "OTHER" CUSTOMERS						
1. Did the Corps representative act professionally and treat you with courtesy?	O 1	O 2	O 3	O 4	O 5	O NA
2. Did the Corps provide sufficient information to allow you to complete an application form, comment on public notice, or otherwise evaluate our work?	O 1	O 2	O 3	O 4	O 5	O NA
3. Did the Corps respond to your letters and telephone calls in a reasonable amount of time?	O 1	O 2	O 3	O 4	O 5	O NA
4. Did the Corps representative answer your questions clearly, giving you accurate information about our Regulatory Program?	O 1	O 2	O 3	O 4	O 5	O NA

5. What is your OVERALL rating of the level of service provided by the Corps of Engineers Regulatory Program?	○ 1	○ 2	○ 3	○ 4	○ 5	○ NA

Note: DATA FROM THIS QUESTIONNAIRE WILL BE USED BY THE DISTRICT TO IMPROVE SERVICE. ALSO, INFORMATION WILL BE
TABULATED NATIONALLY BY SERVICE AREA. RESPONDENTS WILL NOT BE IDENTIFIED BY NAME OR ORGANIZATION FOR ANY REPORT DERIVED FROM THE SURVEY.

PLEASE COMPLETE THE FOLLOWING QUESTIONS BY GIVING US ANY COMMENTS OR SUGGESTIONS FOR HOW WE CAN IMPROVE

Please indicate the nature of your business *(if applicable, check more than one)*:

- ☐ Property Developer
- ☐ Public Agency Applicant
- ☐ Civic or Trade Organization
- ☐ Member of Legislature
- ☐ Federal/State/Local
- ☐ Conservation Organization
- ☐ Flood/Water Control District
- ☐ Consultant
- ☐ Farming/Ranching
- ☐ Public Agency
- ☐ Personal/Private Project
- ☐ Adjacent Property Owner
- ☐ Sand & Gravel
- ☐ Law Office
- ☐ Silviculture
- ☐ Mining
- ☐ Media
- ☐ Native American

Other *(describe)*:

What Service(s) Did You Seek From the Corps? *(if applicable, check more than one)*:

- ☐ General Information
- ☐ Pre-application Consultation
- ☐ Nationwide General Permit
- ☐ Regional or Programmatic Permit
- ☐ Standard Individual Permit
- ☐ Letter of Permission
- ☐ Jurisdictional/Wetland Determination
- ☐ Resolution of Violation/Non-compliance
- ☐ Regulatory Program Presentation
- ☐ Commented on Public Notice/Permit Application

Other *(describe)*:

Which Corps office did you deal with? Vicksburg - District Office

Name of person you contacted in that office *(optional)*:

Do you have any comments or suggestions on the Regulatory Program?

Information about you *(optional)*:

Name/Title:

Address:

Telephone *(include area code)*:

May we contact you? YES ○ NO ○

Authorities: The government Performance and Results Act of 1993 and Executive Order (EO) 12862, "Setting Customer Service Standards", dated September 11, 1993. Purpose: To determine the qualify of services our customers expect, as well as their satisfaction with USACE's existing services. Information provided on this form will be used in evaluating the performance of the Corps Regulatory Program. Routine Uses: This information may be shared with the Office of Management and Budget, members of Congress, and other federal, state, and local government agencies. Disclosure: Providing requested information is voluntary. Failure to provide this information will not result in an adverse action.
(Reverse of Eng Form 5065)

Send Form

Andrea Adams

Subject: FW: Red River Environmental MVF-2008-234

-----Original Message-----
From: Lobred, Anthony R MVK [mailto:Anthony.R.Lobred@usace.army.mil]
Sent: Tuesday, January 20, 2009 7:39 AM
To: Clay Fischer
Subject: RE: Red River Environmental MVF-2008-234

Mr Fischer,

Based upon the information gathered from the Mr. Jamie Phillipe of LDEQ, the oxbow location for the intake is not in the navigable channel nor within a revetment area and the Levee board's approval for the project, your NW39 is
still valid for the project as you have proposed. NO further coordination is required with this office unless you change your plans further.
If there are any questions about this action, please forward all calls to me.

Sincerely

Anthony R Lobred
Biologist/Senior Environmental Specialist Compliance Officer Regulatory Branch Vicksburg District Corps of Engineers
Phone: (601) 631-5470
Fax: (601) 631-5459
In order to assist us in improving our service to you, please complete the survey found at http://per2.nwp.usace.army.mil/survey.html

-----Original Message-----
From: Clay Fischer [mailto:cfischer@zephyrenv.com]
Sent: Monday, January 19, 2009 9:57 AM
To: Lobred, Anthony R MVK
Subject: RE: Red River Environmental MVF-2008-234

Mr. Lobred,

Hope you had a great weekend and all is well.

I have spoken with the client again and they indicated that an email indicating the project is still authorized under NWP 39 with a signature block would be satisfactory in lieu of a letter.

Please contact me with any questions or needs.

Regards,

Clay

Clay V. Fischer
Natural Resources Project Manager
Zephyr Environmental Corp.
2600 Via Fortuna

DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

April 7, 2009

Operations Division

SUBJECT: Modification Request for Authorization Under Nationwide Permit No. 39, MVK-2008-234

Ms. Andrea Adams
Red River Environmental Products, LLC
c/o ADA-ES, Incorporated
8100 South Park Way, Unit B
Littleton, Colorado 80120

Dear Ms. Adams:

I refer to the March 18, 2009, letter from Mr. Clay V. Fischer, Zephyr Environmental Corporation, requesting modifications to your Department of the Army permit for the proposed Red River Environmental Products, LLC, South Parish Road 604 Site, Coushatta, Red River Parish, Louisiana, to reflect the changes as described in your letter and as shown on the enclosed drawings (enclosure 1).

The requested modification of the subject permit is hereby approved. Please retain this letter and enclosure with your permit file, since it will become a part of the original authorization (enclosure 2). Also, the General and Special Conditions of the Permit still apply to your modified project.

Please be advised that any deviation from the plans or location of the modified work must be approved by this office prior to the commencement of any work.

Thank you for advising us of your plans. If you change your plans for the proposed work or if the proposed work does not comply with the conditions of the Nationwide Permit, please contact Mr. Kevin Philley, telephone (601) 631-5607 or fax (601)631-5459. In any future correspondence concerning this project, please refer to Identification No. MVK-2008-234.

I am forwarding a copy of this letter to Mr. Clay V. Fischer, Zephyr Environmental Corporation, 2600 Via Fortuna, Suite 450, Austin, Texas 78746.

The Vicksburg District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the Customer Service Survey found on our web site at http://per2.nwp.usace.army.mil/survey.html. If it is more convenient for you, please complete and return the enclosed postage-paid post card (enclosure 3).

Sincerely,

David Lofton
Chief, Permit Section
Regulatory Branch

Enclosures

March 18, 2009

Mr. Kevin Philley
Project Manager
U.S. Army Corps of Engineers, Vicksburg District
Attention: CEMVK-OD-F
Regulatory Branch
4155 Clay Street
Vicksburg, Mississippi 39183-3435

RE: Second Supplemental Pre-Construction Notification Submittal
Red River Environmental Products, LLC
Coushatta, Red River Parish, Louisiana
Identification No. MVK-2008-234

Dear Mr. Philley:

On behalf of our client (applicant):

Red River Environmental Products, LLC
8100 South Park Way, Unit B
Littleton, Colorado 80120
(303) 339-8847
Attn: Andrea Adams

Zephyr Environmental Corporation (Zephyr) submits this second supplemental pre-construction notification (PCN) to explain and detail changes to the above-mentioned project for Red River Environmental Products, LLC (RREP). Previously, this project was authorized under Nationwide Permit (NWP) 39 (MVK 2008-234) on April 28, 2008. Subsequent changes to the project were authorized under the same permit by your office on January 20, 2009. Construction of the previously approved portions of the project has proceeded. However, due to unanticipated design requirements and unexpected changes in potential electric service options, additional revisions to the project are necessary. As such, a wastewater outfall on the Red River is now necessary, as well as a substation and electric line from an existing Cleco Electric main line approximately four miles north of the facility site. Zephyr, the applicant, and project engineers have worked during the planning process to avoid and minimize impacts to the maximum extent practicable. The newly proposed Red River outfall line right-of-way (ROW) and discharge will require impacts to Rivers and Harbors Act Section 10 (Section 10) and additional Clean Water Act Section 404 (Section 404) areas. The newly proposed electric line ROW is anticipated to span several Section 404 areas but not to be constructed in or impact any of these areas. This supplemental PCN details the anticipated impacts to Section 10 and Section 404 areas within the proposed outfall water line and electric line ROWs. All anticipated impacts are below the current NWP 39 limitations.

Enc. 1

SITE DESCRIPTION

The northern portion of the proposed electric line ROW will begin approximately four miles north of the facility site (see Figures 1 and 3 in Appendix A). Immediately north of the intersection of US Highway 1 and the existing Cleco Electric main line, a substation will be constructed to route power to/from the RREP site. From the substation, the proposed electric line ROW will traverse to the west side of US Highway 1. From this point, the proposed electric line ROW will parallel an existing electric line ROW which generally parallels US Highway 1 to the west. The proposed electric line ROW will parallel the existing electric line ROW southeast (30-foot offset to the west) for approximately 14,000 feet at which point the ROW will continue in a more southerly heading (30-foot offset to the east) for approximately 4,200 feet to the RREP site. In general, the proposed electric line ROW exhibits improved pasture conditions dominated by introduced grasses with a few interspersed native trees. However, the northernmost portion of the electric line ROW traverses approximately 3000 feet of planted red oak woodland. The approximate geographic coordinates of the electric line ROW termini are latitude 32° 3' 21.3" N and longitude 93° 25' 1.7" W and latitude 32° 0' 15.9" N and longitude 93° 23' 34.9" W.

The proposed outfall line ROW will parallel (within the same trench) the previously proposed and authorized water intake line ROW along Pig Pen Bayou from the facility site approximately 2.5 miles southeast to Parish Road 601. Approximately 50 feet east of Parish Road 601, the outfall ROW will divert northeast and generally follow the top bank line of Hollingsworth Cutoff to the Red River (Figures 2 and 4 in Appendix A). Current conditions exhibited over the proposed ROW are described as agricultural hay pasture between US Highway 1 and the Red River to the east. Conditions exhibited on the section of the ROW across Red River Mine (RRM) are described as dense herbaceous vegetation.

The proposed discharge will be located on the bank of the Red River and extend approximately 143 feet from the top bank into the river Conditions immediately adjacent to the Red River are described as level to gently sloping and dominated by woody species. The approximate geographic coordinate of the discharge is latitude 31° 59' 29.5" N and longitude 93° 21' 22.3" W.

SECTION 404 AND SECTION 10 JURISDICTIONAL DETERMINATION/DELINEATION

The jurisdictional determination consisted of a pre-field literature review and field reconnaissance efforts conducted to characterize onsite hydric features and determine the presence or absence of Section 10 and 404 jurisdictions. The location of waters of the US and other features associated with the newly proposed electric line and outfall line ROW's were documented using a Trimble ProXrs GPS system with a TS-C1 Trimble data collector. The unit was configured to work with Omnistar satellite and to only plot fixed positions when at least four satellites were available and Position Dilution of Precision was below 6 to assure sub-meter accuracy. The datum used for the collection of GPS points was Universal Transverse Mercator North American Datum 83, Zone 15 North. Hydric feature location points were overlain on United States Geological Survey (USGS) topographic maps and acreage of impacts was determined with ArcGIS 9, ArcMap Version 9.2.

Literature Review

The pre-field evaluation for the entire site included a review of the USGS 1-meter Digital Orthophotograph Quarter Quadrangle: Harmon (southeast) aerial photography (2004); as well as aerial photography obtained by RRM from a private contractor. Aerial photography provided by RRM included parts of Evelyn and Hanna USGS quadrangles: USGS 7.5-minute Digital Raster Graphic Evelyn, Hanna, and Harmon quadrangle (1998); and the web-based soils survey information from the Natural Resources Conservation Service (NRCS). Data for the National Wetland Inventory map and a Federal Emergency Management Agency Flood Insurance Rate Map are not available for the site.

According to the USGS quadrangle map, the project area terrain is generally flat with on-site elevations ranging from approximately 125 feet above mean sea level (MSL) to 130 feet above MSL. Pig Pen Bayou provides drainage for the area. However, Pig Pen Bayou has been re-routed east towards an unnamed tributary as part of normal RRM operations. The re-route is not indicated in the USGS quadrangle map. According to the USGS quadrangle map, potential waters of the US impacted by the proposed electric line and outfall line ROW's include Honey Bayou, an unnamed abandoned slough of the Red River, Pig Pen Bayou, an unnamed tributary of Pig Pen Bayou, and the Red River. The Red River is classified as a Section 10 regulated water of the US.

The 2004 aerial photograph indicates that the subject site was being utilized for agricultural purposes (most likely hay farming). Honey Bayou, an unnamed abandoned slough of the Red River, Pig Pen Bayou, an unnamed tributary of Pig Pen Bayou, and the Red River are evident in the aerial photograph in their pre-mining condition.

As mapped by the NRCS, the proposed electric line and outfall line ROW's traverse several soil types. The soil types most often encountered by either ROW are the Coushatta silty clay loam, and Moreland clay. These soil types are generally described as moderately deep to deep, clay and silty clay layers and usually associated with natural levees. Other soil types traversed by the proposed Water Line include Armistead clay, Buxin clay, Caspiana silt loam, Coushatta silt loam, Coushatta silty clay loam, Moreland silt loam, and Perry clay. Only Buxin and Perry clays (traversed by the proposed electric line and substation) are listed as hydric on the county or National Hydric Soils of the United States list.

Field Reconnaissance

Zephyr has conducted a field reconnaissance of both ROW's (see site photos in Appendix B). Field reconnaissance efforts included a preliminary jurisdictional determination and a habitat assessment for the pallid sturgeon and interior least tern. Portions of all "waters of the US" impacted by the proposed electric line and outfall line ROW's have been flagged and located using the Trimble gps unit. Figures 5 - 17 in Appendix A indicate the jurisdictional extent of "waters of the US" as determined from field reconnaissance efforts.

Data for vegetation, hydrology, and soils were recorded on Data Forms for Routine Wetland Determination (1987 *Corps of Engineers Wetlands Determination Manual, Technical Report Y-87-1*)

for each community, with representative forms attached in Appendix C. Figures 5 – 17 in Appendix A detail the locations of all data sites obtained for the project.

Honey Bayou is a wooded stream corridor. It exhibits a defined bed-and-bank with an ordinary high water mark (OHWM) of approximately 200 feet in width and is considered perennial/intermittent. Vegetation inside the stream channel is sparse and dominated by scattered bald cypress (*Taxodium distichium*). Vegetation on the banks of Honey Bayou is dominated by St. Augustine (*Stenotaphrum secundatum*) and bushy bluestem (*Andropogon glomeratus*) with large scattered bald cypress (*Taxodium distichium*) and black willow (*Salix nigra*). According to USGS topographical maps, Honey Bayou is an abandoned channel of the Red River. During the site investigation, the feature appeared to exhibit normal water levels. Observable flow was very slow to non-existent.

An unnamed forested wetland slough extends from the Red River near Armistead approximately 8,200 feet northwest to the proposed electric line ROW. At the point of first intersection, the feature exhibits channelized conditions with an OHWM of approximately 15 feet. Further southeast, the feature widens and begins to exhibit regularly inundated conditions. Vegetation along the edge of the feature is dominated by St. Augustine, bushy bluestem, and scattered clumps of rush (*Juncus effuses*). The feature is dominated by large scattered bald cypress and black willow. According to USGS topographical maps, this feature is an abandoned channel of the Red River. During the site investigation, the feature appeared to exhibit above normal water levels. Observable flow was evident.

Pig Pen Bayou is a relatively open stream corridor. It exhibits a defined bed-and-bank with an OHWM of approximately 40 feet and is considered perennial/intermittent. Vegetation inside the stream channel in the area of South Parish Road 604 consists of cattail (*Typha latifolia*), bushy bluestem and black willow. Annual ragweed (*Ambrosia artemisiifolia*) is the dominant species just above the OHWM. Elsewhere, Pig Pen Bayou exhibits very little vegetation as it has recently been re-routed as a part of normal RRM operations. The unnamed tributary of Pig Pen Bayou which joins Pig Pen immediately south of Parish Road 604 and west of the Union Pacific Railroad ROW exhibits an OHWM of approximately 15 feet and is dominated by vegetation identical to that described for Pig Pen Bayou. Maguire Branch indicated on the USGS quadrangle map as being in the extreme southern portion of the project area, has been impacted by normal RRM operations and no longer extends into the project area.

The Red River is the site of the proposed discharge. Vegetation on the bank of the Red River is dominated by hackberry (*Celtis laeviegata*), American elm (*Ulmus americana*), and cedar elm (*U. crassiafolia*) with an understory of Johnsongrass (*Sorghum halepense*), greenbriar (*Smilax bona-nox*), goldenrod (*Solidago sp.*), and poison ivy (*Toxicodendron radicans*).

SUBSTATION AND ELECTRIC LINE ROW

The proposed substation will be located northwest of Armistead, Louisiana on the east side of US Highway 1. Immediately north of the intersection of US Highway 1 and the Cleco Electric main line, a substation with dimensions of approximately 360 x 360-feet will be constructed to route power to/from the RREP site. The majority of the site has been cleared and is actively farmed (Photograph 1, Appendix B). The site is bounded to the south by an existing Cleco Transmission line and to the

west by US Highway 1; a CrossTex pipeline ROW and a transmission line ROW also traverse the property along the western boundary. A narrow portion of the site situated near the Cleco Transmission Line is densely vegetated with annual ragweed (*Ambrosia artemsiifolia*), yankee weed (*Eupatorium compositifolium*), and sunflower (*Helianthus annuus*). The approximate geographic coordinate of the center of the site is N 32.05579 and W 93.41745. A man-made non-jurisdictional swale with a width of 3 feet forms a portion of the southern boundary and carries storm water east to west from the farm field to the bar-ditch along the east side of US Highway 1. Access to the substation will be via a 20-foot wide x 107-foot long paved roadway with culvert from US Highway 1 east to the substation. The 3 foot wide bar ditch along the east side of the highway will be traversed with a 24-inch culvert or larger to minimize and avoid loss of function to the feature.

The Property is primarily developed for farming with the exception of a narrow portion of the southern boundary which has been graded to allow drainage of storm waters offsite or is too near the Cleco transmission line to farm. At the time of investigation, a majority of the site exhibited almost fallow conditions with only recent sprouts of winter wheat and scattered weeds visible. The narrow unfarmed portion of the property situated near the Cleco transmission line exhibited dense frost-killed vegetation dominated by annual ragweed, yankee weed, and sunflower. The man-made non-jurisdictional swale generally exhibits large areas of bare ground with scattered smartweed (*Polygonum* sp.) and dock (*Rumex* sp.) in the vicinity of US Highway 1 and will not require re-routing or be impacted by the project.

From the substation, the proposed electric line ROW will traverse US Highway 1 to the west side, and then parallel the existing Cleco electric line ROW which generally parallels the Union Pacific Railroad ROW (30-foot offset to the west). The proposed electric line ROW will generally parallel the existing electric line ROW southeast with a 30-foot offset to the west (Photograph 2, Appendix B). At Honey Bayou, the electric ROW will jog slightly west to a natural opening within the canopy to avoid removal of cypress trees from the ROW. Approximately 11,500 feet southeast of the starting point, the ROW will re-direct in a more southerly heading to avoid impacts to forested wetlands associated with an unnamed abandoned slough of the Red River. For approximately 2,500 feet, the proposed electric line ROW will skirt the feature to the west. At such point, it will intersect the previously referenced existing electric ROW and continue due south with a 30-foot offset to the east for approximately 6,700 feet to the RREP site (Photograph 3, Appendix B). All of the Waters of the US indicated near or adjacent to the proposed electric line ROW as Data Sites are proposed to be avoided. Construction of the electric line and substation will result in less than 0.01 acres of impacts to the section 404 jurisdictional drainage along US Highway 1 associated with construction of the substation access roadway.

OUTFALL LINE ROW AND DISCHARGE

As proposed, the outfall line ROW will parallel (within the same trench) the authorized intake water line ROW (proposed in previous submittal) from the RREP facility across Pig Pen Bayou (via trenching) and Parish Road 604 via directional drill. It will then head east along Parish Road 604, crossing it via directional drill, and Pig Pen Bayou (via trenching), then southeast for approximately 9000 feet outside of and along the west bank of Pig Pen Bayou, east across Pig Pen Bayou (via trenching), then east under the Union Pacific Railroad ROW and US Highway 1 (via directional drill). Pig Pen Bayou exhibits a defined bed-and-bank condition with an OHWM of 40 feet at all points traversed by the proposed ROW. From US Highway 1 the outfall line ROW will continue to parallel

the intake water line ROW and traverse Parish Road 601 and the Red River levee via overtopping. Approximately 50 feet east of the levee, the outfall line ROW will jog north and continue northeast along the Hollingsworth Cutoff top bank to the Red River (Photographs 4 and 5, Appendix B). Construction of the ROW through Pig Pen Bayou will result in temporary impacts to less than 0.01 acres of Section 404 jurisdictional waters.

RREP is proposing to construct an eight (8") inch effluent discharge line into the Red River southeast of Armistead, Louisiana near river mile 176. According to information available, a rip rap stone revetment is located along the bank of the Red River in the area of the proposed discharge. The revetment is a trench revetment installed by the USACE in the 1960s and consists of 18 to 24-inches of Graded Stone "C" Rip Rap. The proposed design was developed through coordination with the USACE River and Stabilization personnel. Restoration of the revetment will result in permanent impacts to 8 linear feet of river bank due to trenching, and less than 0.01 acres of impact from 26.66 cubic yards of permanent fill to a Section 10 jurisdictional water.

Beginning approximately 65 feet west of the top bank of the Red River, the discharge will be constructed of restrained joint ductile iron pipe and will be installed by open cutting the existing bank for approximately 100 feet with some trench excavation under water. The trench will have varying depths and widths dependent on the ground surface. The trench on land and not under the revetment will be backfilled with job excavated material. The excavated material not needed for backfill will be removed to an upland location. The excavation of the underwater trench, placement of the pipe, and required backfill will be performed from a barge. The trench under the revetment will be backfilled with crushed stone to a point with the last 18 to 24-inches of backfill consisting of Graded Stone "C" Rip Rap so as to restore the existing trench revetment (purportedly 18 to 24-inches of rip rap). The excavated material not needed for backfill will be removed to an upland location. A thirty (30') foot permanent easement and twenty-five (25') foot temporary construction easement to the north will be utilized for construction above the normal water surface elevation. After reaching the normal water surface elevation, an additional twenty five (25') foot easement to the south will also be utilized for the construction. The construction will require the vegetation in the permanent and temporary easement to be removed. The excavation will be backfilled as described and the replaced stone revetment will stabilize the bank.

Approximately fifty (50') feet into the river from the normal elevation line, the pipeline will not be trenched but will be installed along the river bottom with 3' x 3' concrete ballasts installed at six foot intervals to prevent flotation and to hold the pipe firmly in place. Approximately 12-inches of crushed stone will be placed along the bottom as bedding material for the pipe. Approximately 20 feet of pipe will be installed between the end of the trench and the effluent diffuser. The effluent diffuser consists of approximately 36 feet of 8-inch restrained joint ductile iron pipe with nine 4-inch diffuser ports consisting of a Tideflex Rubber Diffuser Check Valve. The pipeline, diffuser, and necessary concrete ballasts will be assembled on a barge and installed with the assistance of divers along the bottom. Construction of the discharge will result in permanent impacts to 1 linear foot of river bank below normal water elevation with less than 0.01 acres of impact due to 7.39 cubic yards of permanent fill to a Section 10 jurisdictional water. Temporary impacts associated with the discharge include approximately 0.19 acres of Section 10 open water. Drawings detailing the proposed discharge and impacts to the revetment wall are provided in Appendix D.

INTAKE STRUCTURE

As described in a previous submittal forwarded to Mr. Lobred, RREP proposes to construct a water intake structure on Hollingsworth Cutoff (oxbow of the Red River). Design criteria provides for gravel rip rap to be placed along portions of the bank, shore, and bottom to stabilize the bank during construction and minimize impacts during and after the structure is placed. Placement of the rip rap is anticipated to result in impacts to less than 0.01 acres of Section 10 jurisdictional open water with 8.33 cubic yards of permanent fill and less than 0.01 acres of Section 10 jurisdictional herbaceous wetlands with 4.17 cubic yards or permanent fill.

ANTICIPATED PROJECT IMPACTS

Table 1 below summarizes proposed permanent impacts to "waters of the US" for the entire project. Note that those shaded in gray indicate previously authorized impacts.

TABLE 1
SUMMARY OF PERMANENT IMPACTS TO WATERS OF THE US

"Waters of the US"	Type	Purpose of Impact	Length (linear feet) of Stream Impact	Jurisdictional Area (feet^2)	Jurisdictional Area (Acres)	Fill (Cubic Yards)
Pig Pen Bayou (PPB1)	Section 404 Perennial/Intermittent stream	road crossing	105[1]	105 x 40 = 4,200	0.10	----------
Pig Pen Bayou (PPB2)	Section 404 Perennial/Intermittent stream	road crossing	105[1]	105 x 40 = 4,200	0.10	----------
Hollingsworth Cutoff	Section 10 Open water	Intake structure and piping	----------	650 x 1.67 = 10,855	0.02	----------
Hollingsworth Cutoff	Section 10 Open water	concrete ballasts and gravel pads	----------	650 x 25 = 1,625 (45.14 yds^3)	0.04	----------
US Highway 1 bar ditch	Section 404 Perennial/Intermittent stream	Substation access roadway	20	3	<0.01	----------
Hollingsworth Cutoff[2]	Section 10 Herbaceous wetland fringe	Intake structure bank rip rap	50 (non-stream)	50 x 3 = 150	<0.01	4.17
Hollingsworth Cutoff	Section 10 open water	Channel bottom rip rap	----------	50 x 6 = 300	<0.01	8.33
Red River	Section 10 Open water	Discharge	1	116 x 1 = 116	<0.01	----------
Red River	Section 10 Open water	Concrete ballasts and gravel pads	----------	(3 x 3 x .75 x 8) + (1 x 4.75 x 42) = 138	<0.01	7.39
Red River	Section 10 Open water	Restore revetment	8	8 x 45 = 360	<0.01	26.66
Totals	----------	----------	293	----------	0.32	46.55

Gray background indicates previously authorized impacts.
"1" Impacts previously reported as144 linear feet.
"2" Impacts previously anticipated as temporary. Permanent rip rap was not previously proposed.

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Permanent impacts associated with the discharge are proposed for Section 10 waters. These include less than 0.01 acres of impact to Section 10 areas of Hollingsworth Cutoff associated with the bank and shore rip rap (12.50 cubic yards), less than 0.01 acres of impacts associated with installing the discharge on the bottom of the Red River as well as less than 0.01 acres (7.39 cubic yards) of impacts associated with concrete ballasts and gravel padding for the discharge. Additional impacts include 26.66 cubic yards of fill associated with restoring the revetment along the Red River. No additional impacts are anticipated for the outfall ROW, discharge, electric line ROW, and substation.

Table 2 below summarizes proposed temporary impacts to "waters of the US" for the entire project (gray shading indicates previously authorized impacts).

TABLE 2
SUMMARY OF PROPOSED TEMPORARY IMPACTS TO WATERS OF THE US

"Waters of the US"	Feature	Purpose of Impact	Length (linear feet) of Stream Impact	Jurisdictional Width (feet)	Acres
Pig Pen Bayou	Section 404 Perennial/Intermittent stream	water line and outfall line	4.5	40	<0.01
Pig Pen Bayou	Section 404 Perennial/Intermittent stream	water line and outfall line	4.5	40	<0.01
Pig Pen Bayou	Section 404 Perennial/Intermittent stream	water line and outfall line	4.5	40	<0.01
Pig Pen Bayou	Section 404 Perennial/Intermittent stream	gas utility crossing	3	40	<0.01
Unnamed Tributary of Pig Pen Bayou	Section 404 Intermittent/Ephemeral stream	gas utility crossing	3	15	<0.01
Hollingsworth Cutoff	Section 10 Open water	Intake structure	4	90 (non-stream)	<0.01
Red River	Section 10 Open water	Discharge	4	116 (non stream)	0.01
Red River	Section 10 Open water	Discharge (temporary workspace)	80	100 (non stream)	0.18
Totals	----------	----------	107.5	481	0.22

Gray background indicates previously authorized impacts.

Temporary impacts associated with the discharge are proposed for the Red River. These include less than 0.01 acres of impacts associated with trenching of the riverbank to install the discharge as well as 0.18 acres associated with temporary workspace to construct the outfall line. Upon completion of the work effort, the trenches will be back-filled to pre-construction contours. All

impacted areas will be allowed to re-vegetate naturally. No additional impacts are anticipated for the outfall ROW, discharge, electric line ROW, and substation.

THREATENED AND ENDANGERED SPECIES

Federally threatened (T) and endangered (E) species listed by the U.S. Fish and Wildlife Service (USFWS) as having the potential to occur in Red River Parish are *Scaphirhynchus albus* (pallid sturgeon, E) and *Sterna antillarum* (least tern, E). The Louisiana Department of Wildlife and Fisheries considers the least tern to be the only state-listed T&E species as having the potential to occur in Red River Parish.

Zephyr completed a pedestrian survey of the proposed substation, electric line and outfall line ROW's and adjacent areas to determine if habitat likely to support the two federally-listed T&E species for Red River Parish exists. The T&E species habitat survey was completed by a qualified wildlife biologist. Data were collected to describe resident vegetation communities and assess the potential for occurrence of T&E species.

The vegetative communities observed within the survey areas were documented by a qualified wildlife biologist. The majority of the project footprint consists of mowed or grazed pasture grasses (Bermuda and Johnson grass). Portions of the proposed electric line ROW exhibit various wetland species, however the site does not possess habitat that supports the pallid sturgeon or the interior least tern. No T&E species were observed within the survey area during the survey.

A letter explaining these results and Zephyr's opinion that construction of the proposed substation, electric line, and outfall line ROWs will not adversely affect either species was forwarded to the USFWS's Lafayette Ecological Field Office. A copy of the signed concurrence letter received from USFWS is included in Appendix E.

CULTURAL RESOURCES

AR Consultants was contracted to accomplish the cultural resource literature review for the proposed substation, electric line, and outfall line ROWs. Based upon AR Consultant's report and recommendation, along with previous negative survey results within and near the proposed work areas, it is our conclusion that additional cultural resource investigations for this area are unnecessary. A copy of the AR Consultants Report with signed concurrence from the Louisiana State Historic Preservation Office (SHPO) is provided in Appendix E.

LEVEE CROSSING COORDINATION

RREP has initiated coordination regarding traversing the Red River levee with the Red River Parish Levee Board and Drainage District, the Department of Transportation and Development (DOTD), and USACE. Previously, RREP received confirmation that proposed work efforts in regard to the Red River Levee and Parish Road 601 were acceptable. A copy of that letter as well as a more recently received Letter of No Objection from DOTD regarding the above-mentioned modification (adding the 8" discharge line) related to crossing Parish Road 601 and the levee is included in Appendix E. Approval of planned work efforts from others agencies involved is anticipated in the near future.

SUMMARY

As proposed, the entire project will require permanent impacts to approximately 293 linear feet (0.27 acres) of Section 404 perennial/intermittent streams and less than 0.15 acres of impacts to Section 10 wetlands and open waters. Temporary impacts associated with the project include approximately 20 linear feet (<0.05 acres) of Section 404 perennial/intermittent streams. Additionally, approximately 88 linear feet (<0.2 acres) of non-stream Section 10 open water will be temporarily impacted by the construction of the facility, roadways, gas lines, water line, outfall line, electric line, and substation. These proposed impacts have been limited to the maximum extent practicable by location and construction techniques. The total area of proposed impacts to USACE jurisdictional waters for the whole project is below the current NWP 39 limitations; therefore, the applicant is applying to have the additional electric line ROW and outfall line ROW included in the original NWP 39 authorization. As stated above, construction has commenced on portions (access roadway and facility site) of the project originally authorized by your office to be conducted under NWP 39.

As previously mentioned, the applicant has initiated contact with other regulatory agencies including USFWS, State Historic Preservation Office, and DOTD concerning this project. Additionally, the design of the discharge and restoration of the existing revetment wall was coordinated with personnel at the River and Stabilization Department of the USACE-Vicksburg District. A copy of this supplemental PCN letter is also being forwarded to the Louisiana Department of Environmental Quality for their review. We are requesting your expeditious review of this submittal and written notification as to your agreement that the proposed impacts are authorized under NWP 39.

If you have any questions or need additional information, please call me at 512-879-6629. Thank you for your assistance in this matter.

Sincerely,
Zephyr Environmental Corporation

Clay V. Fischer
Natural Resources Project Manager

Attachments

cc: Jennifer Sharp Seinfeld, P.E., Zephyr Environmental Corporation
Andrea Adams, ADA-ES, Inc.
Sheila Glesmann, ADA-ES, Inc.

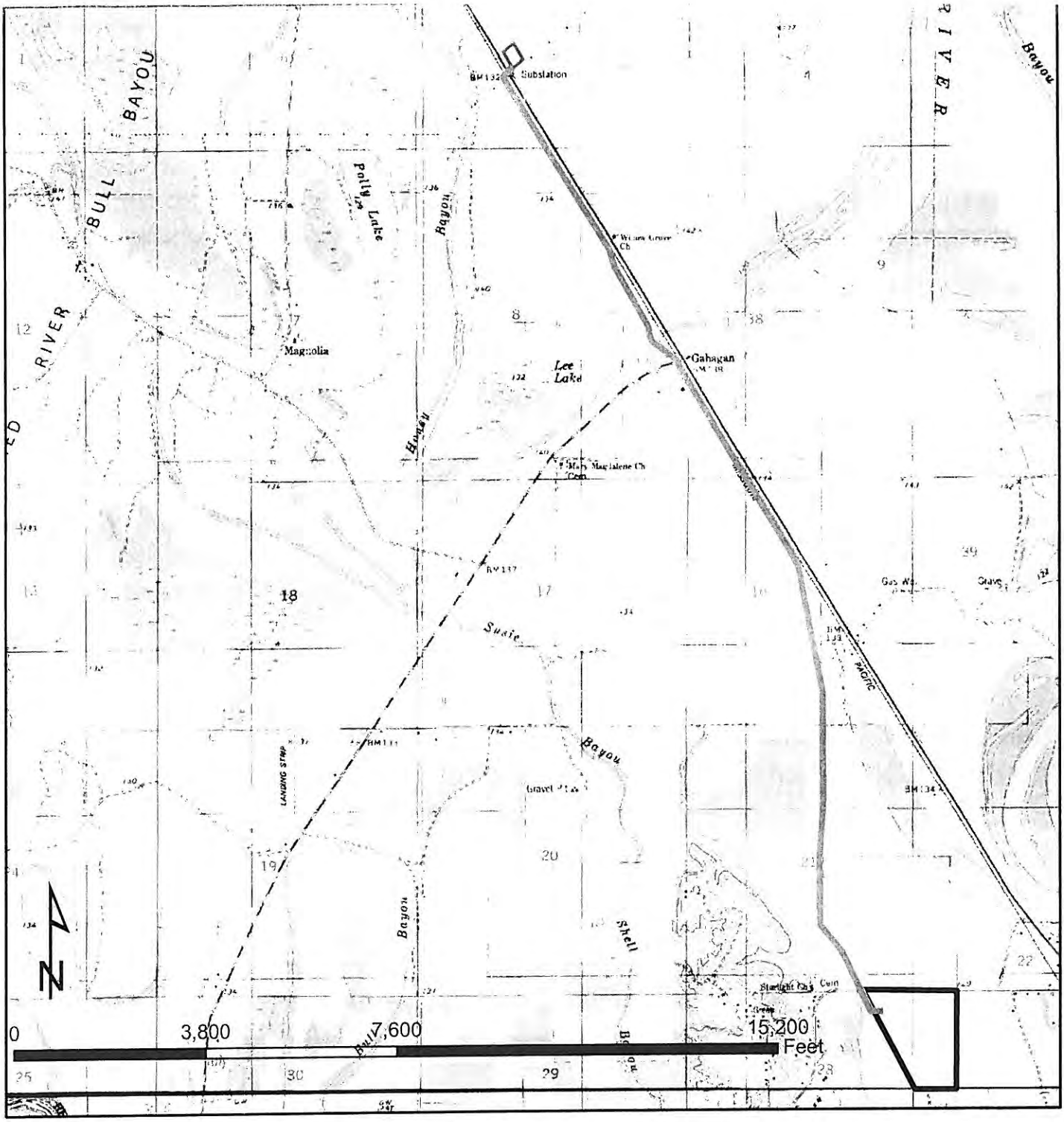

Figure 1
Site Location Map
Proposed Substation and Electric Line ROW
Red River Environmental Products,
Armistead, Red River Parish, Louisiana

Sources: Harmon USGS Quadrangle; 1996.

Drawn by: C. Fischer
Checked by: B. Walson

Date: 26 February 2009

Substation

Proposed Electric Line ROW

Site Boundary

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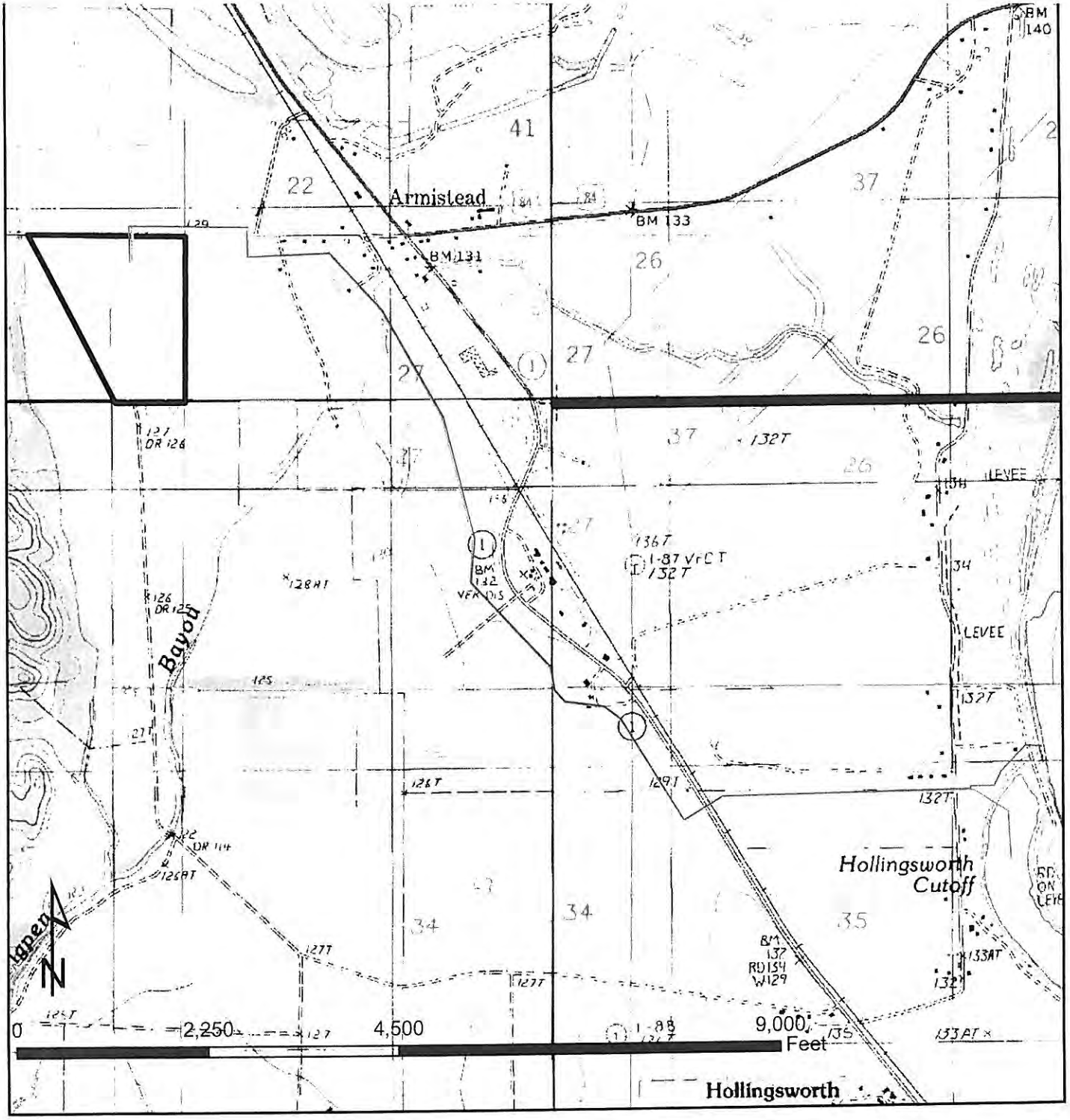


Figure 2
Site Location Map
Proposed Outfall ROW
Red River Environmental Products,
Armistead, Red River Parish, Louisiana

Sources: Coushatta, Evelyn, Hanna, and Harmon USGS Quadrangle; 1996.

Drawn by: C. Fischer
Checked by: B. Watson

Date: 26 February 2009

Proposed Outfall ROW

Oxbow Intake ROW

Gas Line

Site Boundary

zephyr environmental corporation

DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

April 28, 2008

Operations Division

SUBJECT: Red River Environmental Products, LLC, South Parish Road 604 Site, Coushatta, Red River Parish, Louisiana

Ms. Andrea Adams
Red River Environmental Products, LLC
C/O ADA-ES, Incorporated
8100 South Park Way, Unit B
Littleton, Colorado 80120

Dear Ms. Adams:

Based upon the information provided, it appears that Department of the Army permit requirements for the proposed work will be authorized by Nationwide Permit No. 39, as specified in the March 12, 2007, Federal Register, Issuance of Nationwide Permits; Notice (72 FR 11092-11198), provided the activity complies with the Nationwide Permit Special Conditions (enclosure 1), the Nationwide Permit General Conditions (enclosure 2), and the Regional Conditions (enclosure 3). It is your responsibility to read and become familiar with the enclosed conditions in order for you to ensure that the activity authorized herein complies with the Nationwide Permits.

This verification is valid for a period of 2 years, or until the Nationwide Permit is modified, suspended, or revoked. Activities which are under construction or that are under contract to commence in reliance upon a Nationwide Permit will remain authorized, provided the activity is completed within 12 months of the date of any subsequent modification, expiration, or revocation of the Nationwide Permit. Upon completion of the activity authorized by this Nationwide Permit, please fill out the enclosed certification of compliance (enclosure 4) and return it to our office.

This authorization was based upon a preliminary determination that there appear to be jurisdictional areas on the property subject to regulation pursuant to Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the Clean Water Act. For your information, I have enclosed a copy of the appeals form for your review (enclosure 5).

Tab 2

Thank you for advising us of your plans. If you change your plans for the proposed work, or if the proposed work does not comply with the conditions of the Nationwide Permit, please contact Mr. Kevin Philley of this office, telephone (601) 631-5607, fax (601) 631-5459, or e-mail address: regulatory@usace.army.mil. In any future correspondence concerning this project, please refer to Identification No. MVK-2008-234.

I am forwarding a copy of this letter to Mr. Clay V. Fischer, Zephyr Environmental Corporation, 2600 Via Fortuna, Suite 450, Austin, Texas 78746.

The Vicksburg District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the Customer Service Survey found on our web site at http://per2.nwp.usace.army.mil/survey.html, or if more convenient, complete the enclosed survey form (enclosure 6) and return it in the envelope provided.

Sincerely,

Anthony R. Lobred
Acting Chief, Permit Section
Regulatory Branch

Enclosures

CF:
CEMVK-EC-WR

APPENDIX E

LDEQ DOCUMENTATION

Due to the large number of pages, hardcopies of the following permits are not provided in order to conserve paper; however, all of the documents are available from the LDEQ's Electronic Document Management System (EDMS). Follow the website link, set-up a username and password, and on the "search page" enter the Agency Interest Number and Document ID, then click "Run":

http://www.deq.louisiana.gov/portal/tabid/2604/Default.aspx

AI: 152139

Air Permit Package – 36940287

LPDES Permit – 42579507 (Final), 42076278 (Draft Permit Package)

Groundwater Certification – 36214120

Water Quality Certification – 36786232, 39411210, 40730111

AI: 156874

Construction Stormwater – 36996379

APPENDIX F

CONSTRUCTION EMISSIONS DOCUMENTATION

Table 1
Non-Road Equipment
Hours of Operation

Equipment	2008 (hours/month)				2009 (hours/month)												2010 (hours/month)						
	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July
Air Compressors	0	190	30	70	0	0	0	130	330	950	480	480	480	480	480	480	480	480	480	480	480	480	360
Back-Hoes	0	160	0	10	120	120	190	480	200	290	160	160	160	80	0	0	0	0	0	0	0	0	0
Bob Cats	10	190	80	0	0	0	40	220	260	260	160	160	160	160	160	160	0	0	0	0	0	0	0
Concrete Pump	0	0	0	0	0	0	90	160	190	40	0	0	0	0	0	0	0	0	0	0	0	0	0
Cranes	10	210	190	100	250	150	90	600	870	800	480	480	480	480	480	280	160	160	160	40	0	0	0
Dozers	470	820	470	160	480	620	410	290	450	420	160	160	160	120	0	0	0	0	0	0	0	0	0
Dump Trucks	940	900	700	40	380	150	190	580	950	900	320	320	320	320	320	320	320	320	320	320	320	320	320
Fork Lifts	10	210	240	120	290	280	840	970	1240	1130	560	480	480	480	480	480	480	480	480	480	480	320	240
Grout Pump	10	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JLGs	0	0	0	0	90	490	500	630	1220	1280	800	800	800	720	480	320	160	160	160	160	160	40	0
Light Plants	0	0	0	0	0	0	0	300	220	180	120	120	120	0	0	0	0	0	0	0	0	0	0
Mini Excavators	0	80	290	0	0	40	480	130	390	400	160	160	160	160	160	160	0	0	0	0	0	0	0
Motor Graders	20	110	90	70	220	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Road Grader	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scissor Lift	0	0	0	0	0	0	0	0	0	0	40	40	40	40	40	40	40	40	40	40	40	40	40
Sheep's Foot Roller	0	270	440	140	400	370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Smooth Foot Roller	0	100	130	70	200	430	210	30	0	0	160	160	160	120	0	0	0	0	0	0	0	0	0
Track-Hoes	420	0	330	80	390	260	510	760	1550	1530	520	600	320	160	120	0	0	0	0	0	0	0	0
Tractors	80	480	140	70	200	390	80	260	280	130	160	160	160	160	160	160	160	160	80	0	0	0	0
UTV Mules	10	240	210	420	360	520	790	530	1050	1020	1040	960	960	960	960	960	960	960	800	600	480	320	240
Wacky Packers	0	0	0	0	0	0	130	230	320	650	160	160	160	160	160	160	160	160	440	320	160	0	0
Water Pumps	0	0	0	0	0	0	0	380	290	20	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Trucks	0	230	130	0	120	200	0	0	0	0	160	160	160	120	0	0	0	0	0	0	0	0	0

Table 1
Non-Road Equipment
Hours of Operation

Equipment	2008 (hours/month)				2009 (hours/month)												2010 (hours/month)						
	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July
Generators	0	0	0	0	0	0	240	480	480	480	720	960	960	960	960	960	960	960	800	640	640	640	320
Pressure Washer	0	0	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Pump (mud hog)	0	0	0	0	0	0	400	640	640	640	640	640	640	640	640	640	520	480	120	0	0	0	0
1/2 ton truck (gas)	0	0	0	0	0	80	160	160	160	320	360	480	480	480	480	480	480	480	480	480	440	320	200
1 ton truck (diesel) (from March 2008)	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
1 ton truck (diesel) (from May 2009)	0	0	0	0	0	0	0	160	160	160	160	160	160	160	160	160	160	160	160	160	120	0	0
Compactors/Tampers	0	0	0	0	0	0	120	200	160	430	320	320	120	0	0	0	0	0	0	0	0	0	0
Concrete/Mortar Mixers	0	0	0	0	0	0	0	0	0	120	160	160	160	160	40	0	0	0	0	0	0	0	0
Trencher	0	0	0	0	0	0	0	0	0	0	160	0	0	0	0	0	0	0	0	0	0	0	0

Table 2
Non-Road Equipment
Emission Factors

Equipment	EF Data Year	SCC	SCC Description	HP	HC lb/hr/unit	VOC lb/hr/unit	CO lb/hr/unit	NOx lb/hr/unit	PM10 lb/hr/unit	PM2.5 lb/hr/unit	SO2 lb/hr/unit	CO2 lb/hr/unit
Air Compressors	2009	2270006015	Diesel Air Compressors	175	0.0445	0.0469	0.1485	0.6023	0.0336	0.0326	0.0140	64.9033
Back-Hoes	2009	2270002066	Diesel Tractors/Loaders/Backho	75	0.0428	0.0451	0.2126	0.1910	0.0328	0.0319	0.0043	19.9924
Bob Cats	2009	2270002072	Diesel Skid Steer Loaders	50	0.0373	0.0393	0.1496	0.1271	0.0230	0.0223	0.0031	14.3640
Concrete Pump	2009	2270006010	Diesel Pumps	75	0.0430	0.0453	0.1967	0.3534	0.0372	0.0360	0.0075	34.7780
Cranes	2009	2270002045	Diesel Cranes	300	0.0664	0.0699	0.2044	0.9862	0.0448	0.0435	0.0257	119.4570
Dozers	2009	2270002069	Diesel Crawler Tractor/Dozers	100	0.0505	0.0532	0.4475	0.5353	0.0615	0.0597	0.0146	67.9707
Dump Trucks	2009	2270003050	Diesel Other Material Handling Eqp	600	0.2011	0.2117	0.8955	1.5110	0.1339	0.1299	0.0266	123.6104
Fork Lifts	2009	2270003020	Diesel Forklifts	75	0.0280	0.0295	0.2732	0.3332	0.0298	0.0289	0.0103	47.7877
Grout Pump	2009	2270006010	Diesel Pumps	300	0.1177	0.1240	0.4529	1.3456	0.0892	0.0865	0.0263	122.0638
JLGs	2009	2270003010	Diesel Aerial Lifts	75	0.0453	0.0477	0.2002	0.2148	0.0320	0.0311	0.0042	19.3403
Light Plants	2009	2270002027	Diesel Signal Boards/Light Plants	40	0.0161	0.0169	0.0665	0.1480	0.0131	0.0127	0.0036	16.9186
Mini Excavators	2009	2270002036	Diesel Excavators	25	0.0136	0.0143	0.0860	0.1241	0.0109	0.0106	0.0036	16.6600
Motor Graders	2009	2270002048	Diesel Graders	300	0.0838	0.0883	0.3754	1.1662	0.0754	0.0731	0.0347	161.1787
Road Grader	2009	2270002048	Diesel Graders	300	0.0838	0.0883	0.3754	1.1662	0.0754	0.0731	0.0347	161.1787
Scissor Lift	2009	2265003010	4 Stroke Aerial Lifts	80	0.4825	0.4501	9.0815	0.7137	0.0043	0.0040	0.0105	50.8288
Sheep's Foot Roller	2009	2270002015	Diesel Rollers	75	0.0380	0.0400	0.2974	0.3812	0.0417	0.0404	0.0101	46.9809

Table 2
Non-Road Equipment
Emission Factors

Equipment	EF Data Year	SCC	SCC Description	HP	HC lb/hr/unit	VOC lb/hr/unit	CO lb/hr/unit	NOx lb/hr/unit	PM10 lb/hr/unit	PM2.5 lb/hr/unit	SO2 lb/hr/unit	CO2 lb/hr/unit
Smooth Foot Roller	2009	2270002015	Diesel Rollers	75	0.0380	0.0400	0.2974	0.3812	0.0417	0.0404	0.0101	46.9809
Track-Hoes	2009	2270002066	Diesel Tractors/Loaders/Backho	100	0.0608	0.0640	0.3134	0.2699	0.0482	0.0467	0.0060	27.8992
Tractors	2009	2270005015	Diesel Agricultural Tractors	300	0.1296	0.1365	0.6341	1.5935	0.1179	0.1143	0.0354	164.7363
UTV Mules	2009	2265001030	4 Stroke ATVs	1	0.0111	0.0104	0.0952	0.0011	0.0001	0.0001	0.0001	0.5162
Wacky Packers	2009	2270002009	Diesel Plate Compactors	25	0.0162	0.0171	0.0633	0.1095	0.0104	0.0101	0.0024	11.3383
Water Pumps	2009	2270006010	Diesel Pumps	100	0.0595	0.0626	0.2722	0.4890	0.0522	0.0507	0.0104	48.1180
Water Trucks	2009	2270003050	Diesel Other Material Handling Eqp	300	0.1312	0.1381	0.4721	0.8653	0.0858	0.0833	0.0152	70.7164
Generators	2009	2265006005	4 Stroke Generator Sets	25	0.4368	0.4075	12.0684	0.1469	0.0037	0.0034	0.0070	33.7950
Pressure Washer	2009	2265006030	4 Stroke Pressure Washers	11	0.2110	0.1968	5.3888	0.0722	0.0020	0.0018	0.0037	17.8754
Pump (mud hog)	2009	2265006010	4 Stroke Pumps	25	0.3035	0.2832	9.0061	0.1194	0.0032	0.0029	0.0060	29.3293
1/2 ton truck (gas)												
1 ton truck (diesel) (from March 2008)	2009	2270003050	Diesel Other Material Handling Eqp	300	0.1312	0.1381	0.4721	0.8653	0.0858	0.0833	0.0152	70.7164
1 ton truck (diesel) (from May 2009)	2009	2270003050	Diesel Other Material Handling Eqp	300	0.1312	0.1381	0.4721	0.8653	0.0858	0.0833	0.0152	70.7164
Compactors/Tampers	2009	2265002009	4 Stroke Plate Compactors	16	0.1644	0.1534	4.9039	0.0645	0.0018	0.0016	0.0033	16.1158
Concrete/Mortar Mixers	2009	2265002042	4 Stroke Cement & Mortar Mixers	25	0.4679	0.4366	10.8687	0.1092	0.0031	0.0028	0.0055	26.6899
Trencher	2009	2270002030	Diesel Trenchers	25	0.0166	0.0175	0.1027	0.1320	0.0127	0.0123	0.0036	16.6972

Table 3

September - December

2008 Non-Road Emission Estimates

Equipment	HC ton/2008	VOC ton/2008	CO ton/2008	NOx ton/2008	PM10 ton/2008	PM2.5 ton/2008	SO2 ton/2008	CO2 ton/2008
Air Compressors	0.01	0.01	0.02	0.09	0.00	0.00	0.00	9.41
Back-Hoes	0.00	0.00	0.02	0.02	0.00	0.00	0.00	1.70
Bob Cats	0.01	0.01	0.02	0.02	0.00	0.00	0.00	2.01
Concrete Pump	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.02	0.02	0.05	0.25	0.01	0.01	0.01	30.46
Dozers	0.05	0.05	0.43	0.51	0.06	0.06	0.01	65.25
Dump Trucks	0.26	0.27	1.16	1.95	0.17	0.17	0.03	159.46
Fork Lifts	0.01	0.01	0.08	0.10	0.01	0.01	0.00	13.86
Grout Pump	0.01	0.01	0.04	0.12	0.01	0.01	0.00	10.99
JLGs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Plants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mini Excavators	0.00	0.00	0.02	0.02	0.00	0.00	0.00	3.08
Motor Graders	0.01	0.01	0.05	0.17	0.01	0.01	0.01	23.37
Road Grader	0.00	0.00	0.00	0.01	0.00	0.00	0.00	1.61
Scissor Lift	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sheep's Foot Roller	0.02	0.02	0.13	0.16	0.02	0.02	0.00	19.97
Smooth Foot Roller	0.01	0.01	0.04	0.06	0.01	0.01	0.00	7.05
Track-Hoes	0.03	0.03	0.13	0.11	0.02	0.02	0.00	11.58
Tractors	0.05	0.05	0.24	0.61	0.05	0.04	0.01	63.42
UTV Mules	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.23
Wacky Packers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 3

September - December

2008 Non-Road Emission Estimates

Equipment	HC ton/2008	VOC ton/2008	CO ton/2008	NOx ton/2008	PM10 ton/2008	PM2.5 ton/2008	SO2 ton/2008	CO2 ton/2008
Water Trucks	0.02	0.02	0.08	0.16	0.02	0.01	0.00	12.73
Generators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pressure Washer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pump (mud hog)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/2 ton truck (gas)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1 ton truck (diesel) (from March 2008)	0.04	0.04	0.15	0.28	0.03	0.03	0.00	22.63
1 ton truck (diesel) (from May 2009)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactors/Tampers	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Concrete/Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trencher	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	**0.54**	**0.57**	**2.71**	**4.64**	**0.42**	**0.40**	**0.10**	**458.80**

Table 4

January - December

2009 Non-Road Emission Estimates

Equipment	HC ton/2009	VOC ton/2009	CO ton/2009	NOx ton/2009	PM10 ton/2009	PM2.5 ton/2009	SO2 ton/2009	CO2 ton/2009
Air Compressors	0.10	0.10	0.32	1.29	0.07	0.07	0.03	139.22
Back-Hoes	0.04	0.04	0.21	0.19	0.03	0.03	0.00	19.59
Bob Cats	0.03	0.03	0.13	0.11	0.02	0.02	0.00	12.50
Concrete Pump	0.01	0.01	0.05	0.08	0.01	0.01	0.00	8.35
Cranes	0.18	0.19	0.56	2.68	0.12	0.12	0.07	324.92
Dozers	0.08	0.09	0.73	0.88	0.10	0.10	0.02	111.13
Dump Trucks	0.51	0.54	2.27	3.83	0.34	0.33	0.07	313.35
Fork Lifts	0.11	0.11	1.05	1.28	0.11	0.11	0.04	184.22
Grout Pump	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JLGs	0.18	0.19	0.81	0.87	0.13	0.13	0.02	78.62
Light Plants	0.01	0.01	0.04	0.08	0.01	0.01	0.00	8.97
Mini Excavators	0.02	0.02	0.10	0.15	0.01	0.01	0.00	19.99
Motor Graders	0.01	0.01	0.06	0.17	0.01	0.01	0.01	24.18
Road Grader	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scissor Lift	0.06	0.05	1.09	0.09	0.00	0.00	0.00	6.10
Sheep's Foot Roller	0.01	0.02	0.11	0.15	0.02	0.02	0.00	18.09
Smooth Foot Roller	0.03	0.03	0.22	0.28	0.03	0.03	0.01	34.53
Track-Hoes	0.20	0.22	1.05	0.91	0.16	0.16	0.02	93.74
Tractors	0.15	0.16	0.73	1.83	0.14	0.13	0.04	189.45
UTV Mules	0.06	0.05	0.48	0.01	0.00	0.00	0.00	2.61
Wacky Packers	0.19	0.18	5.61	0.07	0.00	0.00	0.00	18.45
Water Pumps	0.02	0.02	0.09	0.17	0.02	0.02	0.00	16.60

Table 4

January - December

2009 Non-Road Emission Estimates

Equipment	HC ton/2009	VOC ton/2009	CO ton/2009	NOx ton/2009	PM10 ton/2009	PM2.5 ton/2009	SO2 ton/2009	CO2 ton/2009
Water Trucks	0.06	0.06	0.22	0.40	0.04	0.04	0.01	32.53
Generators	1.57	1.47	43.45	0.53	0.01	0.01	0.03	121.66
Pressure Washer	0.16	0.15	4.10	0.05	0.00	0.00	0.00	13.59
Pump (mud hog)	0.93	0.87	27.74	0.37	0.01	0.01	0.02	90.33
1/2 ton truck (gas)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1 ton truck (diesel) (from March 2008)	0.13	0.13	0.45	0.83	0.08	0.08	0.01	67.89
1 ton truck (diesel) (from May 2009)	0.09	0.10	0.34	0.62	0.06	0.06	0.01	50.92
Compactors/Tampers	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Concrete/Mortar Mixers	0.19	0.17	4.35	0.04	0.00	0.00	0.00	10.68
Trencher	0.00	0.00	0.01	0.01	0.00	0.00	0.00	1.34
TOTAL	5.15	5.04	96.45	18.15	1.56	1.51	0.44	2,034.55

Table 5

January - July

2010 Non-Road Emission Estimates

Equipment	HC ton/2010	VOC ton/2010	CO ton/2010	NOx ton/2010	PM10 ton/2010	PM2.5 ton/2010	SO2 ton/2010	CO2 ton/2010
Air Compressors	0.07	0.08	0.24	0.98	0.05	0.05	0.02	105.14
Back-Hoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bob Cats	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Pump	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.02	0.02	0.05	0.26	0.01	0.01	0.01	31.06
Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Trucks	0.23	0.24	1.00	1.69	0.15	0.15	0.03	138.44
Fork Lifts	0.04	0.04	0.40	0.49	0.04	0.04	0.02	70.73
Grout Pump	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JLGs	0.02	0.02	0.08	0.09	0.01	0.01	0.00	8.12
Light Plants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mini Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motor Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Grader	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scissor Lift	0.07	0.06	1.27	0.10	0.00	0.00	0.00	7.12
Sheep’s Foot Roller	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Smooth Foot Roller	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Track-Hoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tractors	0.03	0.03	0.13	0.32	0.02	0.02	0.01	32.95
UTV Mules	0.02	0.02	0.21	0.00	0.00	0.00	0.00	1.13
Wacky Packers	0.10	0.10	3.04	0.04	0.00	0.00	0.00	9.99
Water Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 5

January - July

2010 Non-Road Emission Estimates

Equipment	HC ton/2010	VOC ton/2010	CO ton/2010	NOx ton/2010	PM10 ton/2010	PM2.5 ton/2010	SO2 ton/2010	CO2 ton/2010
Water Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generators	1.08	1.01	29.93	0.36	0.01	0.01	0.02	83.81
Pressure Washer	0.12	0.11	3.02	0.04	0.00	0.00	0.00	10.01
Pump (mud hog)	0.17	0.16	5.04	0.07	0.00	0.00	0.00	16.42
1/2 ton truck (gas)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1 ton truck (diesel) (from March 2008)	0.07	0.08	0.26	0.48	0.05	0.05	0.01	39.60
1 ton truck (diesel) (from May 2009)	0.05	0.05	0.18	0.33	0.03	0.03	0.01	26.87
Compactors/Tampers	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Concrete/Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trencher	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	2.09	2.01	44.87	5.25	0.39	0.38	0.12	581.39

Table 6

Summary Non-Road Emission Estimates

Year	HC ton/year	VOC ton/year	CO ton/year	NOx ton/year	PM10 ton/year	PM2.5 ton/year	SO2 ton/year	CO2 ton/year
2008	0.54	0.57	2.71	4.64	0.42	0.40	0.10	458.80
2009	5.15	5.04	96.45	18.15	1.56	1.51	0.44	2,034.55
2010	2.09	2.01	44.87	5.25	0.39	0.38	0.12	581.39
TOTAL	**7.78**	**7.63**	**144.03**	**28.04**	**2.37**	**2.30**	**0.66**	**3,074.75**

APPENDIX G

ON-ROAD MOBILE SOURCE CO2 EMISSIONS ANALYSIS

Table 1 - Lignite Truck Data

Vehicle, Road Type, SCC	NMIM Output		CO_2 Emission Factor (lb/VMT)	# Lignite Trucks (trucks/year)	Lignite Truck Round Trip (VMT)	CO_2 (lb/year)
	CO_2 (tons/year)	VMT ($x10^6$ miles/year)				
Heavy Duty Deisel Vehicles (heavy) Rural Major Collector 22 3007 4 170	378,788.50	213.51	3.55	13,873	37.64	1,852,833.93
Heavy Duty Deisel Vehicles (heavy) Rural Local 22 3007 4 210	207,209.50	116.79	3.55	13,873	21.44	1,055,385.52
					TOTAL (lb/yr):	2,908,219.45
					TOTAL (tpy):	1,454.11

Table 2 - AC Product Truck Data

Vehicle, Road Type, SCC	NMIM Output		CO_2 Emission Factor (lb/VMT)	# Product Trucks (trucks/year)	Product Truck Round Trip (VMT)	CO_2 (lb/year)
	CO_2 (tons/year)	VMT ($x10^6$ miles/year)				
Heavy Duty Deisel Vehicles (heavy) Rural Interstate 22 3007 4 110	2,095,195.00	1,180.97	3.55	3,330	506.40	5,983,472.36
Heavy Duty Deisel Vehicles (heavy) Rural Major Collector 22 3007 4 170	378,788.50	213.51	3.55	3,330	196.80	2,325,336.57
Heavy Duty Deisel Vehicles (heavy) Rural Local 22 3007 4 210	207,209.50	116.79	3.55	3,330	1.60	18,905.15
Heavy Duty Deisel Vehicles (heavy) Urban Interstate 22 3007 4 230	702,107.30	395.75	3.55	3,330	93.60	1,105,951.41
Heavy Duty Deisel Vehicles (heavy) Urban Local 22 3007 4 330	46,150.58	26.01	3.55	3,330	1.60	18,905.17
					TOTAL (lb/yr):	9,452,570.65
					TOTAL (tpy):	4,726.29

Table 3 - Ash Truck Data

Vehicle, Road Type, SCC	NMIM Output		CO_2 Emission Factor (lb/VMT)	# Ash Trucks (trucks/year)	Ash Truck Round Trip (VMT)	CO_2 (lb/year)
	CO_2 (tons/year)	VMT ($x10^6$ miles/year)				
Heavy Duty Deisel Vehicles (heavy) Rural Major Collector 22 3007 4 170	378,788.50	213.51	3.55	1,168	40.00	165,775.11
Heavy Duty Deisel Vehicles (heavy) Rural Local 22 3007 4 210	207,209.50	116.79	3.55	1,168	10.00	41,443.73
					TOTAL (lb/yr):	207,218.84
					TOTAL (tpy):	103.61

Table 4 - Lime Truck Data

Vehicle, Road Type, SCC	NMIM Output		CO_2 Emission Factor (lb/VMT)	# Lime Trucks (trucks/year)	Lime Truck Round Trip (VMT)	CO_2 (lb/year)
	CO_2 (tons/year)	VMT ($x10^6$ miles/year)				
Heavy Duty Deisel Vehicles (heavy) Rural Interstate 22 3007 4 110	2,095,195.00	1,180.97	3.55	435	356.00	549,483.45
Heavy Duty Deisel Vehicles (heavy) Rural Major Collector 22 3007 4 170	378,788.50	213.51	3.55	435	100.80	155,584.48
Heavy Duty Deisel Vehicles (heavy) Rural Local 22 3007 4 210	207,209.50	116.79	3.55	435	3.80	5,865.28
Heavy Duty Deisel Vehicles (heavy) Urban Interstate 22 3007 4 230	702,107.30	395.75	3.55	435	33.30	51,398.38
Heavy Duty Deisel Vehicles (heavy) Urban Local 22 3007 4 330	46,150.58	26.01	3.55	435	2.50	3,858.74
					TOTAL (lb/yr):	766,190.33
					TOTAL (tpy):	383.10

Table 5 - Inorganic Salt Truck Data

Vehicle, Road Type, SCC	NMIM Output		CO_2 Emission Factor (lb/VMT)	# Salt Trucks (trucks/year)	Salt Truck Round Trip (VMT)	CO_2 (lb/year)
	CO_2 (tons/year)	VMT ($x10^6$ miles/year)				
Heavy Duty Deisel Vehicles (heavy) Rural Interstate	2,095,195.00	1,180.97	3.55	480	335.60	571,582.01
Heavy Duty Deisel Vehicles (heavy) Rural Major Collector	378,788.50	213.51	3.55	480	95.00	161,801.05
Heavy Duty Deisel Vehicles (heavy) Rural Local	207,209.50	116.79	3.55	480	6.40	10,900.27
Heavy Duty Deisel Vehicles (heavy) Urban Interstate	702,107.30	395.75	3.55	480	45.20	76,983.14
Heavy Duty Deisel Vehicles (heavy) Urban Local	46,150.58	26.01	3.55	480	1.60	2,725.07
					TOTAL (lb/yr):	823,991.54
					TOTAL (tpy):	412.00

Table 6 - Commuter Vehicles Data

Vehicle, Road Type, SCC	NMIM Output		CO_2 Emission Factor (lb/VMT)	Distant Travel*			Local Travel*			Total All-Travel CO_2 Emissions (lb/yr)
	CO_2 (tons/year)	VMT ($x10^6$ miles/year)		# Commuter Vehicles* (trips/year)	Commuter Vehicle Round Trip (VMT)	CO_2 (lb/year)	# Commuter Vehicles* (trips/year)	Commuter Vehicle Round Trip (VMT)	CO_2 (lb/year)	
Light Duty Gas Vehicle Rural Interstate 22 0100 1 110	1,063,422.50	2,620.92	0.81	6,000	55.80	271,685.85	1,500	-	-	271,685.85
Light Duty Gas Vehicle Rural Major Collector 22 0100 1 170	1,049,617.50	2,586.90	0.81	6,000	32.80	159,700.71	1,500	10.00	12,172.31	171,873.02
Light Duty Gas Vehicle Rural Minor Collector 22 0100 1 190	429,462.30	1,058.46	0.81	6,000	0.00	-	1,500	6.00	7,303.38	7,303.38
Light Duty Gas Vehicle Rural Local 22 0100 1 210	574,189.60	1,415.15	0.81	6,000	6.80	33,108.71	1,500	4.00	4,868.93	37,977.64
Light Duty Gas Vehicle Urban Interstate 22 0100 1 230	1,206,479.60	2,973.50	0.81	6,000	14.00	68,165.00	1,500	0.00	-	68,165.00
Light Duty Gas Vehicle Urban Local 22 0100 1 330	230,501.20	568.10	0.81	6,000	0.60	2,921.36	1,500	0.00	-	2,921.36
Light Duty Gasoline Trucks (1) Rural Interstate 22 0102 0 110	946,728.00	1,797.73	1.05	8,800	55.80	517,188.18	2,200	0.00	-	517,188.18
Light Duty Gasoline Trucks (1) Rural Major Collector 22 0102 0 170	973,415.40	1,848.40	1.05	8,800	32.80	304,010.46	2,200	10.00	23,171.53	327,181.99

Table 6 - Commuter Vehicles Data

Vehicle, Road Type, SCC	NMIM Output		CO_2 Emission Factor (lb/VMT)	Distant Travel*			Local Travel*			Total All-Travel CO_2 Emissions (lb/yr)
	CO_2 (tons/year)	VMT ($x10^6$ miles/year)		# Commuter Vehicles* (trips/year)	Commuter Vehicle Round Trip (VMT)	CO_2 (lb/year)	# Commuter Vehicles* (trips/year)	Commuter Vehicle Round Trip (VMT)	CO_2 (lb/year)	
Light Duty Gasoline Trucks (1) Rural Minor Collector 22 0102 0 190	398,283.50	756.29	1.05	8,800	0.00	-	2,200	6.00	13,902.91	13,902.91
Light Duty Gasoline Trucks (1) Rural Local 22 0102 0 210	532,501.30	1,011.16	1.05	8,800	6.80	63,026.54	2,200	4.00	9,268.61	72,295.15
Light Duty Gasoline Trucks (1) Urban Interstate 22 0102 0 230	936,277.50	1,777.89	1.05	8,800	14.00	129,759.87	2,200	0.00	-	129,759.87
Light Duty Gasoline Trucks (1) Urban Local 22 0102 0 330	187,485.70	356.02	1.05	8,800	0.60	5,561.14	2,200	0.00	-	5,561.14
									TOTAL (lb/yr):	1,625,815.49
									TOTAL (tpy):	812.91

* It is assumed that 80% of the workers travel long distance (55 miles one way) and 20% of the workers travel locally (10 miles one way).

Table 7 - Miscellaneous Truck Data

Vehicle, Road Type, SCC	NMIM Output		CO_2 Emission Factor (lb/VMT)	# Misc. Trucks (trucks/year)	Misc. Truck Round Trip (VMT)	CO_2 (lb/year)
	CO_2 (tons/year)	VMT ($x10^6$ miles/year)				
Heavy Duty Deisel Vehicles (light) Rural Interstate	49,894.40	47.35	2.11	2,500	55.80	293,977.38
Heavy Duty Deisel Vehicles (light) Rural Major Collector	50,122.42	47.57	2.11	2,500	32.80	172,803.70
Heavy Duty Deisel Vehicles (light) Rural Local	27,419.11	26.02	2.11	2,500	6.80	35,825.18
Heavy Duty Deisel Vehicles (light) Urban Interstate	33,331.79	31.63	2.11	2,500	14.00	73,757.75
Heavy Duty Deisel Vehicles (light) Urban Local	6,014.52	5.71	2.11	2,500	0.60	3,161.05
					TOTAL (lb/yr):	579,525.06
					TOTAL (tpy):	289.76

APPENDIX H

SHPO DOCUMENTATION

Thomas, Sharon (CF)

From: Kellye French [kfrench@crt.state.la.us]
Sent: Thursday, December 17, 2009 2:28 PM
To: Thomas, Sharon (CF)
Subject: DOE in Red River Parish

Sharon,

Mike Varnado asked me to get back with you regarding some questions you had on the Section 106 review for this project. I have looked at the documentation that you sent and yes, you have met the Section 106 requirements for this project. Please let me or Mike know if you have any other questions.

Thanks,

Kellye French
Office of Cultural Development
P.O. Box 44247
Baton Rouge, LA 70804
Office: 225-342-6931
Fax: 225-342-4480

BOBBY JINDAL
GOVERNOR

HAROLD LEGGETT, PH.D.
SECRETARY

MAIN FILE

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Original to JOW
copy to Mark Larsen

MAR 1 0 2009

PER20090001

DEQ - OES
2009 APR 13 AM 10: 59

MEMORANDUM

TO: Mr. Scott Hutcheson, State Historic Preservation Officer
Department of Culture, Recreation, & Tourism
Office of Cultural Development/Division of Archaeology
Post Office Box 44247
Baton Rouge, LA 70804-4247

FROM: Niels Larsen, Environmental Project Specialist 3 NL
Permits Support Services Division

RE: LSHPO Notification of New Construction associated with LPDES Application

In accordance with the Memorandum of Understanding (MOU) between the Louisiana Department of Environmental Quality (LDEQ) and the Louisiana State Historic Preservation Office (LSHPO), the Office of Environmental Services (OES) is submitting the attached information for your review. Please send me a record of your decision (requiring a survey or no objection) within (30) thirty days to me at the address below:

Permits Application Administrative Review Group
Permit Support Services Division
Office of Environmental Services
Post Office Box 4313
Baton Rouge, LA 70821-4313

Please include a copy of this memo with your response so that the file reference below will be included. If you have any questions or require any additional information, please contact me at 225-219-3304.

No known historic properties will be affected by this undertaking. This effect determination could change should new information come to our attention.

Scott Hutcheson 4-6-09
Scott Hutcheson — Date
State Historic Preservation Officer

Attachment(s)

Applicant: Red River Environmental Products, LLC
Facility: Red River Environmental Products
Agency Interest No. 152139
Activity No. PER20090001
Section Industrial Section Group 1

RECEIVED
MAR 17 2009
DIV. OF ARCHAEOLOGY

AR Consultants, Inc.

Archaeological and Environmental Consulting
11020 Audelia Road, Suite C105, Dallas, TX 75243
Phone: (214) 368-0478
Fax: (214) 221-1519
E-mail: arcdigs@aol.com

February 6, 2009

Michael L. Varnado
Architectural Historian
Louisiana Division of Historic Preservation
Department of Culture, Recreation & Tourism
PO Box 44247
Baton Rouge, LA 70804

No known historic properties will be affected by this undertaking. This effect determination could change should new information come to our attention.

Scott Hutcheson 3-6-09
Scott Hutcheson **Date**
State Historic Preservation Officer

Dear Mike,

A client of ours in planning to discharge some water from an excavation project in Red River Parish and has designed the pipeline route to pass by a mid-1900s residence and associated outbuildings. I have included a section of a USGS map that shows the location of the residence as well as a more detailed map that shows the relative locations of the structures. Pictures of the structures are also included.

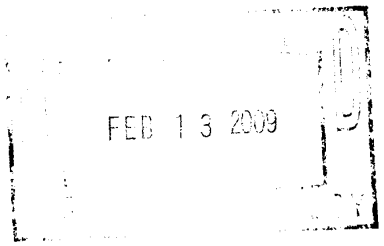
In your opinion do any of these structures meet the criteria for listing on the National Register of Historic Places?

Thank you for your help.

Sincerely,

S. Alan Skinner, PhD
President

Encl. USGS maps (2) and
structure pictures



AR Consultants, Inc.

Archaeological and Environmental Consulting
11020 Audelia Road, Suite C105, Dallas, TX 75243
Phone: (214) 368-0478
Fax: (214) 221-1519
E-mail: arcdigs@aol.com

February 20, 2008

TO: Brad Watson
Zephyr Environmental Corp.

RE: Red River Mine cultural resources

As indicated in our previous reviews of this project, I contacted Duke Rivet of the Louisiana SHPO's office in July of 2007. He sent us copies of previously published reports on the archaeology of the mine property along with information about the present condition of the mine.

I subsequently talked with him after reviewing these documents and as indicated in our previous review, "*…the remainder of the mine area was surveyed and tested for significant cultural resources in 1988 (LaVardera and Keller 1988) and in 1996 (Horizon 1996). These studies are summarized in a 20 volume work titled Oxbow Lignite Surface Mine, Red River Mine, Permit Revision Application to LSM-1 prepared by the North American Coal Corporation and submitted to and approved by the Louisiana State Historic Preservation Officer's office (Rivet personal communication 2007).*"

Thus, the SHPO concurred that no additional cultural resource investigations were warranted in the mine area, particularly since any resources situated in sediments overlying the lignite would have been destroyed in the mining process.

S. Alan Skinner, PhD
President