Rural Utilities Services

San Jacinto County Peaking Facility Environmental Assessment

East Texas Electric Cooperative, Inc.

December 2007

Prepared and Submitted by:

GDS Associates, Inc.
Engineers and Consultants

GDS Associates, Inc. • 1850 Parkway Place • Suite 800 • Marietta, GA 30067 • www.gdsassociates.com
Marietta, GA • Austin, TX • Auburn, AL • Manchester, NH • Madison, WI • Indianapolis, IN

Table of Contents

1. Introduction 1
2. Project Overview 1
3. Project Need & Justification 2
4. Alternative Evaluation Analysis 3
5. Site Selection 10
6. Environmental Information 12
6.2 Floodplains 12
6.3 Wetlands 13
6.4 Historic Property Information 14
6.5 Threatened and Endangered Species Information 14
6.6 Fish and Wildlife Resources 15
6.7 Vegetation 15
6.8 Coastal Areas 15
6.9 Air Quality 16
6.10 Water Quality 22
6.11 Aesthetics 22
6.12 Transportation 23
6.13 Noise, Radio and Television Interference 24
6.14 Human Health and Safety 24
6.15 Socioeconomic and Community Resources 24
6.16 Environmental Liabilities 25
6.17 Mitigation Efforts 25
6.18 Other Environmental Issues 26
7. Scoping Meeting 26
8. Conclusions 32

Attachments:

Attachment A – Map of Site Area

Attachment B – Properties in Area of Desired Site

Attachment C – PBS&J Environmental Site Investigation

Attachment D – Proposed Site Plan

Attachment E – Best Available Control Technology Analysis

Attachment F – Scoping Meeting Display Boards

Attachment G – Scoping Meeting Handout

Attachment H – Scoping Meeting Attendance List

Attachment I – TPWD Comments

1. Introduction

East Texas Electric Cooperative, Inc. ("ETEC") is a generation and transmission ("G&T") cooperative that serves a portion of load associated with its three member G&Ts: Northeast Texas Electric Cooperative, Inc. ("NTEC"), Sam Rayburn G&T Electric Cooperative, Inc ("SRG&T"), and Tex-La Electric Cooperative of Texas, Inc. ("Tex-La"). As discussed more fully in this report, ETEC must replace existing power supply contracts due to expire on December 31, 2009. The purpose of this report is to explain ETEC's need for power, summarize the process used to determine that the relocation of four combustion turbines from Mississippi to East Texas is the most feasible option to serve the load, and provide the methodology used during the site selection process. This report, which incorporates comments provided in response to a scoping meeting held on September 25, 2007 in Shepherd, Texas, also demonstrates that the placement of a power generating plant – the San Jacinto County Peaking Facility ("SJCPF") - on the San Jacinto County site selected by ETEC will have no significant environmental impacts.

2. Project Overview

ETEC currently owns a 25% undivided interest in an existing simple cycle combustion turbine project (the "Warren Project") located in Vicksburg, Mississippi. The generating units at the Warren Project consist of four GE7EA combustion turbines with summer ratings of approximately 75 MW per unit. The remaining 75% of the Warren Project is owned by Warren Power, LLC, an affiliate of Entergy Services, Inc.

ETEC has consummated an agreement to purchase Warren Power, LLC's 75% interest in the Warren Project and to relocate all four combustion turbines to two separate locations (two turbines at each site) in southeast Texas – the Hardin County Peaking Facility ("HCPF") and San Jacinto County Peaking Facility ("SJCPF") sites. The output of the relocated combustion turbines will be used to meet ETEC load requirements currently served by partial requirements power supply contracts that will expire at the end of 2009. The relocation of the Warren combustion turbines is expected to also relieve transmission constraints in West of the Atchafalaya Basin ("WOTAB") area of Entergy's transmission system.

ETEC's Jacinto Peaking Power Facility will consist of 42 acres of woodland located approximately five miles south of Shepherd, Texas, and 1.8 miles east of U.S. Highway 59 in San Jacinto County, Texas. Two simple cycle combustion turbine-generator units will be relocated to the site and will burn natural gas, most likely from one of the four interstate transmission pipelines crossing the property (see Attachment C). The project site is located in a rural area crossed by both natural gas pipelines and a 138 kV transmission line. Access to the site from U.S. Highway 59 will be via Thomas Windt Road and Pelican Road, which will be upgraded as necessary to accommodate the transport of generating and construction equipment to the site.

3. Project Need & Justification

In 2010, ETEC will be responsible for securing 250 MW of capacity and associated energy to meet its power requirements on the Entergy system due to the expiration of two contracts: (1) the EPI/ETEC Unit Power Supply Agreement (30 MW) and (2) a partial requirements Wholesale Power Supply Agreement with Entergy Gulf States ("EGS") (220 MW). To meet a portion of the power supply deficiency, ETEC recently acquired a 50 MW ownership share in the Plum Point Energy Station ("PPES") that is currently under construction in Osceola, Arkansas. PPES's expected commercial operation date is the second quarter of 2010. In 2006, ETEC filed an RUS loan application to obtain financing for that project.

Existing Power Supply Resources (Entergy)

A list of the existing power supply resources used to meet ETEC's requirements in the Entergy control area is shown in Table 1 below:

Resource Name	Winter Capacity (2007)	Type	Expiration
ISES 2	29 MW	Ownership	N/A
EPI Ritchie2	30 MW	UPSA	December 31, 2009
EGSI	179 MW	PSA	December 31, 2009
Nelson 6	50 MW	Ownership	N/A
Harrison County	50 MW	Ownership	N/A
Warren	90 MW	Ownership	N/A
Total	428 MW		

Table 1: ETEC Existing Resources in Entergy

Capacity & Energy Requirements

Based upon the most recent RUS-approved load forecast and ETEC's existing power supply portfolio, capacity and energy tables were developed to determine the total capacity and energy needs for the period 2007 through 2029. ETEC's projected power supply needs on Entergy's system are presented below in Table 2 and graphically in Figure 1.

Resource (MW)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Annual Peak w/Losses	497.4	507.4	517.6	527.9	538.5	549.3	560.2	571.4	582.8	594.4
Reserve Requirements	74.6	76.1	77.6	79.2	80.8	82.4	84.0	85.7	87.4	89.2
Total Requirements	572.0	583.5	595.2	607.1	619.3	631.7	644.3	657.1	670.2	683.5
Long-Term Assets	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0
Purchase Power Contracts	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8
Capacity Deficiencies	212.2	223.7	235.4	247.3	259.5	271.9	284.5	297.3	310.4	323.7
Total	572.0	583.5	595.2	607.1	619.3	631.7	644.3	657.1	670.2	683.5

Table 2: ETEC Power Supply Resources

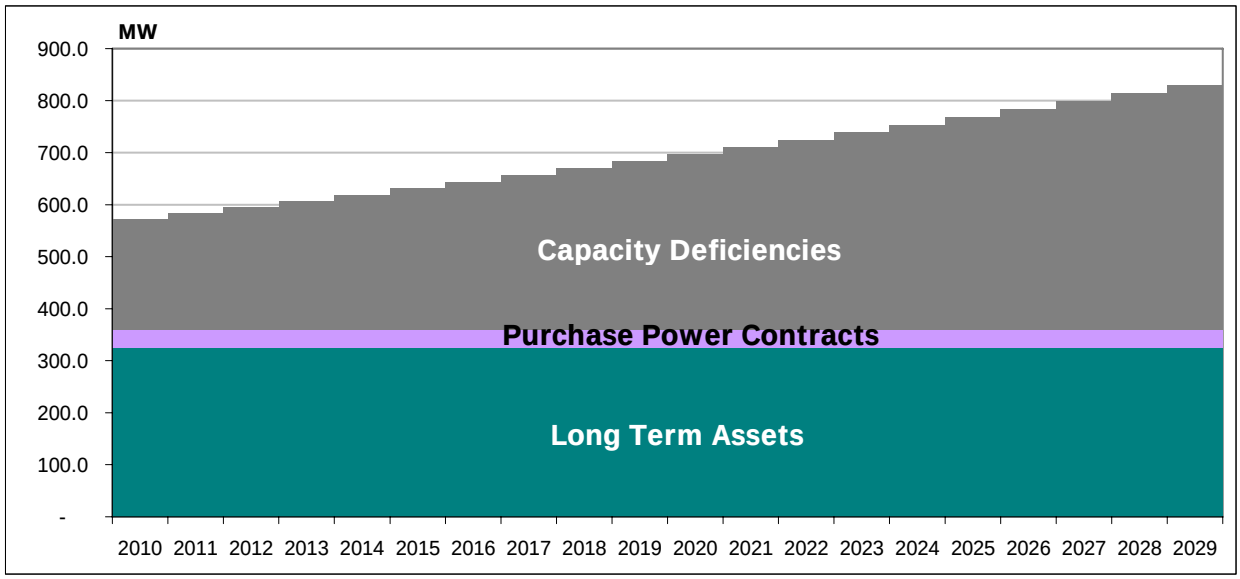


Figure 1: ETEC Capacity Requirements without Capacity Additions

4. Alternative Evaluation Analysis

Summary of August 2006 RFP Process

ETEC issued a Request for Proposals ("RFP") in August 2006 for capacity and energy totaling 460 MW to serve load in the AEP-West and EGS control areas. The RFP was issued to solicit power required due to the expiration of (1) the partial requirements power purchased under the Second Power Supply Agreement with AEP in the AEP-West control area, (2) the partial requirements power purchased under the Wholesale Power Requirements Agreement with EGS in the Entergy control area, and (3) a unit-contingent power purchased under a 40 MW Unit Power Agreement with Entergy Power, Inc. ("EPI") for unit capacity and energy from the Ritchie2 gas-fired, peaking facility located in the Entergy control area. All three of these agreements expire on December 31, 2009 and ETEC will be responsible for replacing approximately 460 MW of capacity and associated energy beginning in 2010. The type of power supply requested by ETEC included: ownership options for capacity and energy, short and long-term purchased power arrangements, and supplemental power arrangements whereby the respondent would provide the required incremental capacity and energy to meet ETEC's

instantaneous power requirements including the provision of ancillary and control area services. In addition, ETEC requested proposals from alternative resources, such as demand-side management programs and renewable resources. ETEC received a total of thirteen (13) separate proposals from eleven (11) different respondents by October 2, 2006, that ranged from energy management services to partial requirements proposals.

The RFP press release was sent to 98 power marketers and five major press publications. Table 3 below provides a summary of the responses received.

Type	# of Proposals	Capacity Range
Energy Management	6	n/a
Unit Ownership	0	n/a
System/Block Power	5	50 - 225 MW
Partial Requirements	2	Supplemental Needs

Table 3: Summary of RFP Responses

Summary of RFP Analysis

All proposals received on time and deemed complete were reviewed and placed on economic equivalencies. An evaluation model for each proposal was constructed for purposes of analyzing each proposal based on information provided in the specific proposal. The model also utilized certain key assumptions (outlined below) for comparison purposes of the proposals.

Key Assumptions for Analysis

- Consumer Price Index ("CPI") Escalation
  - Based on 2005 EIA Annual Energy Outlook
  - FOM and VOM escalation unless different escalation explicitly stated in proposals
- Fuel Price Projections
  - Coal pricing based on 2005 EIA fuel projections while natural gas pricing based on a combination of NYMEX natural gas futures and the 2005 EIA natural gas fuel price projections.
  - All natural gas indexed proposals are projected using Henry Hub index forecasts.
- Discount factor for net present value calculations was 4.90%, equivalent to the FFB long-term interest rate as of December 2006.

All proposals were evaluated based on their ability to meet ETEC's need for economical, flexible, and reliable power supply resources. Key price variables included, but were not limited to, fuel price escalation, inflation, and demand/energy pricing structure. Key non-price variables included but were not limited to, transmission viability, projected resource availability factors, and the creditworthiness of the RFP respondent.

Results of the August 2006 RFP Solicitation

Upon evaluation and completion of all power supply resource proposals received in the August 2006 RFP process, ETEC concluded that none of the power supply resources were adequate to meet ETEC's post-2009 requirements on the Entergy system. All proposals suffered from one or more of the following issues: (1) lack of available firm transmission from either an economic feasibility aspect or not capable of physically obtaining firm transmission by January 2010, (2) reliability issues due to resource unavailability or being geographically undesirable (e.g., multiple control areas away from ETEC's load on the Entergy system), (3) limited resource flexibility or inability to dispatch a resource effectively to serve ETEC's load (e.g. a 165 MW minimum dispatch on a combined-cycle facility), or (4) not economically feasible. ETEC also identified additional external constraints to procuring new power supply resources, such as: (1) prevailing and expected future transmission constraints in the Western and WOTAB regions, (2) short-term planning horizon requiring new capacity resources by January 2010, and (3) lack of generation alternatives in the Western/WOTAB region. Due to the disappointing results of the RFP and the external constraints identified above, ETEC determined that the only option for firm, reliable power supply resources to meet its load requirements beginning in January 2010 would be to obtain and site peaking generation in the Western/WOTAB region.

Transmission Issues in WOTAB

As a part of process to obtain firm transmission service for ETEC's ownership interest in PPES, Entergy indicated that its transmission system was severely constrained for all long-term firm service requests from resources outside of the WOTAB region. In fact, ETEC's transmission service request for PPES was granted as "conditionally firm" based on ETEC having a "viable redispatch option". The viable redispatch option involves reducing the output of ETEC's share of its Warren facility to 20 MW (ETEC owns 75 MW (summer rating) of Warren) during peak hours. Otherwise, ETEC will have to pay $46 million for transmission facilities upgrades to guarantee firm transmission service. The results of the August 2006 RFP (see discussion above) indicated that there were no viable resources in the Entergy control area that could reliably serve ETEC's load. ETEC began immediately assessing generation alternatives that were already located, or could be located, in the Western/WOTAB region.

Summary of January 2007 RFIB Process

ETEC issued a Request for Indicative Bids ("RFIB") for peaking generation alternatives on January 10, 2007 to replace ETEC purchased power resources that will terminate in December 2009. The peaking generation resources will help meet ETEC's load requirements on the Entergy system starting in January 2010, including associated planning reserves. The RFIB solicited proposals from project developers, original equipment manufacturers ("OEM") and engineer-procure-construct ("EPC") firms for approximately 300 MW of peaking generation to be split as evenly as possible between two sites in southeast Texas to be named by ETEC. The COD for both sites is to be on or before December 1, 2009. The RFIB requested indicative bids with cost estimates for several generation types: (1) new peaking generation, (2) used ("gray

market") peaking generation, and (3) relocation of the Warren power plant to East Texas. Indicative bids were due on January 26, 2007.

Summary of RFIB Analysis

ETEC received a total of nine separate proposals from six different respondents by January 27, 2007, that ranged from relocating the Warren plant to ownership in new FT8 generation projects. Based on the responses, all four proposals for the Warren relocation project had the lowest installed cost, on a $/kW basis, as compared to other peaking generation alternatives.

All proposals received on time and deemed complete were reviewed and placed on economic equivalencies. An evaluation model was constructed for purposes of analyzing each proposal based on information provided in the specific proposal. The model also utilized certain key assumptions (outlined below) for comparison purposes of the proposals.

Key Assumptions for Analysis

- Consumer Price Index ("CPI") Escalation
  - Based on 2005 EIA Annual Energy Outlook
  - FOM and VOM escalation unless different escalation explicitly stated in proposals
- Fuel Price Projections
  - Natural gas pricing based on a combination of NYMEX natural gas futures and the 2005 EIA natural gas fuel price projections.
- Discount factor for net present value calculations was 4.70%, equivalent to the FFB long-term interest rate as of February 2007.
- Financing term for new peaking generation was 30 years while refurbished and used generation had lives depending on the existing age of the units (e.g., Warren relocation was financed over 22 years based on the original date of commercial operation)

All proposals were evaluated based on their ability to meet ETEC's need for economical, flexible, and reliable peaking generation resources. ETEC also reviewed the financial creditworthiness and operational viability of each of the RFIB respondents to determine their wherewithal and competency to complete the proposed project.

The next phase of the screening analysis was to review the impact of various capacity factors on each of the proposed generation technologies to determine the breakeven capacity factor between these alternatives. Figure 4, shown below, contains a graph that shows the 20 year levelized rate for each generation technology at various capacity factors. Since the proposed generation resources are all categorized as peaking resources (without the conceptual combined-cycle project), the annual capacity factors range from 5% to 30%.

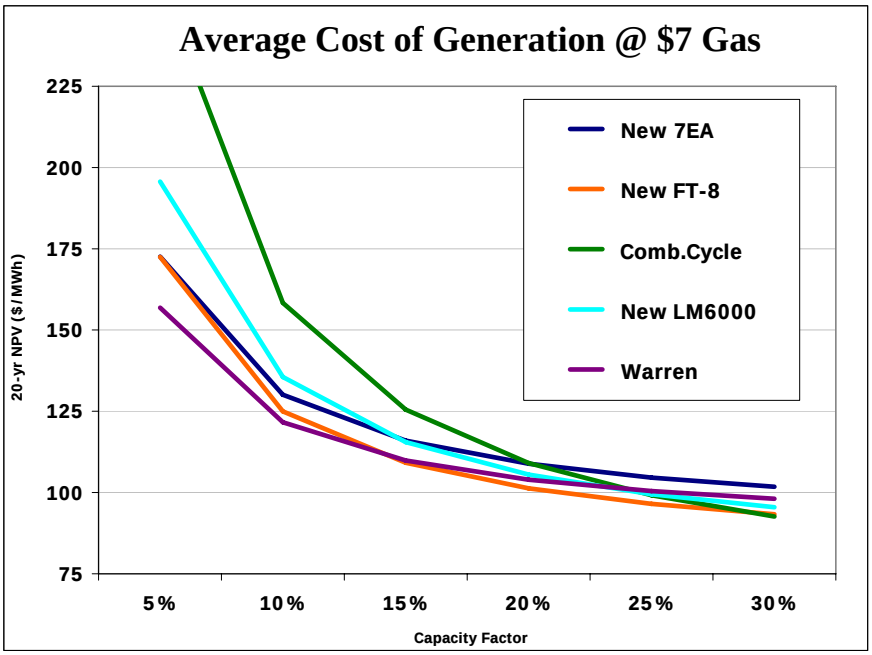


Figure 4: Screening Curve for Peaking Generation Alternatives

The screening curve analysis assumes that resources are utilized at 100% capacity output and operating at the highest efficiency, but does not include various "start-up" charges or costs associated with transmission, variable LTSA expenses, or emissions. As shown in the screening curve above, the break-even capacity factor for the Warren relocation project and a new FT-8 facility is approximately 15%, while the combined-cycle project has a breakeven capacity factor of approximately 25% and 30% with the Warren project and new FT-8, respectively.

The combined-cycle facility that is included in the screening curve analysis above represents a conceptual combined-cycle resource comprised of two 7EAs, two HRSGs, and one steam turbine. The combined capacity rating of this facility would be 254 MW in the summer and 274 MW in the winter with an estimated installed capital cost of $209 million ($821/kW and does not include IDC). The incremental cost of this proposed combined-cycle project over the Warren relocation project is approximately $100 million, which represents the addition of a 100 MW steam turbine for $1,000/kW. The operational parameters could allow this facility to dispatch as a single 7EA (from 50 to 75 MW) up to the fully loaded capacity rating while the variable cost parameters would mimic a traditional combined-cycle when fully loaded. Obviously, when the 7EAs are dispatched without the benefits of the steam turbine operation, the efficiency of the combined-cycle unit is no better than a stand-alone 7EA (with an approximate heat rate of 12.0), thus if the unit is operating at less than 60% utilization, the heat rate is equivalent to a 7EA. Because of the configuration, cost, and size of this conceptual combined-cycle project, ETEC would not be able to effectively utilize this resource to serve its load, thus this resource is deemed unacceptable at the current time. However, ETEC is evaluating the potential to configure one of the peaking generation sites to accommodate the addition of a steam-turbine in the future if it is deemed economically feasible.

The LM6000 has a breakeven capacity factor of approximately 25% with the Warren relocation project and the new 7EAs do not produce a break-even within this capacity range. Based on the results of the screening curve analysis combined with the expectation that any peaking generation resources located in East Texas would have an annual capacity factor less than 25%, ETEC decided to focus on peaking generation alternatives consisting of the Warren relocation project, new 7EAs, and FT-8s in conducting economic feasibility scenarios.

Results of RFIB Analysis

Based on the results of the screening analysis, ETEC conducted a feasibility study to evaluate a number of peaking generation alternatives and to account for the externalities that were absent in the screening analyses (e.g., dispatch parameters necessary to serve ETEC's hourly loads, transmission service implications, and ability to supplement peaking generation with market purchases).

ETEC reviewed a number of potential peaking generation combinations and eventually decided to evaluate the following five scenarios:

1. Leave Warren in Vicksburg and site 3 new 7EAs in East Texas;
2. Leave Warren in Vicksburg and site 1 new 7EA and 3 new FT8s in East Texas;
3. Relocate 2 Warren units (buy one, move two) and 2 new 7EAs in East Texas;
4. Relocate 2 Warren units (buy one, move two) and 3 new FT8s in East Texas;
5. Relocate 4 Warren units (buy three, move four) to East Texas.

As discussed in the previous section "Transmission Issues in WOTAB", there are significant transmission constraints into the WOTAB region on the Entergy system and ETEC's 50 MW ownership share of the PPES has not been granted firm transmission service because of these constraints. By leaving Warren in Vicksburg, Mississippi, ETEC would have to pay $46 million in transmission facility upgrades but would not be entitled to receive transmission credits in addition to having to fund these upgrades on an unsecured basis. Thus for scenarios 1 and 2, where ETEC's existing share of the Warren plant would remain in Vicksburg, ETEC has added $46 million, on a net-present-value basis, to the overall cost of these scenarios.

For the feasibility study, STRATEGIST was used to conduct an analysis of the annual dispatch of ETEC's existing and planned resources from 2010 through 2030 (concurrent with the remaining life of the Warren plant). For each scenario, dispatch parameters for ETEC's existing resources plus the scenario-specific new peaking generation resources, were entered into the STRATEGIST model. The dispatch parameters consisted of fixed/variable operations and maintenance rates, annual availability (including forced outage rates), and specific unit heat rates. Additional inputs into the model, including fuel prices and inflation, were consistent with all other analyses completed to date. Furthermore, STRATEGIST was used to determine the optimal expansion plan for required generation resources in the future. Generation technology alternatives for the future expansion plan consisted of a sub-critical coal plant, conventional combined-cycle, and peaking generation of 7EA and FT8 technology. The specific input variables for the new generation alternatives were obtained from the 2006 EIA Annual Energy

Outlook for heat rates and the variable/fixed O&M rates, while the installed capital cost were based on recent generation ownership proposals received by ETEC for coal, combined-cycle, and peaking generation. A market purchase option was also included in the STRATEGIST model such that when the market price curve was lower than the variable cost of ETEC's resources, STRATEGIST would purchase energy from the market. The market price curve was derived from an incremental variable cost projection of the overall demand and available generating resources on the Entergy system.

Each feasibility scenario incorporated the STRATEGIST output for generation for all of ETEC's resources in addition to the variable costs for each new ETEC resource (including the installed 2010 peaking generation resources, but excluding PPES, in each of the five scenarios). The fixed costs associated with each new ETEC resource (excluding PPES) was based on: (1) the installed capital cost per the results of the RFIB for the peaking resources and the EIA projections for the new future resources, (2) amortization schedule appropriate for each type of resource (e.g., 22 years for the Warren combustion turbines, 30 years for new 7EA/FT8s, 35 years for new coal plants), (3) fixed operations and maintenance rates, and (4) future capital additions.

The summary results of the feasibility study are shown below in Table 4. As shown in the table, the Warren Relocation Project (buy three units, relocate four to East Texas) has the lowest overall cost, in net present value terms, as compared to the other four peaking generation alternatives.

East Texas Electric Cooperative, Inc.
Feasibility Study of Peaking Generation Alternatives on Entergy System

Rank	Scenario	Description	20-year Levelized Rate ($/MWh)	20-Year Total NPV Cost ($000)
1	Scenario 5	Relocate all 4 used units of Warren	71.74	1,070,189
2	Scenario 4	Relocate 2 used Warren units; buy 3 new FT-8	72.16	1,076,363
3	Scenario 3	Relocate 2 used Warren units; buy 2 new 7EAs	72.58	1,082,618
4	Scenario 1	Don't relocate Warren; buy 3 new 7EAs	74.13	1,105,743
5	Scenario 2	Don't relocate Warren, buy 1 new 7EA and 3 new F-T8's	74.67	1,113,823

Assumptions

1/ Study period is from 2010 - 2030, based on the remaining life of Warren units.

2/ All cases assume financing for 100% of new/used peaking generation, including the Warren relocation project.

2/ Variable costs and generation obtained from STRATEGIST runs while fixed costs are based on amortization and fixed O&M for each resource.

Table 4: Summary of Feasibility Study for Peaking Generation Scenarios

5. Site Selection

Based upon the need for capacity in the WOTAB area, as well as the opportunity to address transmission constraints on Entergy's system, ETEC began the process of identifying potential sites where the Warren combustion turbines could be relocated. ETEC initiated power flow studies to determine which potential generating unit locations would provide the most relief for transmission congestion in the WOTAB area. These studies revealed that siting units near Entergy's Cypress substation near Kountze, Texas would provide the most transmission relief. Accordingly, ETEC intends to locate two of the combustion turbines at the Cypress site (see Site Selection Study for Cypress site for more information). The results of the transmission study and siting investigation were presented to ETEC's Board of Directors, which approved funding for site acquisition in January 2007.

During the course of negotiations for energy management and control area services with Entergy, ETEC was informed that locating an additional site in Entergy's service area west of the Trinity River would be a condition for receiving such services from Entergy. Given the reliability and diversity benefits associated with having two sites, ETEC agreeably began pursuing a second site. Entergy provided a list of suitable locations near existing Entergy substations. These substations included the Jacinto substation located in northern Liberty County near Cleveland, the Grimes substation located in Grimes County near Shiro, and the Porter substation located in Montgomery County near Porter Heights, Texas. Based upon this list, ETEC initially rejected the Grimes County site due to its limited gas pipeline access (a single Atmos line approximately five miles west of the substation) and the Porter substation due to its location deep within Montgomery County, which is part of the Houston-Galveston non-attainment area for NOx. ETEC then chose to investigate the general location north of Entergy's Jacinto substation (see Attachment A), as this area offered two distinct advantages: 1) the plant site could be located in San Jacinto County, which is in attainment for NOx under the National Ambient Air Quality Standards (NAAQS) and 2) the presence of numerous natural gas pipelines in the area.

ETEC's land acquisition expert first investigated the viability of properties on the market in southern San Jacinto County and located one property just east of the intersection of U.S. Highway 59 and FM 2914. However, when this site was investigated further, it was discovered that the site was more than one mile from the nearest transmission interconnection and that any line connecting the plant to the road would cross several properties. This situation was undesirable because a certificate of convenience and necessity (CCN) from the Public Utility Commission of Texas (PUCT) would be required to construct a transmission line over one mile in length with the possibility of intervention by a number of affected property owners. In addition to costs associated with the construction of transmission lines, the permitting requirements most likely would have led to untenable delays in obtaining permission for the construction of the line. ETEC then proceeded to focus its efforts on unadvertised properties adjacent to Entergy's 138 kV line (see Attachment A).

While investigating aerial photographs along Entergy's 138 kV line, ETEC's representatives became aware of what appeared to be an ideal site at the intersection of a number of pipelines and Entergy's 138 kV transmission line just north of the Liberty-San Jacinto County line. Having previously secured an option on one site (Hancock at Cypress) from a previous logging tract, ETEC's agent decided to contact Temple-Inland to make inquiries concerning the availability of the company's San Jacinto County property located south of the pipelines and west of Entergy's transmission lines. However, these efforts were not fruitful, and ETEC then began investigating property records to discover the names of the owners of the tracts that were eventually optioned. This site appeared to be ideal, as the required electric transmission interconnection can be made entirely within the property's boundaries, and at least one of the four pipelines crossing the property should be available to connect and provide natural gas to the project (see Attachment A for a map of the site and nearby gas pipelines). Power flow studies confirmed that locating the second pair of generating units at the Jacinto location was viable from a transmission perspective.

Additional investigations were initiated, and an unsolicited offer was submitted in April 2007 to the owners of the tract determined to be ideal for ETEC's purposes. This offer was accepted, and environmental investigations were initiated in May 2007. The property selected is a rectangle consisting of two tracts controlled by the same owner, who refused to sell the larger tract separately. ETEC has received initial assurances from Entergy that 168 MW or more of generating capacity can be connected to the 138 kV transmission line crossing the property. It has not yet been determined whether Entergy will desire a radial or through-bus interconnection, so both options have been illustrated on Attachment B. In both cases, the transmission lines necessary for interconnection will be located entirely within the property purchased by ETEC for the generating plant.

At ETEC's request, PBS&J conducted a Phase I Environmental Site Investigation ("ESI") in May 2007. A copy of PBS&J's ESI is provided as Attachment C.

Site Description

ETEC's Jacinto Peaking Power Facility will consist of 42 acres of woodland located approximately five miles south of Shepherd, Texas, and 1.8 miles east of U.S. Highway 59 in San Jacinto County, Texas. Two simple cycle combustion turbine-generator units will be relocated to the site and will burn natural gas, most likely from one of the four interstate transmission pipelines crossing the property (see Attachment D – Site Plan). The project site is located in a rural area crossed by both natural gas pipelines and a 138 kV transmission line. The nearest residential property (a single residence) is approximately 1,250 feet from the proposed plant location and is screened from the plant site by forested area. As noted in PBS&J's report, the proposed site does not appear to have any significant environmental liabilities. ETEC closed the purchase of the site on October 10, 2007.

6. Environmental Information

6.1 General Land Use

The subject property is in an area predominantly characterized as undeveloped woodlands crossed by cleared natural gas pipeline and electric transmission line rights of ways. As shown on Attachment B, the site selected lies more than 1,500 feet from the nearest residence and more than a mile from any developed area. The site has the additional advantage that it is bounded on two sides by existing roads. The project site is in a rural location not subject to zoning ordinances. Less than ten acres of the 42.25 acre site will be disturbed by construction.

ETEC is committed to adhere to recommendations of the District Conservationist to minimize soil erosion.

6.1.1 Important Farmland, Prime Forest Land and Prime Rangeland

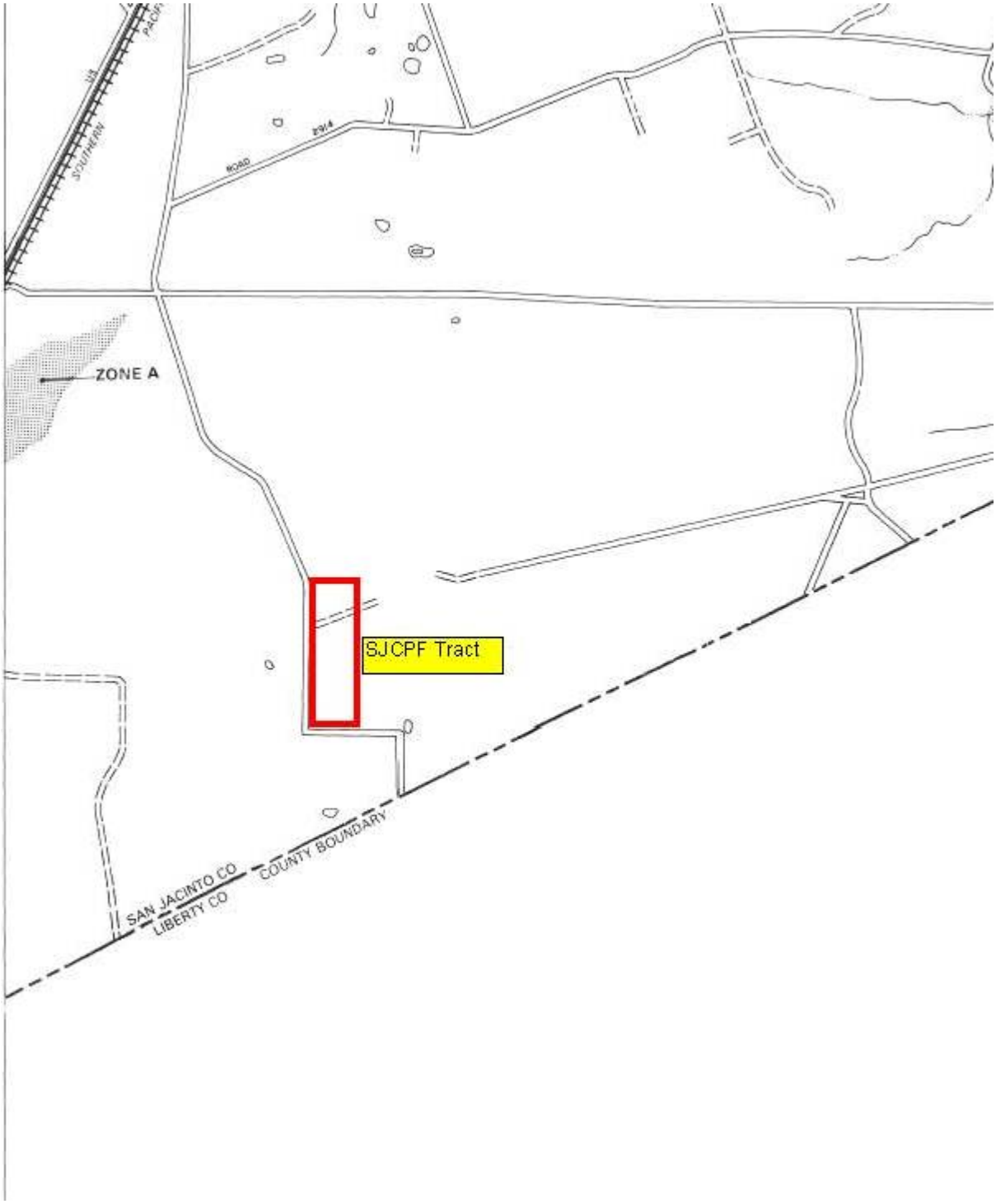
In their Phase 1 ESA dated November 2007, PBS&J characterized the 42.25 acre site as "undeveloped wooded land."

6.1.2 Formally Classified Lands

Based on the information noted in Section 6.1.1. above and the presence of cleared rights of way, ETEC concluded that the project site does not contain any formally classified lands, nor does access to the site require crossing any formally classified lands.

6.2 Floodplains

In Section 8 of their Phase I ESA, PBS&J noted that there "are no streams or other waterways within the project area. Surface water runoff is in the general direction of northwest to southeast according to the USGS topographical map. The site is not located within Zone A or any of the FIRM floodplain designations." The site is also not located within the 100 or 500-year floodplains. This conclusion is supported by the map section shown below.



6.3 Wetlands

In Section 8.2 of its ESI Report, PBS&J noted that "no creek or stream crosses the project study area." However, PBS&J did note the presence of a possibly contiguous forested wetland

in the northeast corner of the subject property. Regardless, as this potential wetland lies north of the electric power distribution line that separates the northern quarter of the property from the remainder of the site, the wetlands area is not suitable for development, and no construction activities will take place in potential wetlands areas.

6.4 Historic Property Information

In May 2007, PBS&J archeologists conducted an intensive cultural resources survey of the 42 acre San Jacinto County site. The final report, "A Cultural Resources Survey of the Proposed East Texas Electric Cooperative Power Plant Site San Jacinto County, Texas" is included as Exhibit 10 to Attachment C. PBS&J performed the investigation in accordance with the National Historic Preservation Act of 1966 (Public Law 89-665) as amended in 1974, 1976, 1980, and 1992; the Antiquities Code of Texas (Title 9, Chapter 191, Texas Natural Resources Code of 1977); the National Environmental Policy Act of 1969 (PL 91-190.83 Stat. 915, 42 USC 4321, 1970); the procedures of the Advisory Council on Historic Preservation (36 CFR 800); and other appropriate cultural resources legislation and guidelines, as well as the guidelines set forth by the Register of Professional Archeologists and the Council of Texas Archeologists. No archeological or cultural sites were encountered and recorded during the investigations.

On August 24, 2007, Dan Wittliff of GDS Associates contacted Sidney Poncho (Purchasing Agent for the Alabama-Coushatta Tribe) at and explained the location and size of ETEC's proposed San Jacinto County facility. Mr. Wittliff asked if there were any cultural sites in southern San Jacinto County that were of concern to the Tribe. Mr. Poncho said he would contact Mr. Wittliff if the Tribe had any concerns, with no such correspondence occurring prior to the date of this report. Mr. Poncho did ask about the impact such peaking facilities would have on customers of the ETEC member cooperatives such as Sam Houston Electric Cooperative who serves the Alabama-Coushatta tribe on their reservation about 15 miles dues east of Livingston, Texas.

6.5 Threatened and Endangered Species Information

PBS&J conducted a regulatory database search and literature review prior to the May 2007 field effort at the San Jacinto County Peaking Facility site. This regulatory database review included the Texas Parks and Wildlife Department's (TPWD) Natural Diversity Database (NDD) and U.S. Fish and Wildlife Service's (USFWS) county list of federally listed threatened or endangered species. PBS&J also reviewed aerial photos from 1957 through 2005 prior to conducting a pedestrian survey of the 42-acre site. PBS&J included the Endangered and Threatened Species assessment within Section 8 of their report on the Phase 1 ESI. They considered the following species in making their assessment of the habitat: bald eagle, red-cockaded woodpecker, piping plover, Louisiana black bear, red wolf, and Louisiana pine snake. Based on the pedestrian survey of the site and an evaluation of the habitat, PBS&J concluded that "the subject property is not expected to support federally listed threatened or endangered species of potential occurrence in San Jacinto County."

6.6 Fish and Wildlife Resources

To protect large birds from the dangers of electrocution, the transmission line serving the project will be designed and constructed in accordance with the latest practices for raptor protection. The line will be designed for operation at 138 kV. High voltage operation ensures ample separation between energized areas and should not pose an electrocution threat.

Most of the construction activity will take place in forested areas adjacent to existing roadways. With proper erosion control measures, impact upon wildlife on the plant property is expected to be minimal. All pipeline and electric interconnections will be located within the site boundaries.

6.7 Vegetation

A description of vegetation in the San Jacinto County Peaking Facility area is contained within Chapter 8 of the "Environmental Site Investigation, Proposed East Texas Cooperative Power Plant Power Plant Site, San Jacinto County, Texas by PBS&J, November 2007 (Attachment C)." As indicated in Section 8.2.of the PBS&J ESI, the project area is located within the Pineywoods Vegetational Area. PBS&J observed four primary vegetation communities on the tract: upland grassland (pasture grasses, presumably seeded) in the pipeline and electrical transmission line ROW, non-forested emergent wetlands in the pipeline and electrical transmission line ROW, mixed bottomland hardwood forests, and the red maple/willow oak forested wetland. The forested wetland is located in the northeastern corner of the property and will not be disturbed by the construction of the power plant, which will be built on the lower two-thirds of the 42-acre site. The non-forested emergent wetlands (about 8.5 acres of the 42-acre site) do not appear to be connected to wet areas off-site. The uplands area is covered in bahiagrass and bermudagrass. The dominant species in the mixed/bottomland forest (the majority of the property) are loblolly pine, water oak, and cherry-bark oak. To a lesser degree, blackgum also inhabited this area. The trees varied in size from 2 to >20 inches in diameter at chest height. The non-forested emergent wetlands includes several rushes, beakrush, umbrella sedge, gaping panicum, spike rush, and arrowhead. The red maple/willow oak forested wetland is dominated by both species in the center and lower area and dominated by the willow oak around the edges. These trees varied in size from 2 to >20 inches in diameter at chest height.

6.8 Coastal Areas

According to the Texas General Land Office website **[http://www.glo.state.tx.us/ coastal/cmpdoc/jpegs/guidance1beaumont-sm.jpg]** and the boundaries of the Texas Coastal Zone, San Jacinto County and the proposed plant site are not in a coastal area.

6.9 Air Quality

Air emissions from the San Jacinto County Peaking Facility will be regulated by the Texas Commission on Environmental Quality ("TCEQ"). A copy of ETEC's application for a Permit to Construct and Operate will be provided to RUS upon submittal to TCEQ.

6.9.1 Sources and Types of Emissions

The project application lists the following relevant emission sources:

- Two gas turbines
- Turbine oil mist vents
- Water treatment chemical storage tanks
- Natural gas pipeline equipment leak fugitives
- Fuel gas heaters
- Diesel powered emergency fire water pump

6.9.2 SIP Compliance

The facility will be not a major source, as the potential to emit for CO, NOx and PM_{10} will not exceed 100 tpy. San Jacinto County, where the facility will be located, is currently classified as in attainment for ozone; however, this classification could be changed to moderate non-attainment with the promulgation of proposed regulations.

6.9.3 Air Quality Impacts of Construction

During construction, depending on weather conditions, fugitive dust emissions will be controlled to insignificant levels by spraying water. Construction is scheduled to begin on June 1, 2008 and continue until shortly before the facility becomes operational early in the summer of 2009.

6.9.4 Compliance with Ambient Air Quality Standards

The facility will be designed, constructed, and operated in a manner consistent with good air pollution control practices for minimizing emissions. In accordance with RUS Regulation C, the pollution control system proposed for this facility consists of dry low NOx (DLN) burner technology for NOx emissions control.

No National Emission Standards for Hazardous Air Pollutants (NESHAPS) apply to this facility since none of the hazardous air pollutants (HAPs) identified in 40 CFR Part 61 Subpart A are emitted or handled in sufficient quantities to trigger NESHAPS.

The project will not emit more than ten tons per year of any single HAP or 25 tons per year of any combination of HAPs under proposed operating conditions.

As shown in the map below, the SJCPF will be located outside of the buffer zone for PSD Class I areas.

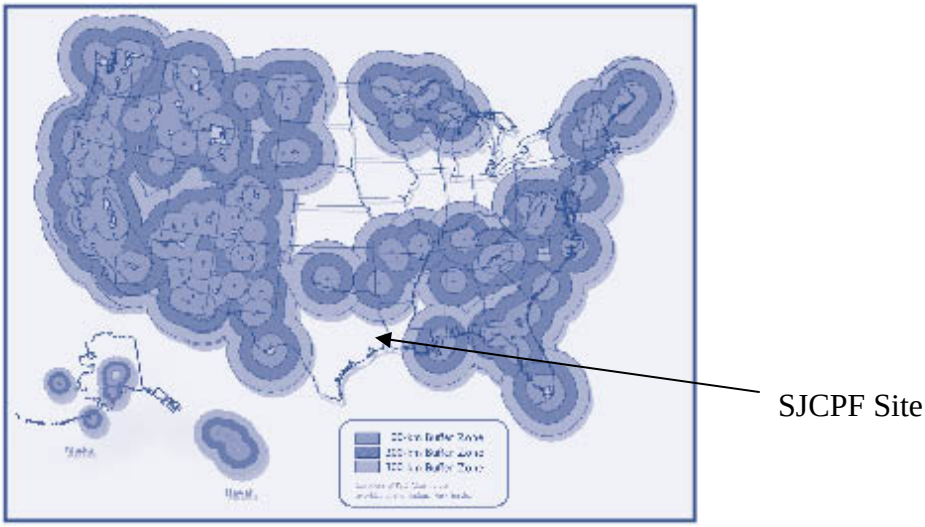


Figure 1 - Buffer Map of PSD Class I Areas

A dispersion modeling analysis will be performed to model the impact of the proposed project. The predicted concentrations of CO, NOx, PM_{10} and/or SO_2 are anticipated to be below the corresponding de minimis levels, therefore, a full impact analysis will not be required. A full impact analysis would include identifying the radius of impact for the area of impact (AOI) for each pollutant that exceeds the de minimis level. A primary retrieval from the Point Source Data Base will need to be conducted to identify sources that could cause a significant impact within the AOI. The combined concentration (predicted plus background) for each pollutant of concern will be compared to the appropriate NAAQS to demonstrate compliance. Additionally, demonstration of compliance with the PSD increment must be completed for each pollutant of concern for the full impact analysis. Results will be detailed in the final modeling report.

The gas turbines are subject to NSPS Subpart GG - Standards of Performance for stationary Gas Turbines. The SJCPF will comply with the applicable monitoring, record keeping, and reporting requirements pursuant to Subparts A and GG of Part 60.

6.9.5 BACT Analysis

A Best Available Control Technology (BACT) Analysis was conducted by WCM on the project's gas turbines, duct burners and cooling towers in accordance with the TCEQ Gas Turbine (GT) Best Available Control Technology (BACT) Review Revised April 2001. The

analysis is presented in Attachment E, "Best Available Control Technology Analysis, San Jacinto County Peaking Facility." A summary of the BACT analysis process and findings are included in the following paragraphs.

A three-tiered BACT analysis was conducted for carbon monoxide (CO), nitrogen oxides (NOx) particulate matter less than 10 microns (PM_{10}), volatile organic compounds (VOC) and sulfur dioxide (SO_2) emissions from the project's combustion turbines, duct burners and cooling towers. In the first tier, controls accepted as BACT in a recent permit review for the same process/industry can be approved as BACT in a current review if no new technical developments have been made which would justify additional controls as economically or technically reasonable. The review of control technologies under the first tier is relatively straightforward in that technical practicability and economic reasonableness have already been demonstrated by use.

The second tier takes into account controls which have been accepted as BACT in recent permits for similar streams in a different process/industry. The second tier may require additional research to review cross technology, but an in-depth economic analysis is avoided since economic reasonableness has already been demonstrated by use.

The third tier of review is a detailed technical and economic analysis of all control options available for the process being reviewed. Technical practicability aspects include the demonstrated success of the control technology as determined by previous use, an assessment of the technical success of a new technology, and/or the availability and reliability of the proposed control system. Economic reasonableness is determined solely in the cost effectiveness of controlling emissions and does not take into account the effect of control cost on corporate economics. It is evaluated on a dollar per ton ($/ton) basis considering both incremental and total tons controlled, although the focus is primarily on the $/total ton number. The third tier of review is rarely necessary because technical practicability and economic reasonableness have usually been firmly established by industry practice as identified in the first two tiers.

As stated in the April 2001 draft BACT guidelines, the BACT recommendations in this document are not official policy of the TCEQ, but rather guidelines for the purposes of assisting the regulated community in determining Tier I BACT for GTs. The Texas 3-tiered BACT process continues to be case-by-case based on technical practicability and economical reasonableness. The BACT levels for GTs are at the stack on an annual basis assuming full load operation firing natural gas. Allowances in permitted emission concentrations can be made for alternate fuels, reduced loads and short-term variations in GT operation. As discussed earlier, flexibility is routinely afforded to short-term emission limits, but the specific limits vary according to turbine operation, manufacturer data and other facility specific information. A summary of the proposed Tier I BACT recommendations is shown in Table 1.

Table 1: TCEQ Tier I BACT for GTs			
Revised April 2001			
Turbine Service	**NO_x[1]**	**CO[1]**	**VOC[1]**
Peaking Units (operating less than 2,500 hrs per year)	**9 to 15**	**9 to 25**	**2**
Simple Cycle	**9**	**9 to 25**	**2**
Combined Cycle w/heat recovery only[2]	**5**	**9 to 25**	**2**
Combined Cycle w/heat recovery and supplemental firing[2]	**5**	**9 to 25**	**4**

1. Emission concentrations are annual limits based on full load operation firing natural gas and expressed in units of ppmv, dry basis, corrected to 15 percent O_2. Allowances in permitted emission concentrations can be made for alternate fuels, reduced loads and short-term variations in GT operation.
2. GTs controlled with SCR technology will be limited to an allowable NH_3 slip of 7 ppmvd on an hourly basis.

6.9.5.1 BACT Analysis for CO

Gas Turbines - The results of the three tiered BACT review identified two potential control alternatives for minimizing emissions of CO from the gas turbines. The project is planning to implement combustion air flow controls to achieve CO concentrations of 9 to 25 ppm_{vd} corrected to 15% oxygen to meet BACT. The level of control for CO that can be achieved with this alternative is consistent with current TCEQ BACT draft guidelines. Consequently, this alternative is technically practical and economically reasonable for the gas turbines.

The San Jacinto County Peaking Facility is proposing to utilize good combustion practices to minimize CO emissions from the combustion turbines. Utilizing this approach, an emission level of 25 ppmvd corrected to 15% oxygen at the stack for CO on an annual average basis can be achieved across the range of normal operating conditions (i.e., 50% to 100% turbine load). The proposed project is utilizing good combustion practice technology as BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, the technology and emission rate are consistent with recent permit actions in Texas. The proposed emission level is

consistent with that identified in the "Current BACT Requirement" for natural gas-fired simple cycle combustion turbines identified on the TCEQ's BACT Guidelines for Combustion Sources.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Good combustion practices are, and remain, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

6.9.5.2 BACT Analysis for NOx

Gas Turbines – In section IV. D. of the 2001 Draft Guidance on BACT, TCEQ recommends that combustion turbines in simple cycle (SC) operation be limited to 9 to 15 ppm_{vd} of NOx in peaking operation for less than 2,500 hours per year. However, for SC units operating greater than 2,500 hours per year are limited to 9 ppm_{vd} of NOx. Because these units are intended to operate as peaking units for up to approximately 3,000 hours per year, the latter BACT standard for NOx applies here. The three tiered BACT review identified several potential control alternatives for minimizing emissions of NOx from the gas turbine. Only one of the control alternatives identified will be able to achieve the NOx emissions levels that are preferred by the TCEQ.

The San Jacinto County Peaking Facility is proposing to utilize DLN combustors to minimize NO_X emissions from the combustion turbines. Utilizing this approach, an emission level of 9 ppmvd corrected to 15% oxygen at the stack for NO_X on an annual average basis can be achieved under normal operating conditions (i.e., 50% to 100% turbine load). San Jacinto County Peaking Facility is proposing to utilize DLN combustors as BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, the technology and emission rate is consistent with recent permit actions in Texas. The proposed emission level is consistent with that identified in the "Current BACT Requirement" for Turbines outlined on the TCEQ's BACT Guidelines for Combustion Sources web page.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. DLN combustor installation is, and remains, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

6.9.5.3 BACT Analysis for PM_{10}

Gas Turbines - The results of the three-tiered BACT review identified one potential control alternative for minimizing emissions of PM_{10} from the gas turbines. San Jacinto County Peaking Facility is proposing to use good combustion practices coupled with firing pipeline quality natural gas as BACT. This technology is consistent with the technology selected on other

recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, this approach is consistent with recent permit actions in Texas.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Good combustion practices along with firing pipeline quality natural gas are, and remain, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

6.9.5.4 BACT Analysis for SO_2

Gas Turbines - The three-tiered BACT review identified one potential control alternative for minimizing emissions of SO_2 from the gas turbines. San Jacinto County Peaking Facility is proposing to fire the combustion turbines on pipeline quality (with typical sulfur levels of only 2,000 grains per million cubic feet) natural gas as BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, the technology and emission rate is consistent with recent permit actions in Texas.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Firing of pipeline quality natural gas is, and remains, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

6.9.5.5 BACT Analysis for VOC

Gas Turbines - In section IV. D. of the 2001 Draft Guidance on BACT, TCEQ recommends that combustion turbines in simple cycle (SC) operation be limited to 2 ppm_{vd} of VOC regardless of whether they operate in SC mode or as peaking units. San Jacinto County Peaking Facility is proposing to utilize good combustion practices to minimize VOC emissions from the combustion turbines. Utilizing this approach, an emission level of equal to or less than 2.0 ppmvd corrected to 15% oxygen at the stack for VOC on an annual average basis can be achieved across the normal operating range (i.e., 50% to 100% turbine load).

Consequently, the proposed project is utilizing good combustion practice technology is BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, the technology and emission rate is consistent with recent permit actions in Texas. The proposed emission level is consistent with that identified in the "Current BACT Requirement" for Turbines posted on the TCEQ's BACT Guidelines for Combustion Sources web page.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Good combustion practices remain the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

6.9.5.6 BACT Analysis for Sulfuric Acid Mist (H_2SO_4)

Gas Turbines – Sulfur acid mist (H_2SO_4) formation is a function of the sulfur in the fuel and sulfur oxides in the exhaust gas. The sulfur oxides concentration in the exhaust gas is a function of the sulfur content of the fuel; therefore, the same analysis for SO_2 applies. See the BACT discussion for SO_2.

6.9.5.7 BACT Analysis for Formaldehyde

Gas Turbines – San Jacinto County Peaking Facility is proposing to utilize good combustion practices to minimize formaldehyde emissions from the combustion turbines. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, this approach is consistent with recent permit actions in Texas.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Good combustion practices along with firing pipeline quality natural gas are, and remain, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

6.10 Water Quality

ETEC will connect directly to the existing transmission line crossing its property. ETEC will ensure that herbicide and/or pesticide use on site and on right-of-ways will not impact any wetlands, ponds, or streams.

At this point, there is a possibility that the project will use on-site wells for domestic water and fire protection only. In the event that on-site wells are used, there is expected to be no significant impact upon the aquifer from which the wells would draw.

6.11 Aesthetics

Due to the density of surrounding woods, the SJCPF will be barely visible from the adjacent Pelican Road, which is seldom traveled. The tops of the stacks will be completely invisible from the nearest U.S. or State Highway. or 69/287. Surrounding woods generally screen the plant site from view. As there are power line and natural gas pipelines already crossing the property, aesthetics would not be expected to be a significant public concern, nor should the area be considered a visually sensitive area.

6.12 Transportation

The nearest airport is Cleveland Municipal Airport, which lies approximately four miles south of the proposed project site. The estimated 56 foot (approximate) stack heights proposed for ETEC's San Jacinto County Peaking Facility are significantly less than the height of towers nearby the airport and fall near the level of existing trees which will remain surrounding the plant site. The stacks should thus have no impact upon air traffic. The EPC contractor will be responsible for obtaining necessary FAA permits for cranes used in the erection of the generating units.

The simple cycle combustion turbine project will burn natural gas from a new pipeline connected to a transmission pipeline on the plant site. No highway crossings are anticipated for the pipeline interconnection.

Construction deliveries should have only a minimal impact on the traffic on nearby U.S Highway 59, which already accommodates a great deal of truck traffic. ETEC has approached

San Jacinto County authorities to coordinate the necessary road upgrades to accommodate equipment deliveries to the plant site. Less than five employees are expected to be on the site once it begins operation; however 50-100 construction workers may be on the site for short durations at any given time during the construction period (July 2008 through May 2009).

The facility will connect to an existing 138 kV transmission line within the property boundaries.

6.13 Noise, Radio and Television Interference

The following noise mitigation measures have been incorporated into the project:

- The combustion turbines will be enclosed in an acoustic housing to reduce the mechanical noise emissions radiated through the turbine housing.
- The combustion turbines will be equipped with inlet silencers to reduce noise radiated from the turbine compressors.
- The combustion turbine stacks will be equipped sound deadening materials sufficient to ensure sound levels at or below 55 dBA at a distance of 400 feet.

Construction equipment and vehicles will be equipped with standard noise control equipment to minimize the effects of project construction on local noise levels. Project components considered to be significant noise sources will be equipped with the appropriate noise control devices to minimize noise impacts during project operation.

As noted above, the project will be located approximately 1,500 feet from the nearest residence and screened by thick woods. The project site lies adjacent to existing high-voltage power lines, so noise impacts, as well as any electrical impacts upon communications, should be minimal.

6.14 Human Health and Safety

The proposed project is not located near any residential areas, schools, health facilities or other public facilities. Transmission lines are not expected to be located within 500 feet of any residence, therefore EMF should not be of concern.

6.15 Socioeconomic and Community Resources

ETEC anticipates that 50 to 100 construction workers may be on the site at any given time during the June 2008 through June 2009 construction period. It is not anticipated that a significant number of these workers will relocate to the plant area. Rather, construction workers will likely live in nearby cities such as Livingston and Houston, both of which are less than an hour's drive from the plant site. The five or less permanent employees located at the facility

once it becomes operational should have no significant impact upon community resources, as again, most will probably locate in nearby cities and/or towns. To the contrary, the significant addition to the area tax base provided by the project should more than compensate for any growth impacts.

As no significant environmental impacts are anticipated, there should be no concern for environmental justice issues. ETEC and GDS are working closely with those residing close to the proposed site to ensure that their concerns are adequately addressed.

6.16 Environmental Liabilities

PBS&J conducted a Phase I Environmental Site Assessment (ESA) of the San Jacinto County site. The PBS&J assessment is included as Sections 1 through 7 of Attachment C. PBS&J concluded that there was "no evidence of current or prior hazardous material storage, usage, or spillage that may pos an environmental concern on the subject property."

6.17 Mitigation Efforts

Specific mitigation efforts, if necessary, are addressed under the individual headings in Section 6 above. ETEC's request for proposals for Engineering Construction and Procurement services for the relocation of the Warren units to the SJCPF includes the following provisions:

"The facilities shall be designed and constructed to the requirements provided in the permits that will be received by Owner for the project including, but not limited to, the following:"

- Certificate of Representation for Acid Rain, CAIR, and CAMR programs
- Clean Air Act/Continuous Emissions Monitoring System Certification
- Clean Air Act/New Source Review
- Clean Air Act/Title IV Acid Rain Permit (NO_x and SO_2) (Abbreviated with Variance Request)
- Clean Air Act/Title IV Permit Compliance Certification (NO_x and SO_2) (Offsets)
- Clean Air Act/Title V Federal Operating Permit (abbreviated filing before Ops1)
- Clean Air Act/Title V Federal Operating Permit (Full Application)
- Clean Air Interstate Rule (CAIR) permit application under §122.424
- On Site Sewage Facility (OSSF) Permit [TCEQ-10]
- T.P.D.E.S. Storm Water Pollution Prevention Plan
- T.P.D.E.S. Storm Water NOI TXR150000
- TCEQ Clean Water Act 401 Water Quality Certification (Tier I Small Project)
- TCEQ Notice of Registration as a Solid Waste Generator (expect to be a CESQG facility)
- Texas D.O.T. Road Crossing and Easement Permit (installation of gas and water lines
- Texas Historical Commission and Antiquities Permit(s)

- U.S. Army Corps of Engineers Clean Water Act 404 Permit (N.W.P. 12, 16, and 18) (Dredge and Fill Permit)
- U.S. Army Corps of Engineers-Wetland Delineation Report Review (401 Certification of no net loss of wetlands)
- U.S. Fish & Wildlife Threatened or Endangered Species Impacts Assessment (Document for file if none; consult with USFWS if there are impacts from project including power line)
- USEPA Identification Number [assigned to each generator, transporter, and treatment, storage, or disposal facility by regulating agencies to facilitate identification and tracking of chemicals or hazardous waste]
- USEPA VI Facility Spill Response

ETEC intends to have a representative at the Warren dismantlement and SJCPF construction sites a majority of the time that work is in progress to ensure compliance with contract terms.

6.18 Other Environmental Issues

While not currently regulated, the potential impact of carbon dioxide (CO_2) emissions from power generating facilities has become an issue of increasing concern. The San Jacinto County Peaking Facility offers not only relatively low CO_2 emissions by firing natural gas, but also provides ancillary benefits. The location of the units in an area with identified transmission constraints will allow more efficient operation of Entergy's generating system, primarily by reducing the amount of excess generation from existing facilities that must remain on line at minimum load (a very inefficient operating point) in off-peak periods. As generating system operating efficiencies increase, the amount of fuel burned per megawatt-hour decreases and CO_2 emissions should therefore decrease as well. Renewable generating resources such as wind and solar generally do not increase carbon emissions but have the drawback of decreased availability, thus they are better suited as an intermediate rather than a peaking resource. Fast-starting simple cycle combustion turbines provide the ideal complement to renewable resources as they can be readily brought on line when renewable resources are not operating at full capacity.

7. Scoping Meeting

RUS conducted a scooping meeting hosted by ETEC and their member electrical cooperatives at the Shepherd ISD Board Room on September 25, 2007 from 5:00 PM to 8:00 PM. GDS Associates, Inc. provided the display boards (see Attachment F) and information package (Attachment G) and answered questions raised by the six individuals (see sign-in sheet, Attachment H) who attended the scooping meeting. Feedback from these individuals was generally positive.

In addition to questions from the attendees, Texas Parks and Wildlife Department (TPWD) submitted a set of interrogatories identified in their October 26, 2007 letter to RUS (see Attachment I). The issues raised by TPWD included:

- Inadequate information to assess the potential impacts upon fish and wildlife resources.
- No summary of potentially impacted vegetation.
- No information on rare vegetative resources documented to possibly be in the project area.
- No assessment of impacts on migratory birds.
- Recommendation to reseed disturbed soils with native grasses and forbs.

A complete response will be provided to the TPWD upon completion of the final reports noted below. ETEC's response for the purpose of this environmental report is as follows:

ITEM 1

Project Information

Due to the lack of information regarding the fish and wildlife impacts of the proposed project, it is not possible to adequately assess the potential impacts of this project upon fish and wildlife resources.

Recommendations: In general, an inventory of existing natural resources should be made of the project area. Specific evaluations should be designed to predict project impacts upon these natural resources. Sufficient documentation should be supplied to accurately interpret the value of the natural resources involved and the extent to which the project will impact these resources.

- This can often be accomplished best with aerial and ground photography, terrain maps, charts and tables, and narrative descriptions of these data.

More detailed information outlining the requirements and expectations of this Department concerning environmental assessments are attached in a document entitled, "***Texas Parks and Wildlife Suggested Guidelines for Preparation of Environmental Assessment Documents.***"

RESPONSE TO ITEM 1:

Attachment C includes extensive general location maps, site maps, regulatory agency database report, topographic maps, soils maps, geology maps, flood insurance rate maps, historic aerial photographs, and site photographs of both the San Jacinto County Peaking Facility site and the immediate surrounding area. The scope of this site assessment included:

1. Site Visit – Inspected site visually to determine existence of conditions of environmental concern such as storage tanks, chemical storage, irregularities in site's soil or vegetation, and possible presence of hazardous materials or petroleum products as well as existing land use of adjacent properties.

2. Setting – Reviewed available information to characterize physical setting and geology of site including surface elevation, surface drainage, surface run-off and run-on, and other identifying physical features.

3. Site History – Traced history of site including: examining historical aerial photographs, interviewing people familiar with the site, and examining other historical documents.

4. Regulatory Agency Review – Reviewed and evaluated available public information regarding the site including: CERCLIS, RCRA-G, CORRACT, RCRA TSD, AST, UST, LUST, NPL, SSF, VCP, SPILL, ERNS, TCEQ Solid Waste Facilities, Brownfield, Dry Cleaner, and IRUST.

5. Habitat Assessment and Waters of the U.S. Determination – Searched literature to determine potential species occurrence. Inspected the site visually to determine existence of suitable habitat existed for identified federally species on site. Determined the presence of waters of the U.S. could potentially exist on site.

6. Cultural Resources Survey – Searched available literature from Texas Archeological Research Laboratory (TARL) and Texas Historical Commission (THC) for local investigations and previously recorded cultural sites on the project area or vicinity.

In addition to the ESI performed on each site, PBS&J also conducted a wetlands delineation survey of the San Jacinto County Peaking Facility site to determine the existence and extent of jurisdictional waters of the U.S. pursuant to Section 404 of the Clean Water Act and Section 10 of the River and Harbors Act. In July 2007, PBS&J performed a study to identify and delineate wetland areas on the project property. Hydrology data was obtained from USGS topographic maps, historical aerial and infrared photographs, FEMA maps, and the San Jacinto County soil Survey. PBS&J reported "no creek or stream crosses the project study area." However, PBS&J did note the presence of a possibly contiguous forested wetland in the northeast corner of the subject property. Regardless, as this potential wetland lies north of the electric power distribution line that separates the northern quarter of the property from the remainder of the site, the wetlands area is not suitable for development, and no construction activities will take place in potential wetlands areas (see Attachment D – Site Plan).

ITEM 2

Vegetation Impacts

The project description does not include a summary of potentially impacted vegetation.

> **Recommendations:** TPWD recommends that clearing of mature, native trees along the route be avoided. Loss of vegetation should be minimized by using site planning and construction techniques designed to avoid and preserve existing trees, shrubs, grasses, and forbs. *For impacts that are unavoidable, TPWD recommends transplanting the existing trees or replacing them at a ratio of 3 saplings for every tree lost.* Whether transplanted or replaced, a survival of 85% should be achieved. TPWD recommends that native plant and forage species that are beneficial to wildlife endemic to the area be used in mitigation and landscaped areas.

RESPONSE TO ITEM 2:

It appears as though TPWD is referring to an electric transmission or pipeline route. This guidance is not applicable to this project. In addition, in that both of the properties in question are either already fully wooded or not conducive to sapling growth, transplanting or re-planting saplings on the sites in question is not a viable option. Nevertheless, ETEC will make a commitment to work with TPWD to develop a solution to address their concerns.

Regarding proposed site for the San Jacinto County Peaking Facility, a description of vegetation in the area is contained within Chapter 8 of the "Environmental Site Investigation, Proposed East Texas Cooperative Power Plant Power Plant Site, San Jacinto County, Texas by PBS&J, June 2007 (DRAFT)." As indicated in Section 8.2. of the PBS&J ESI, the project area is located within the Pineywoods Vegetational Area. PBS&J observed four primary vegetation communities on the tract: upland grassland (pasture grasses, presumably seeded) in the pipeline and electrical transmission line ROW, non-forested emergent wetlands in the pipeline and electrical transmission line ROW, mixed bottomland hardwood forests, and the red maple/willow oak forested wetland. The forested wetland is located in the northeastern corner of the property and will not be disturbed by the construction of the power plant which will be built on the lower two-thirds of the 42-acre site. The non-forested emergent wetlands (about 8.5 acres of the 42-acre site) do not appear to be connected to wet areas off-site. The uplands area is covered in bahiagrass and bermudagrass. The dominant species in the mixed/bottomland forest (the majority of the property) are loblolly pine, water oak, and cherry-bark oak. To a lesser degree, blackgum also inhabited this area. The trees varied in size from 2 to >20 inches in diameter at chest height. The non-forested emergent wetlands includes several rushes, beakrush, umbrella sedge, gaping panicum, spike rush, and arrowhead. The red maple/willow oak forested wetland

is dominated by both species in the center and lower area and dominated by the willow oak around the edges. These trees varied in size from 2 to >20 inches in diameter at chest height.

ITEM 3

Rare Resources

According to records in the Texas Natural Diversity Database (TXNDD), occurrences of the following species have been documented possibly within the proposed Hardin County project area:

Federal and State Listed Endangered
Texas trailing phlox (*Phlox nivalis spp. texensis*)

Species of Concern
White firewheel (*Gaillardia aestivalis var. winkleri*)

Natural Communities and Special Features
Bluejack Oak-Longleaf Pine Series (*Quercus incana-Pinus plaustris series*)

Recommendations: The U.S. Fish and Wildlife Service (FWS) should be contacted for additional species occurrence data, guidance, permitting, survey protocols, and mitigation for federally listed species. Please review the most current TPWD county list, as rare species could be present depending upon habitat availability. These lists are now available on-line at http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species.phtml. If during construction, the project area is found to contain rare species, natural plant communities, or special features, TPWD recommends that precautions be taken to avoid impacts to them.

RESPONSE TO ITEM 3:

Regarding proposed site for the San Jacinto County Peaking Facility, PBS&J conducted a regulatory database search and literature review prior to the May 2007 field effort. This regulatory database review included the Texas Parks and Wildlife Department's (TPWD) Natural Diversity Database (NDD) and U.S. Fish and Wildlife Service's (USFWS) county list of federally listed threatened or endangered species. PBS&J also reviewed aerial photos from 1957 through 2005 prior to conducting a pedestrian survey of the 42-acre site. PBS&J included the

Endangered and Threatened Species assessment within Section 8 of their report on the Phase 1 ESI. They considered the following species in making their assessment of the habitat: bald eagle, red-cockaded woodpecker, piping plover, Louisiana black bear, red wolf, and Louisiana pine snake. Based on the pedestrian survey of the site and an evaluation of the habitat, PBS&J concluded that "the subject property is not expected to support federally listed threatened or endangered species of potential occurrence in San Jacinto County."

ITEM 4

Migratory Birds

America's bird population has declined by over half since the 1960's. Many of these migratory species rely on riparian corridors as feeding, breeding and nesting areas. The Migratory Bird Treaty Act (MBTA) provides for a year round closed season for non-game birds and prohibits the taking of migratory bird nests and eggs, except as permitted by the FWS.

Recommendations: In order to protect migratory birds construction activities should occur outside the March – August migratory bird nesting season of each year the project is authorized and lasting for the life of the project. Construction activities include (but are not limited to) removal of nests or nest structures, tree felling as well as vegetation clearing, trampling, or maintenance.

Please contact the FWS Southwest Regional Office (Region 2) at (505) 248-6879 for further information.

RESPONSE TO ITEM 4:

Regarding proposed site for the San Jacinto County Peaking Facility, ETEC proposes to protect large birds from the dangers of electrocution, by designing and constructing the transmission line serving the project in accordance with the latest practices for raptor protection. The line will be designed for operation at 138 kV and will be totally contained within the site boundaries. High voltage operation ensures ample separation between energized areas and should not pose an electrocution threat. Most of the construction activity will take place in the area bounded on the north by a natural gas transmission line ROW and on the south by a combined gas line and electrical transmission line ROW. With proper erosion control measures, impact upon wildlife on the plant property is expected to be minimal. On site routes will be designed to avoid the wetlands in the northeastern corner of the property.

ITEM 5

Revegetation

> **Recommendations:** TPWD recommends that the East Texas Electric Cooperative of Nacogdoches reseed disturbed soils with a mixture of grasses and forbs native to Hardin and San Jacinto Counties. To enhance native grasses available to wildlife in the project area, TPWD recommends that Bermuda grass be avoided to the extent possible in reseeding efforts, though TPWD understands that slopes may require certain grasses to control erosion.

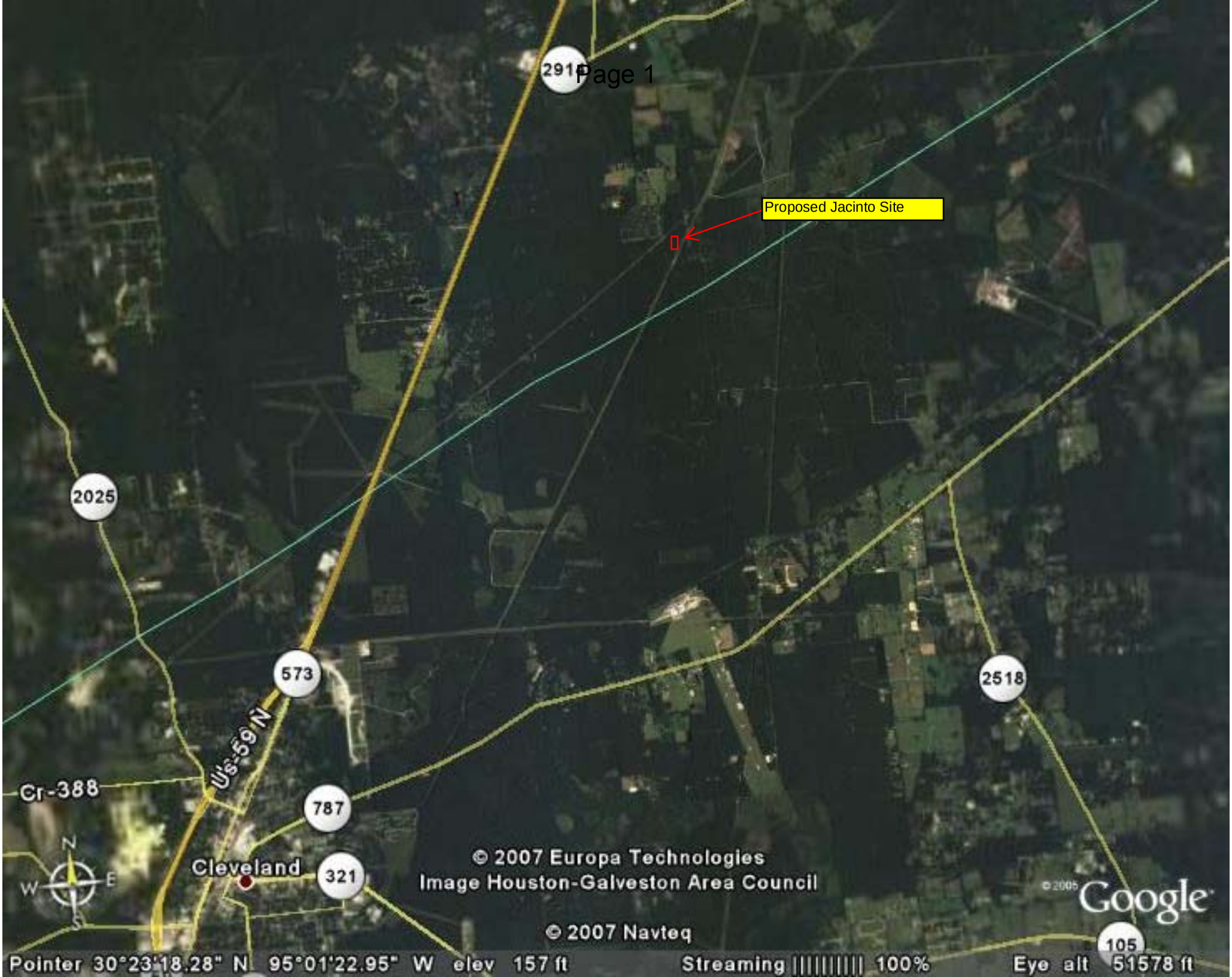
RESPONSE TO ITEM 5:

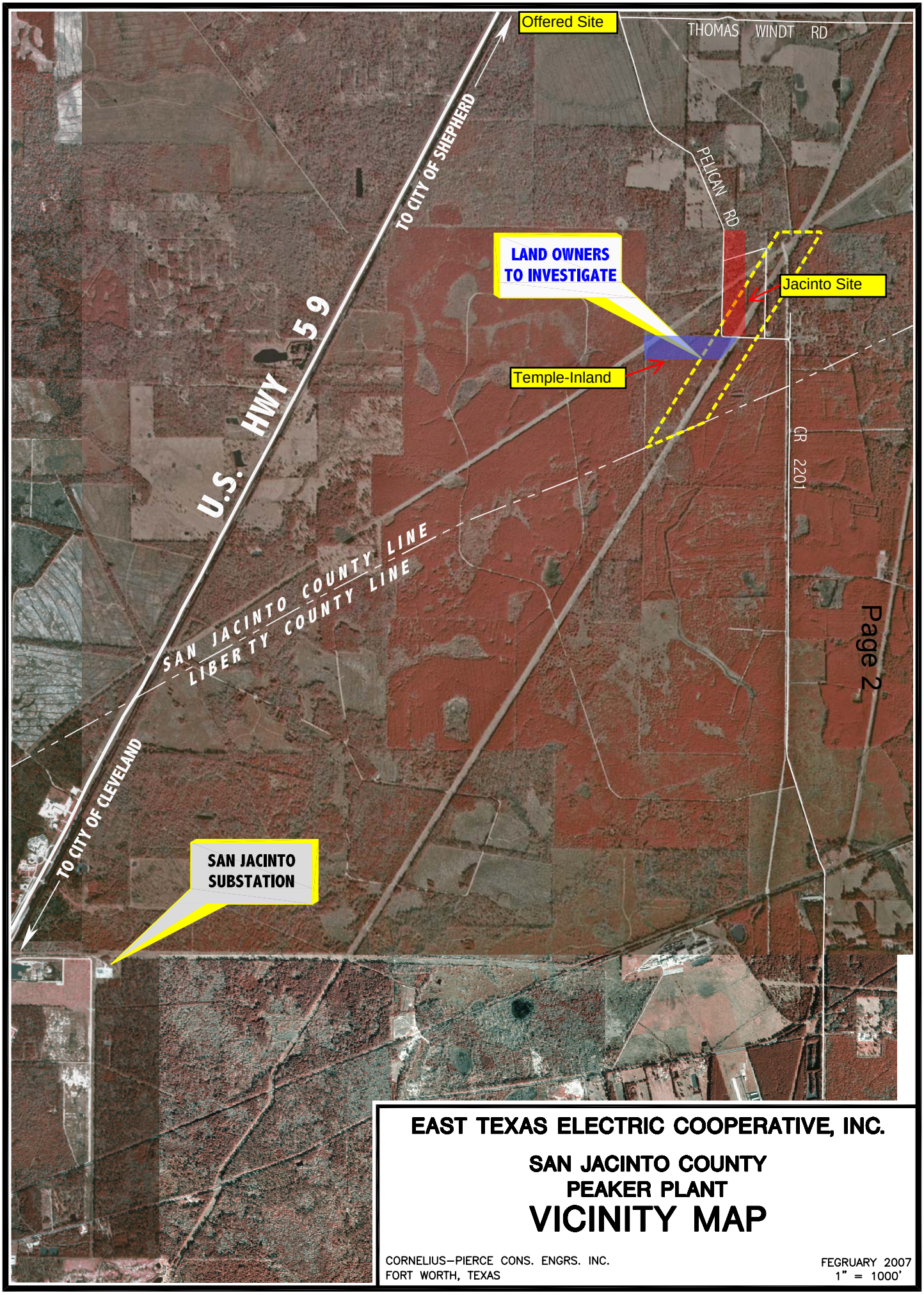
Regarding proposed site for the San Jacinto County Peaking Facility, ETEC will consider reseeding (to the maximum practicable extent consistent with other environmental and structural requirements) the disturbed soils with a mixture of grasses and forbs native to San Jacinto County instead of bermudagrass.

8. Conclusions

The San Jacinto County Peaking Facility presents the best option available to address the capacity and energy needs brought about by the expiration of ETEC's current partial requirements contract with Entergy Gulf States. The fast-reacting, clean burning, natural gas-fired simple cycle combustion turbine-generator units will not only address ETEC's electrical requirements, but will also relieve transmission congestion in southeast Texas. The site selected for the two units lies in an area already disturbed by electric transmission and natural gas pipeline cleared rights of ways and is a significant distance from populated areas. There will be no electrical transmission line impacts outside SJCPF site. Environmental surveys demonstrate that no cultural resources, endangered species, community services or transportation facilities will be impacted by construction on the site, and ETEC is committed to ensuring that on-site impacts of construction activities will be minimized and/or mitigated. Community support for the SJCPF project is strong, and comments received in response to scoping meetings have been adequately addressed. It is thus reasonable to conclude that the SJCPF will have no significant negative environmental or community impacts.

ATTACHMENT A


Proposed Jacinto Site
2910
2025
573
Us-59 N
Cr-388
787
Cleveland
321
2518
105
N
W
E
S
© 2007 Europa Technologies
Image Houston-Galveston Area Council
© 2007 Navteq
© 2005 Google
Pointer 30°23'18.28" N 95°01'22.95" W elev 157 ft
Streaming |||||||||| 100%
Eye alt 51578 ft



EAST TEXAS ELECTRIC COOPERATIVE, INC.

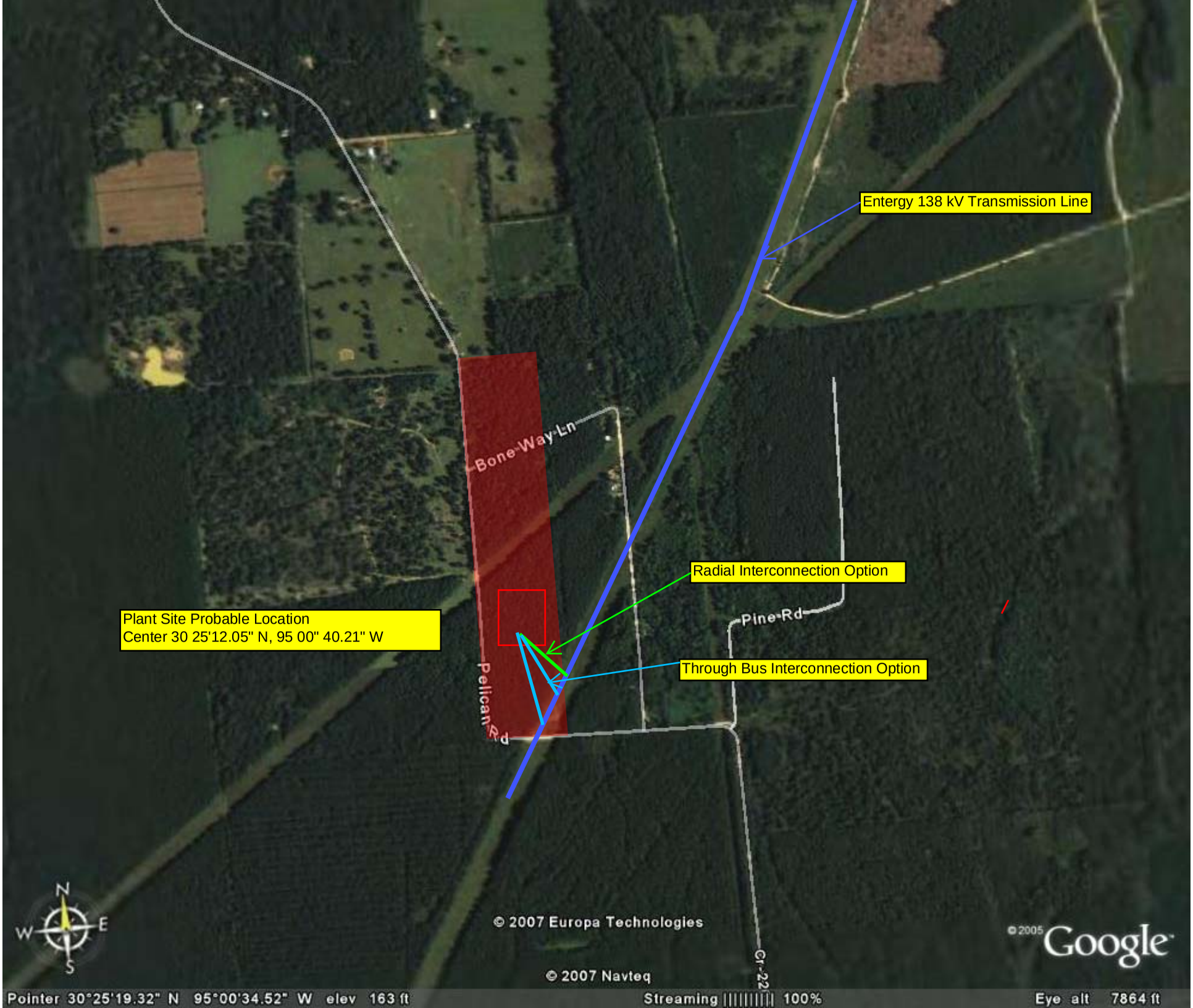
SAN JACINTO COUNTY
PEAKER PLANT

VICINITY MAP

CORNELIUS–PIERCE CONS. ENGRS. INC.
FORT WORTH, TEXAS

FEGRUARY 2007
1" = 1000'

ATTACHMENT B


Entergy 138 kV Transmission Line
Bone Way Ln
Radial Interconnection Option
Plant Site Probable Location
Center 30 25'12.05" N, 95 00" 40.21" W
Pine Rd
Through Bus Interconnection Option
Pelican Rd
Cr-22
© 2007 Europa Technologies
© 2007 Navteq
©2005 Google
N
W
E
S
Pointer 30°25'19.32" N 95°00'34.52" W elev 163 ft
Streaming 100%
Eye alt 7864 ft

ATTACHMENT C

Environmental Site Investigation
Proposed East Texas Cooperative
Power Plant Site
San Jacinto County, Texas

Document No. 070136
PBS&J Job No. 441877

ENVIRONMENTAL SITE INVESTIGATION
PROPOSED EAST TEXAS COOPERATIVE
POWER PLANT SITE
SAN JACINTO COUNTY, TEXAS

Prepared for:

East Texas Electric Cooperative/GDS Associates, Inc.
919 Congress Avenue
Austin, Texas 78701

Prepared by:

PBS&J
6504 Bridge Point Parkway
Suite 200
Austin, Texas 78730

November 2007

Contents

Page

List of Exhibits iii
Acronyms and Abbreviations iv
Executive Summary ES-1

1.0 INTRODUCTION 1
1.1 PURPOSE 1
1.2 SCOPE OF SERVICES 1
1.3 ASSUMPTIONS, LIMITATIONS, AND EXCEPTIONS 2
1.4 SPECIAL TERMS AND CONDITIONS (USER RELIANCE) 4
1.5 REPORT 4

2.0 SITE DESCRIPTION 6
2.1 LOCATION AND LEGAL DESCRIPTION 6
2.2 SURROUNDING AREA GENERAL CHARACTERISTICS 6
2.3 CURRENT USE OF THE SITE 6
2.4 DESCRIPTION OF SITE IMPROVEMENTS 6
2.5 CURRENT USES OF ADJOINING PROPERTIES 6

3.0 USER-PROVIDED INFORMATION 7
3.1 TITLE RECORDS 7
3.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS 7
3.3 SPECIALIZED KNOWLEDGE 7
3.4 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES 7
3.5 OWNER, SITE MANAGER AND OCCUPANT INFORMATION 7
3.6 REASON FOR PERFORMING PHASE I ESA 7
3.7 OTHER USER-PROVIDED DOCUMENTS 7

4.0 RECORDS REVIEW 8
4.1 STANDARD ENVIRONMENTAL RECORDS 8
4.1.1 State and Federal Agency Database Findings 8
4.1.2 Local Regulatory Agency Findings 11
4.2 PHYSICAL SETTING SOURCES 11
4.2.1 Topography 11
4.2.2 Soils 11
4.2.3 Geology 11
4.2.4 Hydrology 12
4.3 HISTORICAL USE INFORMATION 12
4.3.1 Aerial Photographs 12
4.3.2 Fire Insurance Maps 13
4.3.3 City Directories 13

5.0 SITE RECONNAISSANCE 14
5.1 METHODOLOGY AND LIMITING CONDITIONS 14
5.2 HAZARDOUS SUBSTANCE USE/STORAGE 14
5.3 STORAGE TANKS 14
5.4 PETROLEUM PRODUCTS 14

Page

5.5 POLYCHLORINATED BIPHENYLS (PCBs) 15
5.6 UNIDENTIFIED SUBSTANCE CONTAINERS 15
5.7 WASTE GENERATION, STORAGE, AND DISPOSAL 15
5.8 WASTE PITS, PONDS, AND LAGOONS 15
5.9 SUMPS AND DRAINS 15
5.10 SEPTIC SYSTEMS 15
5.11 SURFACE AREAS AND STORMWATER MANAGEMENT SYSTEM 15
5.12 WATER WELLS 15
5.13 OUT-OF-SCOPE ITEMS 15

6.0 INTERVIEWS 16
6.1 INTERVIEW WITH OWNER 16
6.2 INTERVIEW LOCAL GOVERNMENTAL OFFICIALS 16

7.0 FINDINGS 17

8.0 ECOLOGICAL INVESTIGATION 18
8.1 ENDANGERED AND THREATENED SPECIES 18
8.2 WATERS OF THE U.S., INCLUDING WETLANDS 19

9.0 CULTURAL RESOURCES 24

10.0 CONCLUSIONS 25

11.0 DEVIATIONS 26

12.0 ADDITIONAL SERVICES 27

13.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS 28

14.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS 29

15.0 REFERENCES 30

Appendix: Resumés of Professionals

Exhibits

1 General Location Map
2 Site Map
3 Regulatory Agency Database Report
4 Topographic Map
5 Soils Map
6 Geology Map
7 Flood Insurance Rate Map
8 Historic Aerial Photographs
9 Site Photographs
10 Cultural Resources Survey Report

Acronyms and Abbreviations

ACM	asbestos containing materials
AST	aboveground storage tanks
ASTM	American Society for Testing and Materials
BEG	Bureau of Economic Geology
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System Database
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
ESEI	EcoSystems Environmental, Inc.
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
LUST	leaking underground storage tank
NFRAP	no further remedial action planned
NPL	National Priority List
PR	Project Resources Inc.
RCRIS	Resource Conservation and Recovery Information System
SCS	Soil Conservation Service
TAHPR	Texas Asbestos Health Protection Rules
TCEQ	Texas Commission on Environmental Quality
TSD	treatment, storage, or disposal
TXLF	Texas Landfill
USGS	U.S. Geological Survey
UST	underground storage tanks
VCP	Voluntary Cleanup Program

Executive Summary

This document presents the results of the Environmental Site Investigation conducted on the proposed East Texas Electric Cooperative, Inc. (ETEC) power plant located in San Jacinto County, Texas.

The subject site is located approximately two miles east of Westcott, Texas in San Jacinto County, Texas, and 0.5 mile north of the San Jacinto/Liberty County line. This investigation includes a Phase I Environmental Site Assessment (ESA), which was conducted in general accordance with the scope and limitations of the American Society for Testing and Materials (ASTM) under the designation E-1527-05. The purpose of the Phase I ESA was to identify, to the extent feasible, recognized environmental conditions as defined in the ASTM standard, and consisting of a site visit, aerial photographic review, and regulatory agency database review. The investigation also included ecological and cultural resources assessments.

The site consists of approximately 42.25 acres of undeveloped wooded land. The site is currently owned by Burl Thomas, Justice of the Peace No. 5 for Liberty County, Texas.

A regulatory agency database information search was conducted for the subject and surrounding properties. According to the regulatory agency database report, no records registered with either state or federal agencies were found within the applicable radius of the subject property.

Aerial photographs were reviewed to evaluate historical usage of the subject property and the surrounding areas. The photographs depict the site as it appeared in 1957, 1976, 1988, 1995, and 2005. The photographs depict the subject property as undeveloped property from 1957 to 2005. Surrounding land uses were similar except for agricultural (under cultivation) to the south from 1957 to 1976. Review of the five historical aerial photographs did not reveal evidence of environmental concerns associated with the subject property and surrounding adjacent properties.

The visual inspection, conducted on May 16, 2007, was intended to identify indicators of recognized environmental conditions. The visual inspection included a pedestrian survey of the subject property and evaluation of the land use of the surrounding properties. No apparent environmental concerns were observed in and around each of these areas. No evidence of hazardous materials was noted on the subject property or on the surrounding properties at the time of the site visit.

The results of the Phase I ESA indicate no evidence of current or prior hazardous material storage, usage, or spillage that may pose an environmental concern to the subject property. Therefore, it is the opinion of PBS&J that no further investigation is warranted.

Based on the pedestrian survey of the site and an evaluation of the habitat, the subject property is not expected to support federally listed threatened or endangered species of potential occurrence in San Jacinto County.

No streams or channels were identified within the subject property, however, both emergent and forested wetlands were observed. Although the forested wetlands on the northern part of the property extend into adjacent lands, there were no clear surface connections to waters of the U.S. for any of the wetlands (forested or emergent). NWI maps indicate that this forested wetland is not connected to waters of the U.S. However, without access to the adjacent properties, it is not possible to determine whether there is a hydrologic connection. Consultations with the USACE would be necessary to determine whether the forested wetland was considered jurisdictional (i.e., not isolated). It is possible that the USACE would accept the conclusion that this wetland was isolated, based on NWI maps, aerial photo interpretation and limited groundtruthing.

No cultural resources were located during PBS&J's investigation of the project area. Based on the results of the pedestrian survey and shovel testing and the overall low potential of cultural sites in this location due to the reasons presented, it is unlikely that any significant undiscovered cultural resources are present in the project area. Cultural resource clearance is recommended for this project.

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of the Phase I ESA was to identify existing or potential recognized environmental conditions (RECs) affecting the site that (1) constitute or result in a material violation or a potential material violation of any applicable environmental law; (2) impose any material constraints on the operation of the site or require a material change in the use thereof; (3) require clean-up, remedial action, or other response with respect to hazardous substances or petroleum products on or affecting the site under any applicable environmental law; (4) may affect the value of the site; and (5) may require specific actions to be performed with regard to such conditions and circumstances.

The Phase I ESA was conducted in general accordance with the "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (ASTM Standard Practice), published by the American Society for Testing and Materials (ASTM) under the designation "E-1527-05" and U.S. EPA "All Appropriate Inquiries" (40 CFR Part 312). As stated in the ASTM Standard Practice, the goal of this assessment was to identify, to the extent feasible, "recognized environmental conditions" associated with the subject property. The term "recognized environmental conditions" is defined in the ASTM standard as the presence or likely presence of hazardous substances or petroleum products on the subject site under conditions which indicate an existing release, a past release, or a material threat of a future release of those substances or products into structures on the subject site, or into the subsurface soils, groundwater, or surface water of the subject site. The term includes hazardous substances or petroleum products even under conditions in compliance with laws but is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment, or that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies.

1.2 SCOPE OF SERVICES

PBS&J was requested by East Texas Electric Cooperative, Inc. (ETEC) to conduct an Environmental Site Investigation of the proposed 42.25-acre power plant tract in southeastern San Jacinto County, Texas. The subject property is located approximately two miles east of Westcott, Texas in San Jacinto County, Texas, and 0.5 mile north of the San Jacinto/Liberty County line. The undeveloped site is situated on the northeast side of Pelican Road (Exhibit 1).

The findings and recommendations presented in this Environmental Site Investigation Report are based on the following scope of work:

A. **Site Visit** – A visual inspection of the site was conducted to determine the existence of conditions of environmental concern, including: underground and aboveground storage tanks, storage of chemicals, and any irregularities of the site's soil or vegetation, indicating the possible presence of hazardous materials or petroleum products. The inspection was documented by taking

photographs of the site. A visual inspection regarding the existing land use of the adjacent properties was also conducted.

B. **Setting** – PBS&J reviewed existing, available information to characterize the physical setting and geology of the site, including a description of surface elevation, surface drainage, surface runoff and run-on, and other identifying physical features.

C. **Site History** – PBS&J traced the site history, including: an examination of historic aerial photographs; interviews with persons familiar with the site; and examination of other historical documents, as available.

D. **Regulatory Agency Review** – PBS&J reviewed and evaluated available public information relating to the site including: the Comprehensive Environmental Response Compensation, and Liability Information System Database (CERCLIS), the Resource Conservation and Recovery Act Generators List (RCRA-G), RCRA Violation/Corrective Actions List (CORRACT), RCRA Treatment, Storage, or Disposal Facilities List (RCRA TSD), Registered Aboveground Storage Tank Listing (AST), Underground Storage Tank Listings (UST), Leaking Underground Storage Tank Listings (LUST), National Priority List (NPL), Texas State Superfund List (SSF), Texas Voluntary Cleanup Program List (VCP), TCEQ Spills Database (SPILL), Emergency Response Notification System (ERNS), TCEQ Solid Waste Facilities (LF), Brownfield (BRNDFD), Dry Cleaner (DRYC), and Indian Reservation Underground Storage Tanks (IRUST).

E. **Habitat Assessment and Waters of the U.S. Determination –** PBS&J performed a literature search to determine potential species occurrence. A visual inspection was conducted by a PBS&J ecologist to determine whether suitable habitat for the identified federally protected species occurs on the site. PBS&J performed a site reconnaissance to determine whether waters of the U.S., which are jurisdictional under Section 404 of the Clean Water Act, occur on site. The determination included identifying the jurisdictional limits of the waters of the U.S., which included the determination of the presence or absence of wetlands.

F. **Cultural Resources Survey –** PBS&J initially conducted a records/literature search of available information from the Texas Archeological Research Laboratory (TARL) and the Texas Historical Commission (THC) for local investigations and previously recorded cultural resource sites in the project area or vicinity. PBS&J then performed a 100% survey of the site. A draft report will be submitted to the THC after ETEC/GDS Associates, Inc., have the reviewed the report.

PBS&J has attempted to exercise reasonable efforts to accomplish the required tasks, as we understand them, as permitted by the project schedule, and as contained within the scope of work. In addition, PBS&J has employed professional standards applicable to similar work within the industry today. There is no assurance that techniques employed in these studies will necessarily disclose all contamination or other environmental conditions at the subject property.

1.3 ASSUMPTIONS, LIMITATIONS, AND EXCEPTIONS

PBS&J has prepared this Phase I ESA component of this investigation using reasonable efforts to identify RECs associated with hazardous substances or petroleum products at the site. Findings within this report are based on information collected from observations made on the days of the site reconnaissance and

from reasonably ascertainable information obtained from certain public agencies and other referenced sources.

The ASTM Standard Practice E 1527-05 recognizes inherent limitations for ESAs that apply to this report, including:

- Uncertainty Not Eliminated – No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a site.
- Not Exhaustive – An ESA is not an exhaustive investigation.
- Past Uses of the Site – Review of standard historical sources at less than 5-year intervals is not required by the ASTM Standard.

Users of this report may refer to ASTM Standard Practice E 1527-05 for further information regarding these and other limitations.

This report is not definitive and should not be assumed to be a complete or specific definition of all conditions above or below grade. Current subsurface conditions may differ from the conditions implied by surface observations or historical sources and can be most reliably evaluated through intrusive techniques that were beyond the scope of this report. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other construction purposes. PBS&J makes no representation or warranty that the past or current operations at the site are, or have been, in compliance with all applicable federal, state, and local laws, regulations, and codes. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated. Regardless of the findings stated in this report, PBS&J is not responsible for consequences or conditions arising from facts that were not fully disclosed to PBS&J during the assessment.

An independent data research company provided the government agency database referenced in this report. Information on surrounding area properties was requested for approximate minimum search distances and was assumed to be correct and complete unless obviously contradicted by PBS&J's observations or other credible referenced sources reviewed during the assessment.

Reasonable efforts were made to identify evidence of aboveground and underground storage tanks and ancillary equipment on the site during the assessment. "Reasonable efforts" were limited to observation of accessible areas, review of referenced public records, and interviews. These methods may not identify subsurface equipment or evidence hidden from view by things such as, but not limited to, dense vegetation, paving, construction activities, stored materials, and landscaping.

Any estimates of costs or quantities in this report are approximations based on findings that are limited by the scope of the assessment, schedule demands, cost constraints, accessibility limitations, and other factors associated with performing an ESA. Subsequent determinations of costs or quantities may vary from the estimates in this report.

Other assumptions, limitations, and exceptions that are specific to the scope of this report may be found in corresponding sections.

1.4 SPECIAL TERMS AND CONDITIONS (USER RELIANCE)

This report is for the use and benefit of, and may be relied upon by ETEC/GDS Associates, Inc, its employees and affiliates, and its counsel. Third party reliance on this report is not authorized without the expressed written consent of ETEC/GDS Associates, Inc., and PBS&J. Any third party agrees by accepting this report that any use or reliance on this report shall be limited by the exceptions and limitations in this report, and with the acknowledgment that actual site conditions may change with time, and that hidden conditions may exist at the project site that were not discovered within the authorized scope of the assessment.

PBS&J makes no other representation to any third party except that it has used the degree of care and skill ordinarily exercised by environmental consultants in the preparation of the report and in the assembling of data and information related thereto. No other warranties are made to any third party, either expressed or implied.

1.5 REPORT

PBS&J prepared this report to document the findings and conclusions of this Phase I ESA conducted at the site. The remaining sections of this report include the following:

- Section 2.0 provides a description of the site, its improvements, and land use on the adjacent properties.
- Section 3.0 provides a synopsis of the user-provided information.
- Section 4.0 discusses the results of the records review, including a summary of environmental databases, physical setting and historical use information.
- Section 5.0 discusses the results of PBS&J's site reconnaissance.
- Section 6.0 provides a summary of interviews conducted by PBS&J related to the site.
- Section 7.0 provides a summary of PBS&J's findings related to RECs at the site.
- Section 8.0 provides the results of PBS&J's ecological investigation.
- Section 9.0 provides the results of PBS&J's cultural resources assessment.
- Section 10.0 provides PBS&J's conclusions.
- Section 11.0 if appropriate, provides any deviations.
- Section 12.0 if appropriate, provides a description of PBS&J's additional services to the assessment.
- Section 13.0 provides the signature of PBS&J's environmental professionals that prepared this assessment.

- Section 14.0 provides qualifications of PBS&J's environmental professionals that prepared the assessment.
- Section 15.0 lists references for the assessment.

2.0 SITE DESCRIPTION

2.1 LOCATION AND LEGAL DESCRIPTION

The subject site is located approximately two miles east of Westcott, Texas, in San Jacinto County, Texas, and 0.5 mile north of the San Jacinto/Liberty County line (Exhibit 1). The undeveloped site is approximately 42.25 acres of pine and hardwood timber land. The site is currently owned by Burl Thomas, Justice of the Peace No. 5 for Liberty County, Texas. Exhibit 2 presents the existing site plan for the subject property.

2.2 SURROUNDING AREA GENERAL CHARACTERISTICS

The surrounding properties are characterized predominately as undeveloped with isolated rural homesteads.

2.3 CURRENT USE OF THE SITE

The subject property is currently used for beef cattle and timber production.

2.4 DESCRIPTION OF SITE IMPROVEMENTS

The subject property site improvements are limited to perimeter barb-wire fencing.

2.5 CURRENT USES OF ADJOINING PROPERTIES

Land uses of the adjoining properties located to the west, east, and south are primarily undeveloped. The adjoining property to the north is used for pastureland. None of the adjoining properties appear to present an environmental concern to the subject property.

3.0 USER-PROVIDED INFORMATION

3.1 TITLE RECORDS

Title records of the subject property were not provided.

3.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

Database information regarding known environmental liens for the subject property was provided by TelALL Corporation of Austin, Texas. No recorded environmental liens were found by TelALL. Information regarding environmental activity and use limitations was not provided.

3.3 SPECIALIZED KNOWLEDGE

No specialized knowledge regarding existing RECs associated with the subject property was provided to PBS&J.

3.4 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

No information regarding valuation reduction for environmental issues associated with the subject property was provided to PBS&J.

3.5 OWNER, SITE MANAGER AND OCCUPANT INFORMATION

Burl Thomas is the current owner of the subject property.

3.6 REASON FOR PERFORMING PHASE I ESA

The Phase I ESA was performed to provide due diligence related to property transaction for the proposed ETEC power plant.

3.7 OTHER USER-PROVIDED DOCUMENTS

No other user-provided documents were available.

4.0 RECORDS REVIEW

4.1 STANDARD ENVIRONMENTAL RECORDS

PBS&J retained the services of TelALL Corporation of Austin, Texas, to conduct a regulatory agency database information search. The report prepared by TelALL is included in Exhibit 3. The scope of the regulatory information search included a review and evaluation of available public information relating to the site as described in Section 1.0.

According to the regulatory agency database report, no records registered with a state or federal agencies were found within the applicable radius of the subject property. A map of the property and the surrounding area within a 1-mile radius is included in the regulatory agency database report. The following summarizes the results of the regulatory agency database search.

4.1.1 State and Federal Agency Database Findings

Registered Storage Tanks

The aboveground storage tank (AST) and underground storage tank databases (UST) are maintained by the Texas Commission on Environmental Quality (TCEQ) to track permitted petroleum storage tank sites. The databases were searched for facilities located within a ¼-mile radius of the project area. According to the regulatory agency database report, no AST or UST permitted facilities were found.

Leaking Underground Storage Tanks

The leaking underground storage tank database (LUST) is a list maintained by TCEQ of facilities where a known UST release has occurred. The database was searched for facilities located within a ½ mile radius of the subject property. According to the regulatory agency database report, no facilities with a leaking underground storage tank were found.

Resource Conservation and Recovery Act – Generators

Under the Resource Conservation and Recovery Act (RCRA), generators and transporters of hazardous waste are required to provide information concerning their activities to state agencies and the EPA. The RCRA-G list is a subset of the Resource Conservation and Recovery Information System (RCRIS) database and tracks facilities that are registered generators or transporters of hazardous waste. The database was searched for facilities that generate or transport hazardous waste within a ¼-mile radius of the project area. According to the regulatory agency database report, no RCRA generators were found.

RCRA TSD Database

The RCRA treatment, storage, or disposal (TSD) database is also a subset of RCRIS. The database tracks facilities that treat, store, or dispose of hazardous waste which are required to provide information to state agencies and EPA. The database was searched for facilities that treat, store, or dispose of hazardous material or waste located within a 1-mile radius of the project area. According to the regulatory agency database report, no RCRA TSD sites were found.

CERCLIS

The EPA Comprehensive Environmental Response and Compensation Liabilities Information System (CERCLIS) is the official repository for site and nonsite specific Superfund data in support of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that contains information on hazardous waste site assessment and remediation from 1983 to the present. CERCLIS information is used to report official Superfund accomplishments to Congress and the public, assist EPA Regional and Headquarters managers in evaluating the status and progress of site cleanup actions, and communicate planned activities and budgets. The CERCLIS database was searched for facilities located within a ½-mile radius of the subject property. According to the regulatory agency database report, no CERCLIS sites were found.

National Priority Listing

The EPA National Priority Listing is a priority subset of the CERCLIS list and is a list of priority facilities that the EPA has determined to pose a threat to human health and/or the environment and where remedial action is required. The EPA National Priority Listing was searched for facilities located within a 1-mile radius of the subject property. According to the regulatory agency database report, no NPL sites were found.

State Superfund Sites

The State Superfund listing is a list of sites that the State of Texas has identified for investigation or remediation. The State Superfund listing was searched for sites located within a 1-mile radius of the subject property. No State Superfund sites were found.

Texas Voluntary Cleanup Program

The Texas Voluntary Cleanup Program (VCP) was established in 1995 to provide administrative, technical, and legal incentives to encourage the cleanup of contaminated sites in Texas. The Texas Voluntary Cleanup Program database was searched for VCP sites within a ½-mile radius of the project area. No VCP sites were found.

TCEQ Spills Database

The TCEQ Spills database (SPILL) includes cases where emergency response was needed for cleanup of toxic substances. The TCEQ Spills database was searched for spill sites within a ¼-mile radius of the subject property. According to the regulatory agency database report, no spill sites were found.

Emergency Response Notification System

The Emergency Response Notification System (ERNS) supports the release notification requirements of CERCLA and serves as a mechanism to document and verify incident location information as initially reported. The ERNS database was searched for responses that occurred within a ¼-mile radius of the project area. According to the regulatory agency database report, no ERNS sites were found.

Landfills

The TCEQ requires municipalities and counties to report known active and inactive landfills. The LF database is a listing of solid waste facilities registered and tracked by TCEQ Solid Waste Division. The database was searched for facilities within a 1-mile radius of the project area. According to the regulatory agency database report, no landfill sites were found.

Brownfield

Brownfields (BRNFD) are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The BRNFD database was searched for facilities within a ½-mile radius of the project area. According to the regulatory agency database report, no BRNFD sites were found.

Dry Cleaner

House Bill 1368 requires all dry cleaning drop stations and facilities in Texas to register with the TCEQ and implement new performance standards at their facilities as appropriate. According to the regulatory database report, no dry cleaner sites were found.

Indian Reservation Underground Storage Tanks

The AAI rule has requested that Indian Reservation Underground Storage Tanks (IRUST) be included. Permitted USTs on Indian Land are tracked and maintained by the EPA. The IRUST database was searched for facilities within a ¼-mile radius of the project area. According to the database, no IRUST sites were found.

4.1.2 Local Regulatory Agency Findings

The Shepherd, Texas, Volunteer Fire Department was contacted regarding emergency (hazmat) incident reports in the immediate site vicinity, including the subject site. According to fire Chief Cindy Nicholas, no incidents have been reported for the subject property. This topic is further referenced in Section 6.2 of this report. No other local regulatory agency findings were available for the subject property.

4.2 PHYSICAL SETTING SOURCES

4.2.1 Topography

The Westcott, Texas, Quadrangle, 7.5-minute series, Topographic Maps (USGS, 1997) (Exhibit 4) was reviewed for relevant historical and physical characteristics relating to the subject property and surrounding tracts. The topographic map indicates the property is located within an undeveloped wooded area approximately 1,200 feet northwest of the intersection of Pelican Road and Bone Way Lane. The subject property is also located about 2,000 feet north of the San Jacinto/Liberty County line. Two pipelines are visible crossing through the center and southeast portions of the subject property. Mapping shows no structures on the property.

The subject property is located on very gently sloping terrain, which drains primarily to the south and east towards an unnamed tributary of Marsh Creek. Surface elevations at the site range from a high of approximately 174 feet above mean sea level (msl) at the northwest corner to a low of approximately 162 feet msl near the southeast corner of the property.

4.2.2 Soils

Examination of the Soil Survey of Polk and San Jacinto Counties, Texas, Sheet 90, (Soil Conservation Service (SCS), (1983) (Exhibit 5) reveals the site is situated predominantly in the Kirbyville fine sandy loam (KvA), 0 to 2% slopes. This soil occupies nearly level to gently sloping broad flats that typically contain a few low (pimple) mounds. The surface layer is dark grayish brown to light yellowish brown fine sandy loam about 12 inches thick. The next layer is yellowish brown to brownish yellow sandy clay loam about 72 inches thick. The soil is very acidic throughout. This soil is somewhat poorly drained, and permeability is moderate. A seasonal water table is at a depth of 1.5 to 2.5 feet of the surface during the winter. The erosion hazard is slight. This soil is well suited to pine and hardwood trees, and moderately suited to most urban uses. Wetness is the main limitation.

4.2.3 Geology

Examination of the “Geologic Atlas of Texas, Beaumont Sheet” (Bureau of Economic Geology [BEG], 1992) presented in Exhibit 6, indicates that the subject property is situated primarily on an outcrop of Quaternary-age Lissie Formation (Ql). Lissie Formation deposits consist of clay, silt, sand, and minor amounts of gravel. The surface is fairly flat and featureless except for numerous rounded shallow

depressions and pimple mounds. Thickness of the Lissie Formation is about 200 feet. The Willis Formation (clay, silt, sand, and gravel) occurs beneath and is about 100 feet thick. Mapping shows no geologic faulting in the subject property vicinity.

4.2.4 Hydrology

The nearest surface drainage feature is an unnamed tributary that eventually drains further south into Marsh Creek. This tributary is located approximately 2,000 feet south of the subject property.

A review of the Flood Insurance Rate Map (FIRM) for San Jacinto County, Texas (FEMA, 1977) indicates the subject property is situated in Other Areas – Zone X, or areas determined to be outside 500-year floodplain. A copy of the flood map has been included in Exhibit 7.

4.3 HISTORICAL USE INFORMATION

4.3.1 Aerial Photographs

PBS&J obtained five historic aerial photographs of the subject property and surrounding areas. The photographs depict the site as it appeared in 1957, 1976, 1988, 1995, and 2005. The photographs are presented in Exhibits 8-1, 8-2, 8-3, 8-4, and 8-5, respectively. Review of the historic aerial photographs enabled PBS&J to examine the historical usage of the subject property and surrounding areas.

Exhibit 8-1 (1957) indicates the subject property is primarily undeveloped forest land. Two cleared lanes for pipeline right of ways are visible through the center and southeast portions of the property. An unimproved road (Pelican Road) is visible along the west and south sides of the property. Another unimproved road (Bone Way Lane) crosses through the northern part of the property. Near the center of the property is a circular shaped clearing with no visible structures. Further research indicated this circular area was likely cleared for previous petroleum exploration. One dry hole was reportedly located in this cleared area by Texas Railroad Commission records (RRC, 2007). The adjoining properties surrounding the project site to the north, west and east are primarily undeveloped forest and/or pastureland. The adjoining properties to the south appear to be agricultural. The scattered white dots located within the cultivated areas to the south are characteristic pimple mounds, a naturally-occurring geologic feature common in the Lissie Formation. No aerial photos were available after 1957 until 1976.

Exhibit 8-2 (1976) indicates the subject property is densely wooded. The cleared, former dry hole location is overgrown and no longer visible. The surrounding adjacent properties to the north, west and south remain relatively unchanged from the previous photograph. The adjacent property to the east is also densely wooded. Open pastureland is visible toward the northwest.

Exhibit 8-3 (1988) indicates the southern half of the subject property has been cleared of trees. The surrounding adjacent properties to the north and west remain forested while the properties to the east and

southwest have been clear cut. A narrow, unimproved dirt road is visible along the east side of the property.

Exhibit 8-4 (1995) indicates the subject property is once more densely wooded. The surrounding adjacent properties remain relatively unchanged from the previous photograph except for the property to the south. This previously cultivated property appears to have dense vegetation.

Exhibit 8-5 (2005) indicates the subject property remains essentially unchanged from the previous photograph. The surrounding adjacent properties remain relatively unchanged from the previous photograph except for selected clearing of forest to the west.

Review of the five historical aerial photographs by PBS&J did not reveal evidence of environmental concerns associated with the subject property and surrounding adjacent properties.

4.3.2 Fire Insurance Maps

Fire insurance maps are not available for this area.

4.3.3 City Directories

City directories are not available for this area.

5.0 SITE RECONNAISSANCE

5.1 METHODOLOGY AND LIMITING CONDITIONS

PBS&J conducted a visual inspection of the subject property for evidence of conditions causing environmental concern, such as stored hazardous materials or oils, drums, aboveground and underground storage tanks, debris, pits, suspicious odors, discolored soils or surfaces and stressed vegetation. The site inspection was intended to identify indicators of areas of potential hazardous waste liability. PBS&J conducted an unescorted site inspection of the subject property on May 16, 2007. Site photographs taken at the time of the inspection are presented in Exhibit 9.

The subject property was accessed from Pelican Road which bounds the west and south sides (Site Photograph 1). Kinder Morgan Pipeline, Inc., operates a natural gas pipeline which crosses through the far southeastern corner of the property (Site Photographs 2–3). Tennessee Gas Pipeline Company operates three natural gas pipelines that are located within the easement that crosses through the center of the property (Site Photographs 4–5). Bone Way Lane, located across the northern portion of the property, is overgrown along an existing overhead electrical distribution line (Site Photograph 6). Most of the subject property is wooded with very few cleared areas (Site Photographs 7–9). A small stock pond (dug by the owner) for watering cattle is located in the center of the property near the former oil exploration (dry hole) area (Site Photograph 10). No existing oil field infrastructure was visible in the former dry hole area. Immediately north of the Tennessee Gas Pipeline easement near the center of the property are several (5-7) partially burned truck tires (Site Photographs 11–12). However, in its present condition this tire debris does not appear to pose an environmental concern for the site. Site photographs 13 and 14 present typical wooded areas within the subject property.

No evidence of hazardous materials was noted on the subject property or on the surrounding properties at the time of the site visit. PBS&J personnel checked the immediate area and traversed along the subject property boundaries and across open ground. No evidence of RECs was noted at the time of the site visit.

5.2 HAZARDOUS SUBSTANCE USE/STORAGE

No hazardous material is used, generated, or stored at the subject property.

5.3 STORAGE TANKS

The subject property had no apparent aboveground or underground storage tanks.

5.4 PETROLEUM PRODUCTS

The subject property had no apparent storage of petroleum products.

5.5 POLYCHLORINATED BIPHENYLS (PCBs)

The subject property had no apparent pole-mounted transformers which contain PCBs.

5.6 UNIDENTIFIED SUBSTANCE CONTAINERS

The subject property had no apparent unidentified substance containers.

5.7 WASTE GENERATION, STORAGE, AND DISPOSAL

As previously discussed, the subject property had some discarded truck tires located near the center immediately north of an existing natural gas pipeline easement (Tennessee Gas Pipeline Company).

5.8 WASTE PITS, PONDS, AND LAGOONS

The subject property has no apparent waste pits or lagoons. As previously discussed, a small stock pond currently used for watering cattle is located near the center of the property.

5.9 SUMPS AND DRAINS

The subject property has no apparent sumps and drains.

5.10 SEPTIC SYSTEMS

The subject property has no apparent septic systems.

5.11 SURFACE AREAS AND STORMWATER MANAGEMENT SYSTEM

The subject property has no apparent stormwater management system.

5.12 WATER WELLS

The subject property has no apparent water wells. In addition, no water wells recorded with the Texas Water Development Board (TWDB) were found in the immediate site vicinity (TWDB, 2007).

5.13 OUT-OF-SCOPE ITEMS

As referenced previously in Section 4.2.4, a review of the FIRM for San Jacinto County, Texas (FEMA, 1977) indicates the subject property is situated in Zone X or areas determined to be outside the 500-year floodplain. No other out of scope items was included in this assessment.

6.0 INTERVIEWS

6.1 INTERVIEW WITH OWNER

PBS&J interviewed Burl Thomas, property owner, regarding the historical uses of the subject property. According to Mr. Thomas, the subject property was purchased from Wanda King in 1998. Mr. Thomas stated that Ms. King is the daughter of Overton Havard, the previous owner before Ms. King. He also stated that Ms. King leased the property to him for raising beef cattle about seven years before acquisition. The small stock pond was dug by Mr. Thomas using a tractor with a front end loader. Mr. Thomas stated that the discarded truck tires were present when he bought the property. Mr. Thomas also stated that to the best of his knowledge, there have never been any spills of hazardous substances or petroleum products on the property, and he has no knowledge of any environmental concerns associated with the subject property.

6.2 INTERVIEW LOCAL GOVERNMENTAL OFFICIALS

PBS&J interviewed fire Chief Cindy Nicholas with the Shepherd, Texas, Volunteer Fire Department regarding emergency (hazmat) incident reports in the immediate site vicinity, including the subject site. According to Ms. Nicholas, no incidents have been reported for the subject property.

7.0 FINDINGS

Based upon aerial photography review, regulatory database search, an on-site visual inspection, and interview with the landowner, it appears the subject property has remained undeveloped land periodically used to raise cattle or grow timber. The results of the Phase I ESA indicate no evidence of current or prior hazardous material storage, usage, or spillage that may pose an environmental concern to the subject property. The assessment of the subject property did not reveal any evidence of environmental concerns related to the storage or disposal of hazardous materials.

8.0 ECOLOGICAL INVESTIGATION

8.1 ENDANGERED AND THREATENED SPECIES

A literature review was conducted by PBS&J prior to conducting field surveys to determine potential habitat for federally listed endangered and threatened species. A pedestrian survey of the site to evaluate the habitat on the ETEC site was performed by a PBS&J ecologist on May 16, 2007.

Methods

A regulatory agency database search and literature review was conducted for San Jacinto and adjacent Liberty counties prior to the field effort. Occurrence data was provided by the Texas Parks and Wildlife Service (TPWD) Natural Diversity Database (NDD). The San Jacinto County lists of endangered and threatened species of potential occurrence, which are provided on the internet by the TPWD and U.S. Fish and Wildlife Service (FWS), were also reviewed. Aerial photographs were reviewed to assist in the evaluation of habitat and prepare maps for use during the pedestrian survey.

The pedestrian survey of the ETEC site consisted of walking the perimeter of the site, pipeline and electrical distribution rights-of-way (ROW) on the site and random, north-to-south transects through the woodland blocks between the ROWs to assess potential habitat for endangered and threatened species (Site Photographs 1–14).

Results

The NDD data indicated no documented occurrences of federally listed endangered or threatened species on the Westcott, Texas 7.5-minute topographic quadrangle map, which includes the ETEC site. The FWS San Jacinto County list identified two federally listed species, the threatened bald eagle (*Haliaeetus leucocephalus*) and red-cockaded woodpecker (*Picoides borealis*). The TPWD annotated county list of rare species for San Jacinto County includes the bald eagle, red-cockaded woodpecker, as well as the following additional federally listed species: piping plover (*Charadrius melodus*), Louisiana black bear (*Ursus americanus luteolus*), red wolf (*Canis rufus*), and Louisiana pine snake (*Pituophus ruthveni*). Of these species, only the bald eagle, red-cockaded woodpecker, and Louisiana pine snake are potential resident species. The red wolf is considered to be extirpated in Texas and the remaining species, would only occur as either seasonal migrants or transitory vagrants. As a result of the pedestrian survey of the ETEC site and evaluation of the habitat, PBS&J is of the opinion that the site is not expected to support the federally listed species of potential occurrence in San Jacinto County.

The bald eagle is currently state-listed as threatened and federally listed as threatened, but has been proposed for delisting. The bald eagle is a regular migrant and winter resident in the eastern half of the state, and is usually found in association with large bodies of water (Lockwood and Freeman, 2004). In Texas, wintering and migrating bald eagles frequently stop over along the shores of reservoirs and large

rivers, which provide the eagle with the bulk of its dietary requirements. The bald eagle is currently known to nest in at least 35 counties of Texas, including San Jacinto County (FWS, 1995; Polasek, 2000). Wintering, migrating, and nesting bald eagles may occur in the study area, particularly in the vicinity of Lake Livingston. A nesting bald eagle territory is reported from Lake Livingston. Although there are some suitable large trees, primarily scattered large pines that could provide roosting and nesting substrate for the bald eagle, no evidence of the species was identified during the pedestrian survey. The nearest large waterbodies are Lake Livingston, which is over 12 miles to the north, and the Trinity River, approximately 8 miles to the east. This species is not expected to reside on the ETEC site.

The historic range of the red-cockaded woodpecker included 34 counties in eastern Texas. Currently, only 18 Texas counties support this species (Jackson, 1994; FWS, 1995). Old-growth pines (60 to 70 years or more), often with the centers rotted by red-heart fungus, is the usual nesting sites, but younger, uninfected pines are also used. This species is known to occur in San Jacinto County, and numerous occurrences have been recorded in San Jacinto County on federal and private land. The habitat found on the ETEC site is not consistent with what is typical of red-cockaded woodpecker habitat, although there are scattered loblolly pines between 15 to 36 inches in diameter at breast height (dbh) that would be suitable nesting substrate. The forested habitat on the ETEC site, however, is mixed pine/hardwood dominated by loblolly pine (*Pinus taeda*) and water oak (*Quescus nigra*). Trees form a dense crowded overstory and midstory of hardwoods. The midstory and understory consist of a relatively dense growth of pines and hardwoods less than 6 inches dbh. Evidence of the red-cockaded woodpecker was not observed during the pedestrian survey, and PBS&J is of the opinion that this species does not reside on the site or in the immediate site vicinity.

The Louisiana pine snake is state-listed as threatened and is identified by the FWS as a candidate for listing, which means it is a species for which the FWS has enough substantial information to warrant listing as threatened or endangered. Candidate species; however, have no legal protection until they are formally proposed for listing as threatened or endangered. The rare Louisiana pine snake is an inhabitant of forests of east Texas and Louisiana. This species is restricted mainly to open longleaf pine-oak sandhills interspersed with moist bottomlands. It may also occur in adjacent blackjack oak woodlands and in sandy areas of shortleaf pine-post oak forest (Werler and Dixon, 2000). The primary prey of this species is the pocket gopher (*Geomys* spp.). According to Dixon (2000), its range includes San Jacinto County. No evidence of this species or the pocket gopher was observed during the pedestrian survey. The soils of the site were predominantly silty loam. PBS&J is of the opinion that this species is not likely to occur on the ETEC site due to the general absence of appropriate habitat.

8.2 WATERS OF THE U.S., INCLUDING WETLANDS

PBS&J was contracted to review the proposed project for waters of the U.S., including wetlands.

The project area is located within the U.S. Army Corps of Engineers (USACE), Galveston District and can be found on the San Jacinto, Texas, U.S. Geological Survey (USGS) 7.5-minute topographic map.

The USACE, acting under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, regulates certain activities occurring in waters of the U.S. Under Section 404 of the Clean Water Act, authorization must be obtained from the USACE for discharges of dredged and fill material into waters of the U.S., including wetlands. Under Section 10 of the Rivers and Harbors Act of 1899 the USACE regulates work in, or affecting, navigable waters of the U.S.

Under Section 10 of the Rivers and Harbors Act of 1899, the USACE regulates navigable waters of the U.S., a subset of waters of the U.S. Navigable waters of the U.S. are defined at 33 CFR 329 as those waters that are subject to the ebb and flow of the tide and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Navigable waters in the U.S. include many coastal waters, including bays, and major portions of major rivers

Methods

The purpose of this investigation was to determine whether waters of the U.S., including wetlands, occur within the project area. The investigation included an on the ground survey on May 16, 2007, conducted by Kathy Calnan, PBS&J ecologist. The project limits of the site were provided by Jake Lyon. In addition, a desktop assessment was made using numerous sources including USGS 7.5-minute topographic maps, U.S. Fish and Wildlife Service (FWS) National Wetland Inventory (NWI) maps (1999), the Soil Survey of San Jacinto County, Texas (Natural Resources Conservation Service (SCS, 1988), hydric soils list (NRCS, 2007) and Federal Emergency Management Agency (FEMA) flood insurance rate map (FEMA, 1977) was conducted.

The site was evaluated for the presence of jurisdictional waters of the U.S. defined by 33 CFR 328. This evaluation included assessments for ephemeral, intermittent and perennial streams, navigable and nonnavigable waterways, deep-water habitats, wetlands, and other special aquatic sites. As required by existing regulations, potential waters of the U.S., including wetlands, as defined by 33 CFR 328, were evaluated based on the presence of hydrophytic vegetation, wetland hydrology, and hydric soils (USACE, 1987; Reed, 1988). Streams (although none were identified on this site) are determined using ordinary high water mark. The ordinary high water mark is defined as a line on the bank established by the fluctuation of water indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area.

Results

Field activities associated with this jurisdictional determination were conducted on May 16, 2007, by PBS&J Ecologist Kathy Calnan. The following details the findings of this investigation.

Site Description

The project study area is primarily a wooded lot with canopy openings caused by two cleared and maintained natural gas pipeline rights of way (ROW) that cross the property from east to west. The northern most one is widest (approximately 175 feet) and the southern one is approximately 125 feet wide. There is also a narrower (approximately 20 feet) distribution line (labeled Bone Way Lane on some maps) that is located in the northern quarter of the property. It is north of the transmission lines and also runs east to west. None of the ROWs cross each other within the subject property.

Hydrology

There are no streams or other waterways within the project area. Surface water runoff is in the general direction of northwest to southeast according to the USGS topographic map. The site is not located within Zone A or any of the FIRM floodplain designations.

Vegetation

According to The Vegetation Types of Texas (McMahan et al., 1984), the project area is located within the Pineywoods Vegetational Area (i.e., ecoregion). There were four primary vegetation communities, upland grassland (pasture grasses, presumable seeded, in the pipeline/transmission line ROWs), nonforested emergent wetlands (marshes) that occurred in the pipeline/transmission line ROWs, the distribution line ROW and within some of the man-made depressions associated with several off-channel stock ponds (according to Burl Thomas, landowner who was on-site during the field visit), mixed bottomland hardwood forests, and the red maple/willow oak (*Acer rubrum/Quercus phellos)* forested wetland. It should be noted that although this is in the Pineywoods, it is also close to the coastal zone and the topography is typically flat. Very small changes in topography or hydrology can convert upland to wetland conditions.

Nonwetlands:

- Upland Grassland (pasture grasses, presumable seeded, in the pipeline ROWs). These upland grasslands are located in the pipeline/transmission line and distribution line ROWs. They are very limited and probably account for less than 10% of these areas. Pasture grasses including bahiagrass (*Paspalum notatum*) and bermudagrass (*Cynodon dactylon*) are the dominant species. There is also a small, fenced area for cattle corral, on the western side of the property between the northern pipeline and the distribution line, which supports similar upland grasses.

- Mixed/bottomland hardwood forest (BHF). This vegetation accounts for the majority of the property. The dominant tree species included loblolly pine (*Pinus taeda*), water oak (*Quercus nigra*), cherry-bark oak (*Quercus falcata* var. *pagodifolia*). Blackgum (*Nyssa sylvatica*) was also present although not common. The trees varied in size from 2 inches diameter-at-breast-height (dbh) to larger than 20 inches dbh. Common understory species includes Texas yaupon (*Ilex vomitoria*), American beautyberry (*Callicarpa americana*), arrowwood (*Viburnum dentatum*). American holly (*Ilex opaca*) and Chinese tallow tree (*Sapium sebiferum*) were also present. The

herbaceous stratum, sparse due to heavy canopy cover, was dominated woodoats (*Chasmanthium laxum* var. *laxum*).

Wetlands:

- Nonforested emergent wetlands (approximately 8.5 acres) occurred in the pipeline/transmission line ROWs, the distribution line ROW, and within some of the man-made depressions associated with several off-channel stock ponds. The ponds account for less than 0.5 acre. The scattered, man-made depressional wetlands in this area are approximately 3.5 acres in size. The marshes in the pipeline/transmission line ROWs total approximately 4.5 acres. Species includes several rushes (*Juncus* spp.), beakrush (*Rhynchospora* sp.), umbrella sedge (*Cyperus* sp.), gaping panicum (*Panicum hians*), spike rush (*Eleocharis* sp.), and arrowhead (*Sagittaria* sp.). These marshes appear to be isolated. The ROW areas have been disturbed during pipeline/transmission line construction and lumbering. That and the removal of trees (which could result in elevated water table) on these areas probably accounts for the wet conditions. They do not appear to be connected to wet areas off-site.

- Red maple/willow oak forested wetland. This area (approximately 8 acres) is located in the northern quarter of the property and corresponds in part to the NWI (1999) mapped forested wetland. The NWI extended this wetland to the south more than the current field observations indicated. The center (and lowest topographically) part of this area is co-dominated by red maple and willow oak. The somewhat higher surrounding edge of this depression is dominated by willow oak. This area was hummocky, so some areas within it supported species typical of the mixed bottomland hardwood forest described above. The red maples and willow oaks varied in size from 2 inches dbh to larger than 20 inches dbh.

Soils

The NRCS soil survey for San Jacinto County (NRCS, 1983) and the online NRCS Soil Data Mart (NRCS, 2007) were used to identify, characterize, and describe the soils occurring at this location. All of the project study area is mapped as the soil unit Kirbyville fine sandy loam, 0 to 2% slopes (KvA). The descriptions of these soils mapping units appear in the following section. Kirbyville Series are described as “deep, somewhat poorly drained, moderately permeable soils on uplands in the Coastal Plain.” The taxonomic classification of the Kirbyville fine sandy loam, 0 to 2% slopes (KvA) soil is a fine-loamy, siliceous, thermic Plinthaquic Paleudults. In a typical profile, the top 4 inches is a dark grayish brown (10YR 4/2) fine sandy loam. From 4 to 12 inches, the soil is light yellowish brown (10YR 6/4) fine sandy loam, below which is mainly a yellowish brown sandy clay loam with brown and red mottles. The clay content varies.

This soil mapping unit appears on the county list of hydric soils (NRCS, 2007). The hydric component (Sorter silt loam) accounts for only 5% of the KvA mapped unit and occurs in topographic depressions. The Sorter silt loam, 0 to 1% slopes, is typically a grayish brown silt loam in the upper 4 inches and a light brownish gray loam below that.

Topographically, this site is not mapped nor does it appear to be in a natural depressional area. Although not apparent on the USGS quad, the red maple/willow oak forested wetland on the northern quarter of the property, does appear to be a depressional area.

Soils that were observed onsite were consistent with this mapped unit.

Waters of the U.S.

The project study area was reviewed pursuant to Section 404 of the Clean Water Act and Section 10 of the rivers and Harbors Act of 1899. Section 10 of the Rivers and Harbors Act of 1899 requires that a USACE permit be obtained for certain structures or work in or affecting navigable "waters of the United States," prior to conducting the work. Section 404 of the Clean Water Act requires that a USACE permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including wetlands, prior to conducting the work.

The site is not located within a 100- or 500-year floodplain. No creek or stream crosses the project study area. The ground survey determined that there were no channels (i.e., no swales or low areas exhibiting OHWM). There is not a Section 10 waterbody or other channel. The marshes within the pipeline/transmission line and distribution line ROWs and the man-made ones associated with the construction of off-channel ponds are isolated and should not be under Section 404 jurisdiction. However, the forested wetland is contiguous (according to NWI maps) to a much larger (possibly >100 acres) forested wetland. A view of the larger area on the NWI map indicates that there is a pattern of wetlands (forested and nonforested), which appear to be unconnected, possibly relic features of previous waterways. Although this forested wetland is part of a larger wetland, there does not appear to be a surface connection to an existing waterway. Where access was possible by public road, possible wetlands or other hydrologic connections to the north (possibly to Coley Creek) were investigated and located using a Global Positioning System (GPS). However, without access to these contiguous tracts, it would not be possible to assess the hydrologic connection and so, it is not possible to state with certainty that this wetland is isolated (i.e., not connected to or adjacent to a waters of the U.S. and so, not jurisdictional).

A wetland delineation and request for concurrence from the USACE would be required to determine whether these wetlands, particularly the forested wetlands, were jurisdictional. If deemed to be so, any work in or affecting those areas would require some form of authorization from the USACE prior to conducting the work. No Nationwide Permit (NWP) would be applicable if the 8 acres of forested wetland were impacted.

9.0 CULTURAL RESOURCES

PBS&J conducted a cultural resources survey of the subject property. The purpose of the investigation was to locate, describe, document, and assess all existing cultural resources that would be affected by the project. The investigation included a site records search, a review of historic maps, and an intensive pedestrian survey of approximately 42.25 acres. The cultural resource report prepared by PBS&J is presented in its entirety in Exhibit 10.

No cultural resources were located during PBS&J's investigation of the project area. Based on the results of the pedestrian survey and shovel testing and the overall low potential of cultural sites in this location due to the reasons presented, it is unlikely that any significant undiscovered cultural resources are present in the project area. Cultural resource clearance is recommended for this project.

If during construction previously unrecorded cultural resources are encountered, a qualified archeologist should be contacted to assess the remains and provide recommendations as to how to manage the site under the state's Historic Preservation Plan.

10.0 CONCLUSIONS

PBS&J has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527 of the subject property. Any exceptions to, or deletions from, this practice are described in Section 1.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property. Therefore, it is the opinion of PBS&J that no further investigation is warranted.

PBS&J is of the opinion that the subject property is not expected to support the federally listed threatened or endangered species of potential occurrence in San Jacinto County.

No streams or channels were identified within the subject property, however, both emergent and forested wetlands were observed. Although the forested wetlands on the northern part of the property extend into adjacent lands, there were no clear surface connections to waters of the U.S. for any of the wetlands (forested or emergent). NWI maps indicate that this forested wetland is not connected to waters of the U.S. However, without access to the adjacent properties, it is not possible to determine whether there is a hydrologic connection. Consultations with the USACE would be necessary to determine whether the forested wetland was considered jurisdictional (i.e., not isolated). It is possible that the USACE would accept the conclusion that this wetland was isolated, based on NWI maps, aerial photo interpretation and limited groundtruthing.

11.0 DEVIATIONS

PBS&J performed the Phase I ESA in general conformance with the scope and limitations of ASTM Standard Practice E-1527-05. No other deviations were required in conducting this assessment.

12.0 ADDITIONAL SERVICES

PBS&J conducted ecological and cultural resources investigations for the subject property.

13.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

PBS&J has performed this Phase I ESA in conformance with the scope and limitations of ASTM Standard Practice E 1527-05. This report was prepared and reviewed by the following.

_____

James Killian, P. G.
Senior Scientist

_____

Steve McVey, P.G.
Geosciences Program Manager

14.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

PBS&J has provided resumés in the attached Appendix for the following environmental professionals for this Phase I ESA:

James Killian and Steve McVey.

15.0 REFERENCES

Bureau of Economic Geology (BEG). 1992. Geologic Atlas of Texas, Beaumont Sheet. The University of Texas at Austin.

Dixon, J.R. 2000. Amphibians and reptiles of Texas. Texas A&M University Press, College Station. 421 pp.

Fish and Wildlife Service (FWS), U.S. Department of the Interior. 1995. Threatened and endangered species of Texas. Austin, Texas. June.

Fish and Wildlife Service (FWS). 1999. Classification of Wetlands and Deepwater Habitats of the United States. Washington, D.C.

Federal Insurance Administration (now Federal Emergency Management Agency [FEMA]). 1977. Flood Hazard Boundary Map, San Jacinto County, Texas Unincorporated area, Page 14 of 16. Community – Panel No. 480553 0014 A.

Jackson, J.A. 1994. Red-cockaded woodpecker (*Picoides borealis*). In: The Birds of North America, No. 85 (A. Poole and F. Gill, Eds.). Philadelphia: The academy of Natural Sciences; Washington, D.C: The American Ornithologists' Union.

Jones, S.D. and J.K. Wipff. 2003. A 2003 Updated Checklist of the Vascular Plants of Texas. (Available on CD). Botanical Research Center, Bryan, Texas.

Lockwood, M.W. and B. Freeman. 2004. The Texas Ornithological Society Handbook of Texas Birds. Texas A&M University Press, College Station.

McMahan, C.A., R.G. Frye, and K.L. Brown. 1984. The vegetation types of Texas, including cropland. Texas Parks and Wildlife Department, Austin.

National Wetland Inventory (NWI). 1999. Wescott, Texas, 7.5-Minute Topographic Quadrangle. U.S. Fish and Wildlife Service, Washington, D.C.

Natural Resource Conservation Service (NRCS). 1983. Soil Survey of Polk and San Jacinto Counties, Texas. U.S. Department of Agriculture (USDA), Washington, D.C.

Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture. 2007. Soil survey of San Jacinto County, Texas. NRCS, U.S. Department of Agriculture (USDA), Washington, D.C. http://soildatamart.nrcs.usda.gov/Survey.aspx?State=MT (accessed May 2007).

Polasek, L.G. 2000. Bald eagle nest survey and management. Performance Report, Federal Aid Grant No. W-125-R-11, Project No. 10. Texas Parks and Wildlife Department, Austin. 31 August 2000. 12 pp.

Reed, P.B. 1988. National List of Plant Species That Occur in Wetlands: South Plains (Region 6). Biological Report 88 (26.6). U.S. Fish and Wildlife Service, Washington, D.C. <http://www.nwi.fws.gov/bha/download/1988/region6.txt>.

Texas Railroad Commission (RRC). 2007. Retrieved June 1, 2007, from <http:gis2.rrc.state.tx.us/public/viewer2.htm>.

Texas Water Development Board (TWDB). 2007. Retrieved June 1, 2007, from <http:wiid.twdb.state.tx.us/IMS/>.

U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1 (AD/A176 734). USACE, Environmental Laboratory, Waterways Experiment Station, Vicksburg, Mississippi.

U.S. Geological Survey (USGS). 1997. Westcott, Texas Quadrangle, 7.5-minute series, Topographic Map. U.S. Department of the Interior, Washington, D.C.

Werler, J.E., and J. Dixon. 2000. Texas snakes, identification, distribution, and natural history. University of Texas Press, Austin.

Appendix

Resumés of Professionals

Steven R. McVey, PG, CAPM

Program Manager
PBS&J

Education

B.S., Geology, University of Texas at Austin, 1985

Registrations

Professional Geologist
Texas 2206, 2003
Tennessee 0004788, 2002

Licenses

LPST Corrective Action Project Manager, Texas License No. PM0000046, 2004

Certifications

40-Hour OSHA Hazardous Waste Operations
8-Hour OSHA Site Manager and Supervisor
TxDOT Precertified, TxDOT ESN #11037

TxDOT Categories:
2.13.1 - Hazardous Materials Initial Site Assessment

Professional Affiliations

Austin Geological Society

Mr. McVey's principal experience is in the fields of geology, hydrogeology, karst geology, contaminant assessment, waste characterization, waste management and petroleum geology. This experience has been utilized to conduct geologic assessments within the Edwards Aquifer Recharge Zone, hydrogeologic assessments of RCRA and CERCLA sites, remedial investigation studies, remediation of contaminated soil and ground water, and monitoring and recovery well design, placement, and installation.

Mr. McVey has supervised numerous environmental site investigations in support of public school districts due diligence projects. His involvement includes performing the ASTM Standard Phase I Environmental Site Assessments, and coordinating with environmental staff to conduct endangered species habitat and wetland determinations, and cultural resource surveys.

Mr. McVey has performed final closure activities including hydrogeological investigations and preparation of closure documents for industrial wastewater treatment ponds, land treatment units, solid waste management units, landfills, a diesel power plant, and a sandblast yard. Mr. McVey has supervised the drilling, installation, and development of ground water monitoring wells at a variety of sites. His knowledge of drilling methods includes mud rotary, hollow stem auger, and air rotary. He is also experienced with logging of unconsolidated sediments for the purpose of soil description, soil classification, and soil sampling. Mr. McVey has conducted aquifer tests to assist in the preparation of hydrogeologic reports and ground water flow diagrams.

As project manager, he is responsible for managing multi-disciplined teams of geologists, engineers, ecologists, biologist, planners, and subcontractors. Management responsibilities include preparation of scope of work, client interaction, project administration, agency coordination, and quality control of technical reports.

Mr. McVey is a registered professional geologist in Texas and Tennessee and has performed various remediation projects that involved the assessment, characterization, treatment, and monitoring of hazardous waste. Mr. McVey has acquired environmental experience in State, RCRA, and CERCLA/Superfund compliance-related projects including work plan and report preparation, regulatory agency communication, and by conducting a variety of field operations which include the following:

- Extensive hydrogeological investigation in support of a RCRA Facility Investigation (RFI) at an Arkansas oil refinery/processing plant. The RFI included a field and laboratory investigation to define site geology, ground water hydrogeology, and nature and extent of contamination associated with 17 solid waste management units identified at the facility.
- Provided a variety of environmental services to state and private entities which include: hazardous material initial site assessments, Phase I and Phase II ESAs, underground storage tank and leaking underground storage tank site investigations and closures, health and safety plan preparation and implementation, environmental site investigations.
- Prepared numerous ESAs and EAs for siting and selection of proposed correctional facilities for the Bureau of Prisons, U.S. Marshals Service, and the U.S. Immigration and Customs Enforcement (ICE) in Texas, California, Florida, Georgia, Mississippi, and Arizona.
- Performed and supervised the investigation and closure of numerous karst features (caves) discovered during construction activities. The closures required coordination with engineers and subcontractors to seal the caves to provide protection to the Edwards Aquifer while minimizing cost and time delays for the

construction projects.

- Performed project management for the Texas Department of Transportation (TxDOT) indefinite delivery contract for state-wide environmental services.
- Conducted investigations of karsts and caves in the central Texas region to assess the potential for the subsurface voids to provide habitat for threatened and endangered cave invertebrates, provide significant recharge potential to the Edwards aquifer, and provide structural concerns to a project.
- Performed numerous subsurface investigations to determine and the nature and extent of soil and ground water contamination at active and abandoned industrial facilities including power plants, asphalt plants, ship yards, landfills, automotive service centers, natural gas storage facilities, and oil and gas production sites.
- Performed UST and LUST site investigations and closure activities for government and private entities under Texas Commission on Environmental Quality's (TCEQ) Petroleum Storage Tank Program.
- Designed, managed, and executed remedial investigations for closure and remediation under the State of Texas Risk Reduction Rule (RRR) and Texas Risk Reduction Program (TRRP).
- Performed statistical analysis of ground water monitoring data in support of RCRA detection and compliance monitoring programs.
- Performed a characterization and vertical and lateral delineation of impacted soils at a former automobile salvage yard. Prepare a plan for corrective action. Assist client with waste characterization and disposal of waste material.
- Performed final closure activities for multi-site treatment units for sulfur mining industry in accordance with the TNRCC Risk Reduction Program.
- Performed final closure of a diesel power plant in accordance with the TNRCC Risk Reduction Program.
- Prepared Stormwater Pollution Prevention Plans (SWPPPs) for several central Texas municipal landfills and construction of SWPPPs for electric utility and natural gas transmission lines.
- Prepared baseline environmental site assessments for extensive pipeline right-of-way project.
- Prepared hazardous material assessment, and geology and ground water studies for Environmental Impact Study for state highway construction.
- Prepared Hazardous, Toxic and Radioactive Waste (HTRW) Study for the United States Government.
- Multi-site waste characterization and delineation in San Antonio, Texas which involved extensive surface and subsurface soil sampling, hydrogeological investigation, waste classification, delineation and supervision of subsequent waste removal.
- Hydrogeologic investigation for closure of Class 3 landfill at an electric utility power plant.
- Underground storage tank investigations and closure activities conducted at a RCRA permitted facility and several utility service centers.
- Subsurface investigations to determine and define free phase hydrocarbon plumes in shallow aquifers at an electric utility facility and an oil refinery.
- Hydrologic investigation for decant basin certification.
- NPDES permitting for sulfur mine operation in south Texas.
- Extensive research investigation of full-scale remediation technologies for contaminated soils.

James P. Killian, P.G.

Senior Scientist
PBS&J

Education

B.S., Geological Science, Stephen F. Austin State University, 1983

Registrations

Professional Geologist
Tennessee #1790
Texas #10281

Professional Affiliations

Association of Ground Water Scientists and Engineers

Mr. Killian's principle experience is in the fields of geology, hydrogeology, remedial investigations and speleology. He has performed various waste characterizations, geologic, hydrogeologic studies for environmental assessments, remedial investigation, and remediation design.

Mr. Killian has performed numerous environmental assessments including: Phase I, Phase II, and Phase III environmental site assessments (ESAs). These assessments involved performing hydrogeologic investigations to determine the nature and extent of potential contamination, remedial investigations, remediation of soil and ground water, and monitoring and recovery well design and installation. His involvement includes performing the ASTM Standard Phase I Environmental Site Assessments (ESA), Environmental Assessments (EA) and Environmental Impact Statements (EIS) in accordance with the National Environmental Policy Act (NEPA).

Mr. Killian has acquired valuable experience in State, RCRA, and CERCLA/Superfund compliance-related projects including work plan and report preparation, field investigation, risk assessments, regulatory agency communication, and technical report preparation and scheduling for environmental, geological, hydrogeological and waste characterization projects.

Projects which Mr. Killian has had primary responsibility or for which he provided major contribution include:

- Assistant project geologist for the Texas Turnpike Authority (TTA) State Highway 45 North, Toll Road located in Austin/Round Rock, Texas. Responsibilities included assessment of geologic karst features encountered during construction activities per TCEQ and U.S. Fish and Wildlife (FWS) regulations.

- Resident Project Representative of Texas Commission on Environmental Quality (TCEQ) State Superfund Sites located at Toups State Superfund Site in Sour Lake, Texas. The project involved the remediation of a former fence post treating facility. Site remedial action included pre-verification soil sampling, excavation, characterization, and off-site disposal of affected soil; decommissioning of aboveground storage tanks; and disposal of drummed wastes.

- Assisted in the preparation of environmental impact statements for a variety of facilities. Prepared various natural resource components of the EIS and evaluated impacts associated with the proposed action. Experience in NEPA documentation includes two USACE ship channel improvement and widening projects and a state-wide highway corridor evaluation.

- Resident Project Representative of TCEQ State Superfund Sites located at Tricon America, Inc. State Superfund Site in Crowley, Texas. The project involved the remediation of a former smelting and casting facility. Site remedial action included excavation, characterization, and off-site disposal of ash and waste concrete. The site was restored with backfilling, grading and revegetation as per engineering specifications.

- Former dry cleaning facility; Austin, Texas: Excavation, sampling and disposal of impacted soils inside a strip shopping mall using strict ambient air monitoring per site plans and specifications.

- Project geologist, site manager and health/safety officer of Underground Storage Tank (UST) Field Investigation, U.S. Army Corps of Engineers located at the Fort Bliss Military Reservation in El Paso, Texas and New Mexico. The project assessed the soil and groundwater for active and inactive UST sites.

- Project manager/geologist of TCEQ State Superfund Site located in Austin, Texas. The project involved the assessment of an abandoned metal plating facility related to the illegal dumping of waste sludges and rinsewater.

- Project geologist of a Phase I Environmental Due Diligence and Endangered Cave Invertebrate Species Habitat Survey for a 35-acre undeveloped tract located in Austin, Texas.

- Project hydrogeologist of a TxDOT environmental study for a hydrocarbon pipeline rupture located along Interstate 35, New Braunfels, Texas. The project involved site characterization and soil/groundwater contamination delineation.

- Project geologist of a Phase I Environmental Site Assessment for undeveloped property located along Lake Livingston, Texas.

- Project designer of a soil/groundwater remediation program related to a UST release located at a former U.S. Postal Office, Dallas, Texas. The project involved the remediation of impacted soils and groundwater using soil vapor extraction and total fluids removal (pump and treat).

- Project hydrogeologist of a geotechnical and environmental study for an apartment complex built over a former municipal landfill located in Austin, Texas. The project was characterized for the presence of landfill debris, methane gas, and potential leachate impact.

- Project manager of a total fluids/soil vapor extraction remediation system at a former Chevron retail gas station located in the Edwards Aquifer Recharge Zone (EARZ).

- Onsite field inspector of a downtown Austin, Texas excavation project for the removal of soils impacted by coal tar apparently released in the area during the 19th-century installation of street lighting. The site was excavated, re-lined, and backfilled for future development plans.

Courses/Seminars

OSHA, Certified Hazardous Waste Operations Safety Training Course (40 hours), 1986

OSHA, 8 Hour Annual Refresher Training

Exhibit 1

General Location Map

north

0 1 2 3 miles

Base Map: DeLorme

PBSJ

• Engineering
• Environmental Consulting
• Surveying

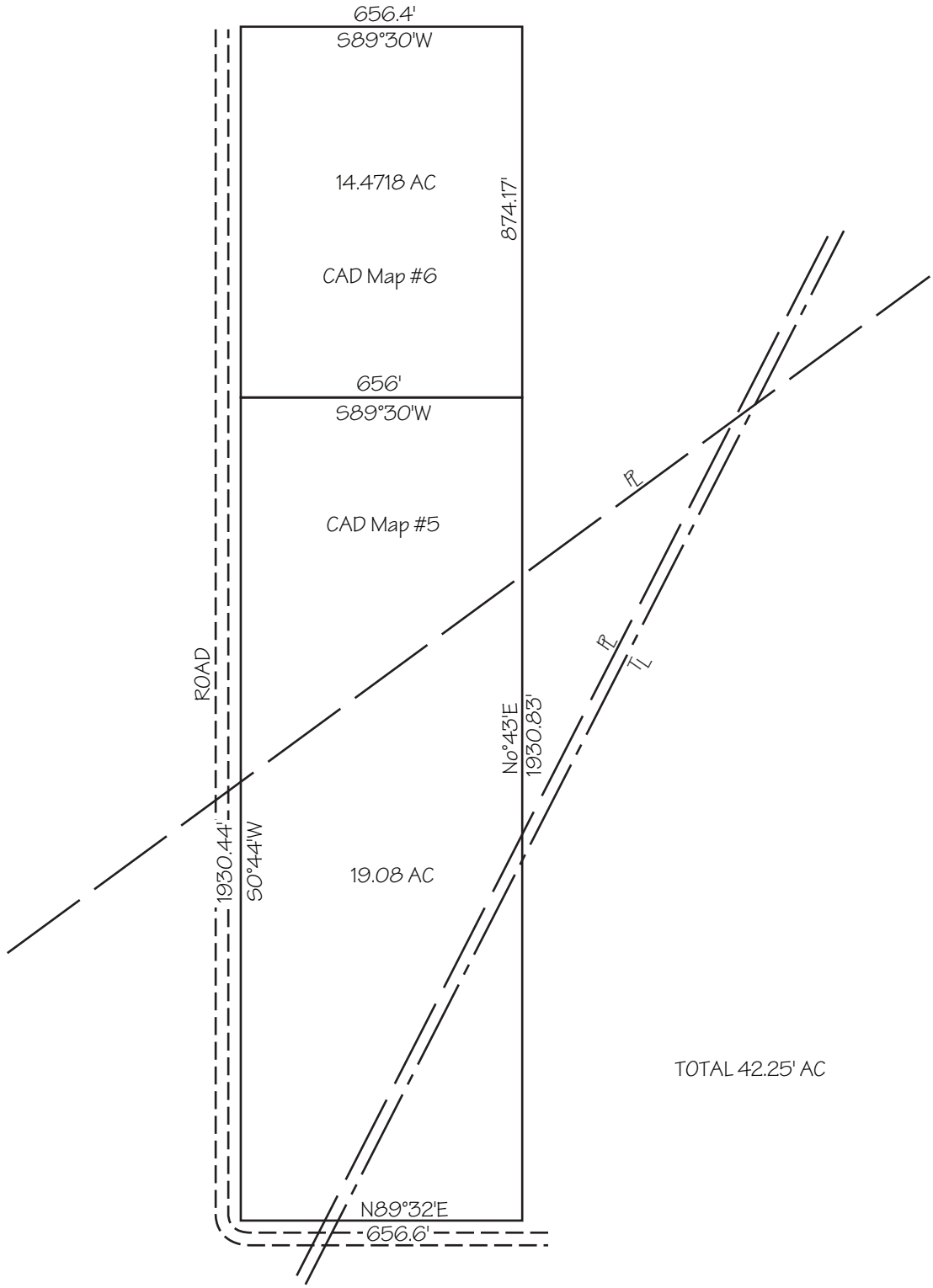
Exhibit 1

GENERAL LOCATION MAP
PROPOSD ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit1.ai

Exhibit 2

Site Map



north

PBSJ

• Engineering
• Environmental Consulting
• Surveying

Exhibit 2

SITE MAP
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit2.ai

Exhibit 3

Regulatory Agency Database Report

Environmental Data Search

for the site

ETEC

Pelican Rd. and Bone Way Lane, Shepherd, TX

performed for

PBS&J

5/8/2007

PBJA6845

www.TelALL.net

(800) 583-0004 by fax (888) 756-7647

Preface

TelALL Corporation

PBJA6845

This document of environmental concerns near Pelican Rd. and Bone Way Lane, Shepherd, TX reports findings of the TelALL data search, prepared on the request of PBS&J.

TelALL Corporation (TelALL) has designed this document to comply with the AAI and ASTM standard E 1527 - 05 (Accuracy and Completeness) and has used all available resources, but makes no claim to the entirety or accuracy of the cited government, state, or tribal records. Our databases are updated at least every 90 days or as soon as possible after publication by the referenced agencies. The following fields of governmental, state, and tribal databases may not represent all known, unknown, or potential sources of contamination to the referenced site. Many different variables effect the outcome of the following document. TelALL maintains extremely high standards, and stringent procedures that are used to search the referenced data. However, TelALL reserves the right at any time to amend any information related to this report.

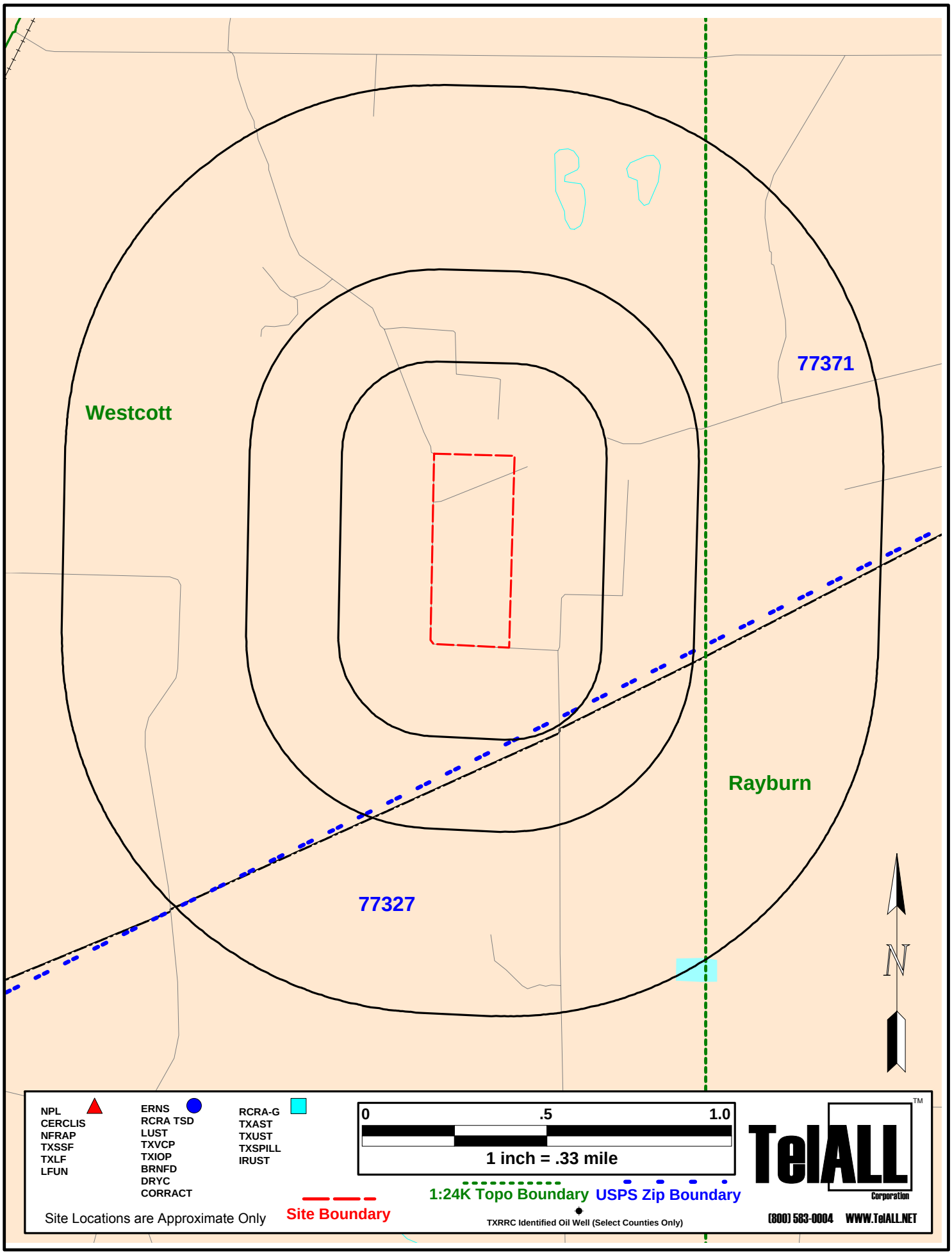
If there is a need for further information regarding this report, or for any customer support please call TelALL at 800 583-0004 for assistance.

This report is divided into the following components:

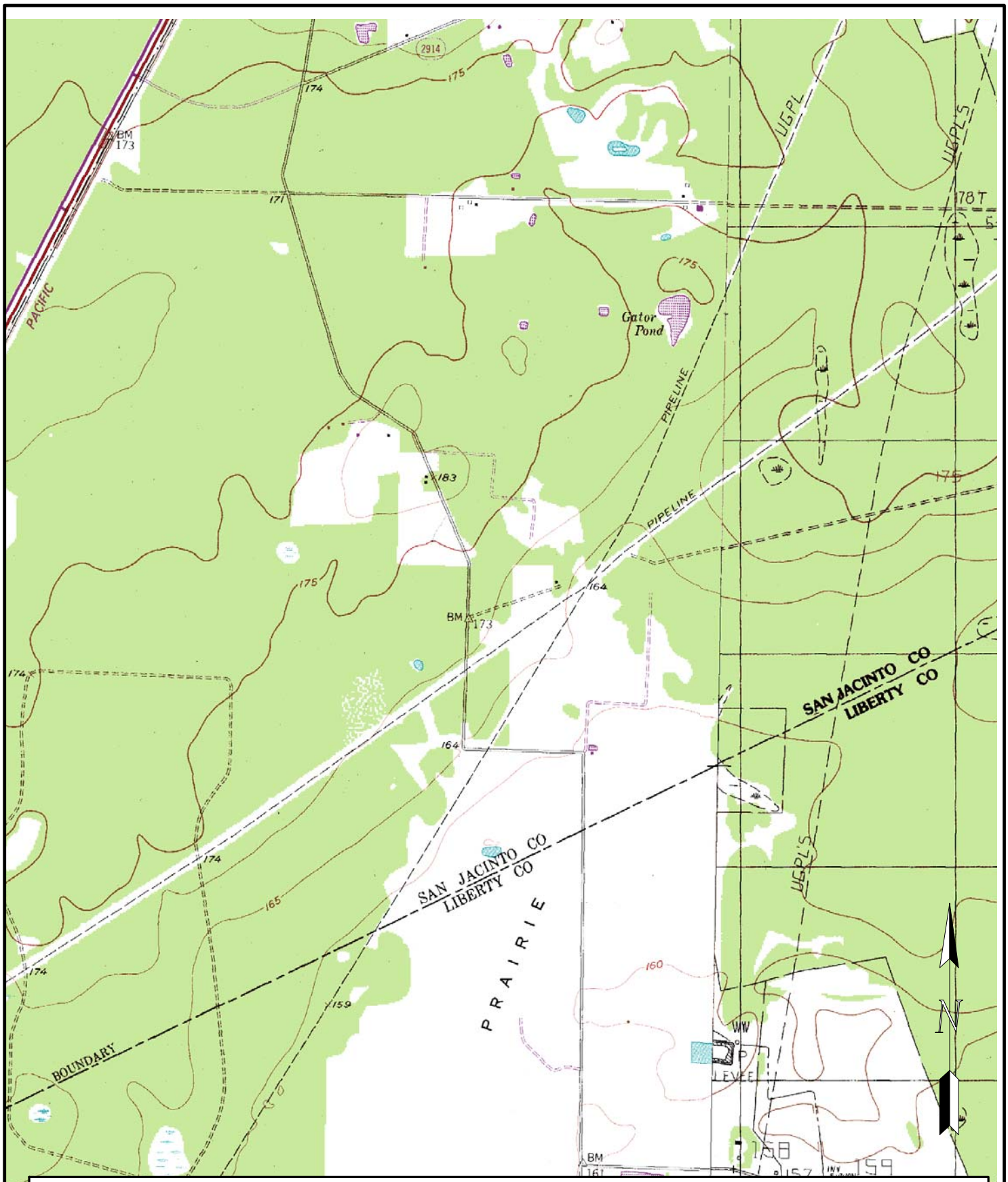
MAP	Identified geocodeable findings relative to this data search.
SUMMARY 1	Sorting of the identified sites by distance from the subject site.
FINAL	A description of each database and a detailed explanation of findings.

Sources

Database	Acronym	Last Updated	Minimum Search Distance	Findings
National Priority List	NPL	03/2007	1	0
Comprehensive Environmental Response, Compensation, and Liability Information System	CERCLIS	03/2007	0.5	0
No Further Remedial Action Planned	NFRAP	03/2007	0.5	0
Resource Conservation and Recovery Information System - Treatment Storage or Disposal	RCRA TSD	03/2007	1	0
Corrective Action	CORRACT	03/2007	1	0
Resource Conservation and Recovery Information System - Generators	RCRA-G	03/2007	0.25	0
Emergency Response Notification System	ERNS	01/2007	0.25	0
Texas Voluntary Cleanup Program	TXVCP	03/2007	0.5	0
Innocent Owner/Operator Program	TXIOP	03/2007	0.5	0
Texas State Superfund	TXSSF	01/2007	1	0
TCEQ Solid Waste Facilities	TXLF	10/2006	1	0
Unauthorized and Unpermitted Landfill Sites	LFUN	10/2006	0.5	0
Leaking Underground Storage Tanks	TXLUST	02/2007	0.5	0
Texas Underground Storage Tanks	TXUST	02/2007	0.25	0
Texas Above Ground Storage Tanks	TXAST	02/2007	0.25	0
Texas Spills List	TXSPILL	10/2006	0.25	0
Brownfield	BRNFD	03/2007	0.5	0
Dry Cleaner	DRYC	03/2007	0.5	0
Indian Reservation Underground Storage Tanks	IRUST	01/2007	0.25	0


Westcott
77371
Rayburn
77327
N
NPL
CERCLIS
NFRAP
TXSSF
TXLF
LFUN
ERNS
RCRA TSD
LUST
TXVCP
TXIOP
BRNFD
DRYC
CORRACT
RCRA-G
TXAST
TXUST
TXSPILL
IRUST
0
.5
1.0
1 inch = .33 mile
1:24K Topo Boundary
USPS Zip Boundary
Site Locations are Approximate Only
Site Boundary
TXRRC Identified Oil Well (Select Counties Only)
TelALL
Corporation
(800) 583-0004
WWW.TelALL.NET

1995 NAPP Photograph



To identify the map date and or revision date please call TRNIS at 512-463-8337.

0 .5 1.0

Scale 1:24000

Current USGS 7.5 Minute Topographic Map

TelALL™ Corporation

(800) 583-0004 WWW.TelALL.NET

TelALL™ Corporation

Sites Sorted By Distance from Center

ETEC
Pelican Rd. and Bone Way Lane, Shepherd, TX

Job PBJA6845
Date 5/8/2007

Distance/Direction	Database	Site Number	Address	City/State	Site Name
	IRUST				NO FINDINGS WITHIN 1/4 MILE.
	CERCLIS				NO FINDINGS WITHIN 1/2 MILE.
	NFRAP				NO FINDINGS WITHIN 1/2 MILE.
	TXVCP				NO FINDINGS WITHIN 1/2 MILE.
	ERNS				NO FINDINGS WITHIN 1/4 MILE.
	CORRACT				NO FINDINGS WITHIN ONE MILE.
	RCRA TSD				NO FINDINGS WITHIN ONE MILE.
	RCRA-G				NO FINDINGS WITHIN 1/4 MILE.
	TXLUST				NO FINDINGS WITHIN 1/2 MILE.
	TXUST				NO FINDINGS WITHIN 1/4 MILE.
	TXAST				NO FINDINGS WITHIN 1/4 MILE.
	TXLF				NO FINDINGS WITHIN ONE MILE.
	TXSSF				NO FINDINGS WITHIN ONE MILE.
	TXSPILL				NO FINDINGS WITHIN 1/4 MILE.
	LFUN				NO FINDINGS WITHIN 1/2 MILE.
	TXIOP				NO FINDINGS WITHIN 1/2 MILE.
	BRNFD				NO FINDINGS WITHIN 1/2 MILE.
	DRYC				NO FINDINGS WITHIN 1/2 MILE.
	NPL				NO FINDINGS WITHIN ONE MILE.

Distances given are tenths of a statute mile.

NPL

National Priority List

NPL is a priority subset of the CERCLIS list. (See CERCLIS, below) The Cerclis list was created by the Comprehensive Environmental Response, Compensation and Liability Acts (CERCLA) need to track contaminated sites. CERCLA was enacted on 12/11/80, and

amended by the Superfund Amendments and Reauthorization Act of 1986. These acts established broad authority for the government to respond to problems posed by the release, or threat of release of hazardous substances, pollutants, or contaminants. CERCLA

also imposed liability on those responsible for releases and provided the authority for the government to undertake enforcement and abatement action against responsible parties. Institutional/Engineering Controls searched.

Source: United States Environmental Protection Agency (EPA)

Database: NPL
Site: No findings within one mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

CERCLIS

Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS is the official repository for site and non-site specific Superfund data in support of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). It contains information on hazardous waste site assessment and remediation

from 1983 to the present. CERCLIS information is used to report official Superfund accomplishments to Congress and the public, assist EPA Regional and Headquarters managers in evaluating the status and progress of site cleanup actions, track Superfund

Comprehensive Accomplishments Plan (SCAP), and communicate planned activities and budgets. Institutional/Engineering Controls searched.

Source: United States Environmental Protection Agency (EPA)

Database: CERCLIS
Site: No findings within 1/2 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

NFRAP

No Further Remedial Action Planned

NFRAP Sites indicate a CERCLIS site that was designated "No further remedial action planned" by the EPA February 1995. Institutional/Engineering Controls searched.

Source: United States Environmental Protection Agency (EPA)

Database: NFRAP
Site: No findings within 1/2 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

RCRA TSD

Resource Conservation and Recovery Information System - Treatment Storage or Disposal

Resource Conservation and Recovery Information System (RCRIS) Under the Resource Conservation and Recovery Act (RCRA), generators, transporters, treaters, storers, and disposers of hazardous waste as defined by the federally recognized hazardous waste

are required to provide information concerning their activities to state environmental agencies, who in turn provide the information to regional and national U.S. EPA offices. The RCRA TSD (Treatment Storage or Disposal) is a subset of the RCRIS list.

RCRA TSD tracks facilities that fall under the Treatment Storage or Disposal classification.

Source: United States Environmental Protection Agency (EPA)

Database: RCRA TSD
Site: No findings within one mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

CORRACT

Corrective Action

CORRACT lists RCRIS (Resource Conservation and Recovery Information System) sites that are currently under corrective action. Institutional/Engineering Controls searched.

Source: United States Environmental Protection Agency (EPA)

Database: CORRACT
Site: No findings within one mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

RCRA-G

Resource Conservation and Recovery Information System - Generators

Resource Conservation and Recovery Information System (RCRIS) Under the Resource Conservation and Recovery Act (RCRA), generators, transporters, treaters, storers, and disposers of hazardous waste as defined by the federally recognized hazardous waste,

are required to provide information concerning their activities to state environmental agencies, who in turn provide the information to regional and national U.S. EPA offices. The RCRA-G (Generators) list is a subset of the RCRIS list.

RCRA-G tracks facilities that fall under the generators or transporters classification.

CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS (CESQG) produce less than 100 kg per month of hazardous waste.

SMALL QUANTITY GENERATORS (SQG) produce at least 100 kg per month but less than 1000 kg per month of hazardous waste.

LARGE QUANTITY GENERATORS (LQG) produce at least 1000 kg per month of hazardous waste.Source: United States Environmental Protection Agency (EPA)

Database: RCRA-G
Site: No findings within 1/4 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

ERNS

Emergency Response Notification System

ERNS supports the release notification requirements of section 103 of the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA), as amended; section 311 of the Clean Water Act;

and sections 300.51 and 300.65 of the National Oil and Hazardous Substances Contingency Plan.

Additionally, ERNS serves as a mechanism to document and verify incident-location information as initially reported, and is utilized as a direct source of easily accessible data, needed for analyzing oil and hazardous substances spills.

Source: National Response Center (NRC)

Database: ERNS
Site: No findings within 1/4 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TXVCP

Texas Voluntary Cleanup Program

Created under HB 2296, The Voluntary Cleanup Program (VCP) was established on 09/01/95 to provide administrative, technical, and legal reasons to promote the cleanup of tainted sites in Texas. Since future lenders and landowners get protection from

liability to the State of Texas for cleanup of sites under the VCP, most of the constraints for completing real estate deals at those sites are removed. As a result, many unused or under used sites may be restored to economically productive or community

beneficial uses. After cleanup, the parties get a certificate of completion from the TCEQ which states that all lenders and future land owners who are not PRP's are free from all liability to the State. Institutional/Engineering Controls searched.

Parts of the above description were taken from the TCEQ/VCP Website. (http://www.TCEQ.state.tx.us/permitting/remed/vcp/)

The investigation phases are listed as INVESTIGATION, REMEDIATION, POST-CLOSURE, and COMPLETE.

Contaminant Categories (PERC and BTEX). Source: Texas Commission on Environmental Quality (TCEQ)

Database: TXVCP
Site: No findings within 1/2 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TXIOP

Innocent Owner/Operator Program

The TX IOP, created by House Bill 2776 of the 75th Leg, provides a cert. to an innocent owner or operator if their property is contaminated as a result of a release or migration of contaminants from a source or sources not loc. on the prop., and they

did not cause or contribute to the source or sources of contamination. Like the TxVCP Prog., the IOP can be used as a redevelopment tool or as a tool to add value to a contaminated prop. by providing an Innocent Owner/Operator Certificate (IOC). However,

unlike the VCP release of liability, IOCs are not trans. to future owners/oper's. Future owners/oper's are eligible to enter the IOP and may rec. an IOC only after they become an owner or operator of the site.

The above description were taken from the TCEQ/IOP Website. (http://www.TCEQ.state.tx.us/permitting/remed/vcp/iop.html)

Source: Texas Commission on Environmental Quality (TCEQ)

Database: TXIOP
Site: No findings within 1/2 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TXSSF

Texas State Superfund

The Texas State Superfund database is a list of sites that the State of Texas has identified for investigation or remediation.

Texas State Superfund sites are reviewed for potential upgrading to Comprehensive Environmental Response, Compensation, and Liability Information System status by the federal Environmental Protection Agency. Institutional/Engineering Controls searched.

Source: Texas Commission on Environmental Quality (TCEQ)

Database: TXSSF
Site: No findings within one mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TXLF

TCEQ Solid Waste Facilities

Texas Commission on Environmental Quality (TCEQ) Requires municipalities and counties to report known active and inactive landfills.

Texas Landfills is a listing of solid waste facilities registered and tracked by the TCEQ Solid waste division. The facilities tracked include solid waste disposal sites as well as transfer stations and processing stations.

Source: Texas Commission on Environmental Quality (TCEQ)

Database: TXLF
Site: No findings within one mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

LFUN

Unauthorized and Unpermitted Landfill Sites

Unauthorized sites have no permit and are considered abandoned. All information about these sites was compiled by Southwest Texas State University under contract with TCEQ and is based on a search of publicly available records.

Source: Texas Commission on Environmental Quality (TCEQ)

Database: LFUN
Site: No findings within 1/2 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TXLUST

Leaking Underground Storage Tanks

State lists of leaking underground storage tank sites. Section 9003(h) of Subtitle I of RCRA gives EPA and states, under cooperative agreements with EPA, authority to clean up releases from UST systems or require owners and operators to do so.

Source: Texas Commission on Environmental Quality (TCEQ)

Database: TXLUST
Site: No findings within 1/2 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TXUST

Texas Underground Storage Tanks

Underground Storage Tanks - Permitted underground storage tanks tracked and maintained by the Texas Commission on Environmental Quality (TCEQ).

Source: Texas Commission on Environmental Quality (TCEQ)

Database: TXUST
Site: No findings within 1/4 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TXAST

Texas Above Ground Storage Tanks

Aboveground Storage Tanks - Permitted aboveground storage tanks tracked and maintained by the Texas Commission on Environmental Quality (TCEQ).

Source: Texas Commission on Environmental Quality (TCEQ)

Database: TXAST
Site: No findings within 1/4 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TXSPILL

Texas Spills List

Texas Commission on Environmental Quality (TCEQ) tracks cases where emergency response is needed for cleanup of toxic substances.

Source: Texas Commission on Environmental Quality (TCEQ)

Database: TXSPILL
Site: No findings within 1/4 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

BRNFD

Brownfield

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Institutional/Engineering Controls searched.

Source: Texas Commission on Environmental Quality (TCEQ)

Database: BRNFD
Site: No findings within 1/2 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

DRYC

Dry Cleaner

House Bill 1366 requires all dry cleaning drop stations and facilities in Texas to register with Texas Commission on Environmental Quality (TCEQ) and implement new performance standards at their facilities as appropriate.

It also requires distributors of dry cleaning solvents to collect fees on the sale of dry cleaning solvents at certain facilities.

Source: Texas Commission on Environmental Quality (TCEQ)

Database: DRYC
Site: No findings within 1/2 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

IRUST

Indian Reservation Underground Storage Tanks

All Appropriate Inquiries (AAI) rule has requested that Underground Storage Tanks on Indian Land be included in any ESA that is affected. Permitted Underground Storage Tanks on Indian Land are tracked and maintained by the EPA.

Source: United States Environmental Protection Agency (EPA)

Database: IRUST
Site: No findings within 1/4 mile.
Dir./Distance (in Miles)
Map Number:
Address:
Zip Code:
City:

TelALL Zip Index

The following zip codes, are the zip codes that TelALL used for generating the preceding report. The information is provided to help our customers make the most thorough data evaluation possible.
Lat/Lon. info is provided to assist in locating sites.Lat/Lon info that is listed as "0" indicates that the site has not been geocoded. This does not indicate that the site is an orphan or was not evaluated by TelALL's research personnel.

TelALL™ Corporation

FACZIP	DATABASE	SITENAME	ADD	CITY	LATITUDE	LONGITUDE
77327	*CERCLIS*	DEARBORN PRECIOUS METALS	101-A DEER CROSSING ROAD	CLEVELAND	30.277235	-95.06639
	CORRACT	UNION TANK CAR CLEVELAND	604 COUNTY ROAD 2205	CLEVELAND	30.363655	-95.02001
	DRYC	COLLEGE ST CLEANERS	229 S COLLEGE AVE	CLEVELAND	30.340433	-95.088067
		COWBOY CLEANERS	220 N TRAVIS AVE	CLEVELAND	30.343692	-95.087261
		LIBERTY CLEANERS	1703 E HOUSTON ST	CLEVELAND	30.339245	-95.06753
			1823 E HOUSTON ST	CLEVELAND	30.337444	-95.065106
		T N T DRY CLEANERS	23130 HIGHWAY 321	CLEVELAND	30.336353	-95.063648
		VIP CLEANERS	429 W SOUTHLINE ST	CLEVELAND	30.3361	-95.099
	ERNS	EMBASSY GAS CO	RT 10 BOX 7194	CLEVELAND	30.3255	-95.2416
	NFRAP	DON JOHNSON DISPOSAL SITE	RAYBURN RD 1/2 MI S HWY 105	CLEVELAND	30.33994	-95.093055
	RCRA TSD	UNION TANK CAR CLEVELAND	604 COUNTY ROAD 2205	CLEVELAND	30.363655	-95.02001
	RCRA-G	A & M WASHTERIA	217 S WASHINGTON STREET	CLEVELAND	30.342001	-95.090559
		GEORGIA-PACIFIC WOOD PRODU	12936 FM 787 W	CLEVELAND	30.348753	-95.075338
		MARTIN CHEVROLET-BUICK INC	516 S WASHINGTON	CLEVELAND	30.339297	-95.092066
		TENNESSEE GAS PIPELINE STA 2	25726 HWY 105 W	CLEVELAND	30.32256	-95.161287
		UNION TANK CAR CLEVELAND	604 COUNTY ROAD 2205	CLEVELAND	30.363655	-95.02001
		VIP CLEANERS	429 W SOUTHLINE STREET SUITE 5	CLEVELAND	30.3361	-95.099
		WAL-MART NO 249	HWY 321	CLEVELAND	30.34226	-95.088037
	TXAST	C & C LUMBER & TRANSPORT	1772 HWY 105 E	CLEVELAND	30.338294	-95.066087
			1772 HWY 105 E	CLEVELAND	30.338294	-95.066087
			1772 HWY 105 E	CLEVELAND	30.338294	-95.066087
			1772 HWY 105 E	CLEVELAND	30.338294	-95.066087
		CHAMPIONS CLEVELAND OFFICE	S US HWY 59	CLEVELAND	30.3325	-95.0963
			S US HWY 59	CLEVELAND	30.3325	-95.0963
		CLEVELAND FACILITY	HWY 105 1M W OF HWY 59	CLEVELAND		
			HWY 105 1M W OF HWY 59	CLEVELAND		
			HWY 105 1M W OF HWY 59	CLEVELAND		
		CLEVELAND SAWMILL	HWY 59 S	CLEVELAND	30.386	-95.0639
			HWY 59 S	CLEVELAND	30.386	-95.0639
			HWY 59 S	CLEVELAND	30.386	-95.0639
			HWY 59 S	CLEVELAND	30.386	-95.0639
		CLW INC	10001 FM 2025	CLEVELAND	30.3413	-95.1008
		COLBY CONSTRUCTION CO INC	LOW WATER BRIDGE RD	CLEVELAND	30.3553	-95.10597
			LOW WATER BRIDGE RD	CLEVELAND	30.3553	-95.10597
		CONSORT	FM 787	DOLEN	30.341595	-95.086094
		DOLEN SAND PLANT	2498 COUNTY ROAD 2185	CLEVELAND	30.380491	-94.89937
		FOWLER SAND & GRAVEL	HC 01	CLEVELAND		
		GEORGIA PACIFIC CLEVELAND P	9 MI E OF CLEVELAND ON	CLEVELAND		
			9 MI E OF CLEVELAND ON	CLEVELAND		
			9 MI E OF CLEVELAND ON	CLEVELAND		
			9 MI E OF CLEVELAND ON	CLEVELAND		
		LIBERTY COUNTY PRECINCT 2	CR 2206 0.25 MI N	CLEVELAND	30.363592	-95.036535
			CR 2206 0.25 MI N	CLEVELAND	30.363592	-95.036535
		LIBERTY COUNTY PRECINCT 3	119 FENNER	CLEVELAND	30.340579	-95.08269
		LP CLEVELAND CHIPMILL	HWY 59 N	CLEVELAND	30.3643	-95.0816
		MCWATERS TRUCKING CO SHOP	FM 1725	CLEVELAND	30.3413	-95.1008
			FM 1725	CLEVELAND	30.3413	-95.1008
		PAVERS SUPPLY CLEVELAND YA	300 US HIGHWAY 59 S	CLEVELAND	30.3325	-95.0963
		PIONEER - DOLEN PLANT	HWY 787	CLEVELAND	30.341595	-95.086094
		SECURITY LANDFILL	19248 HIGHWAY 105	CLEVELAND	30.3291	-95.2693
			19248 HIGHWAY 105	CLEVELAND	30.3291	-95.2693
		SECURITY RECYCLING AND DISP	19248 HWY 105	CLEVELAND	30.3291	-95.2693
		TARKINGTON ISD	FM 163	CLEVELAND		
		TXI	HWY 787	ROMAYOR	30.341595	-95.086094
		UNION TANK CAR COMPANY	FM 787	CLEVELAND	30.341595	-95.086094
	TXLF	CITY OF CLEVELAND LANDFILL	.4 MILE N STATE HIGHWAY 105 2.5	LIBERTY	30.37	-95.04
			3 MILE S OF CITY ON GLADSTELL R	LIBERTY	30.26667	-95.11667
		SECURITY LANDFILL RFD	2.4 MILES SE INTERSECTION STATE	MONTGOMER	30.316666	-96.269444
			2.4 MILES SE INTERSECTION STATE	MONTGOMER	30.316666	-96.269444
			2.4 MILES SE INTERSECTION STATE	MONTGOMER	30.316666	-96.269444
			2.4 MILES SE INTERSECTION STATE	MONTGOMER	30.316666	-96.269444
			2.4 MILES SE INTERSECTION STATE	MONTGOMER	30.316666	-96.269444
			2.4 MILES SE INTERSECTION STATE	MONTGOMER	30.316666	-96.269444
	TXLUST	AUTO ZONE 3117	1217 E HOUSTON	CLEVELAND	30.341111	-95.073974
		CAREYS CASH & CARRY	3 MILES SOUTH ON HWY 321	CLEVELAND		
		CORLEYS 66	225 S WASHINGTON	CLEVELAND	30.341943	-95.090595
		DENNYS 2	900 N WASHINGTON	CLEVELAND	30.350653	-95.085353
		DIAMOND SHAMROCK 1410	1109 E HOUSTON	CLEVELAND	30.341098	-95.075115
		DIAMOND SHAMROCK 598	201 S WASHINGTON	CLEVELAND	30.342118	-95.090487
		FIRST BANK & TRUST PROPERTY	117 E HOUSTON	CLEVELAND	30.342308	-95.087875
		FLINTEX CLOSED SITE	701 WASHINGTON	CLEVELAND	30.3413	-95.1008

TelALL™ Corporation

FACZIP	DATABASE	SITENAME	ADD	CITY	LATITUDE	LONGITUDE
77327	*TXLUST*	FREEMAN GROCERY	FM 1725	CLEVELAND	30.3413	-95.1008
		GYPSIE ETHEL HARRELL	211 E HOUSTON	CLEVELAND	30.341947	-95.087002
		HALLS 321 TEXACO	512 E HOUSTON ST	CLEVELAND	30.340944	-95.083646
		KIRBY FOREST INDUSTRIES INC	RT 1 BOX 654 FM 787	CLEVELAND	30.346215	-95.082171
		LIBERTY COUNTY DEALERSHIP	S HWY 59 1 MILE S OF CLEVELAND	CLEVELAND	30.386	-95.0639
		PRAIRIE PAINT & BODY	22750 HWY 321	CELVELAND	30.336353	-95.063648
		ROY C CRYSEL	21120 HWY 105	CLEVELAND	30.3277	-95.2355
		SAN JACINTO WORK CENTER	FM 2025 6 MILES S OF COLDSPRIN	CLEVELAND	30.31399	-94.94915
		SHELL FOOD MART	8014 HWY 59	CLEVELAND	30.3446	-95.0804
		SHIRLEYS TIRE	1500 N WASHINGTON	CLEVELAND	30.354779	-95.082586
		SMITH MOTOR CO	1105 N WASHINGTON	CLEVELAND	30.352268	-95.084549
		SMOKEYS TIRE AND BRAKE	301 E HOUSTON ST	CLEVELAND	30.341579	-95.08608
		STOP N GO 2394	445 SOUTHLINE	CLEVELAND	30.3363	-95.0884
		TIRES PLUS	101 S WASHINGTON	HOUSTON	30.343108	-95.089878
		TRIPLE R SUPPLY	HWY 321 4 MI E OF CLEVELAND	CLEVELAND	30.34226	-95.088037
		TWIN RANCH PROPERTIES	RT 9 BOX 680	CLEVELAND	30.31399	-94.94915
		TXDOT MAINTENANCE FACILITY	FM 2025	CLEVELAND	30.31399	-94.94915
		W D WEST TEXACO	HIGHWAY 59 & FM 105 S	CLEVELAND		
	TXSPILL	BILLY BAUER TRUCKING	OFF HWY 2610 @ LAKE NEAR ROMA	CLEVELAND		
		JOHNSON CONSTRUCTION	JOHNSON CONSTRUCTION FM 2610	CLEVELAND		
		Louisiana Pacific	Bake out of the RTO Unit	Cleveland		
		Louisiana-Pacific Corp - Cleveland	Boiler & RTO,Louisiana-Pacific Corp -	Cleveland		
			EPN - RTO	Cleveland	30.3371	-95.0936
			Louisiana-Pacific Corp - Cleveland	Cleveland	30.3371	-95.0936
			Louisiana-Pacific Corp - Cleveland	Cleveland	30.3371	-95.0936
			Louisiana-Pacific Corp - Cleveland	Cleveland	30.3371	-95.0936
			Louisiana-Pacific Corp - Cleveland	Cleveland	30.3371	-95.0936
			Louisiana-Pacific Corp - Cleveland	Cleveland	30.3371	-95.0936
			Louisiana-Pacific Corp - Cleveland	Cleveland	30.3371	-95.0936
			RTO - VEENER DRYERS,Louisiana-Pa	Cleveland	30.3371	-95.0936
			RTO ON THE VENEER DRYERS	Cleveland	30.3371	-95.0936
			RTO ON THE VENEER DRYERS	Cleveland	30.3371	-95.0936
			RTO ON THE VENEER DRYERS AND	Cleveland		
			RTO ON THE VENEER DRYERS, CLE	Cleveland	30.3371	-95.0936
			RTO on the veneer Dryers,Louisiana-P	Cleveland	30.3371	-95.0936
			RTO on the Veneer Dryers,Louisiana-P	Cleveland	30.3371	-95.0936
			RTO ON THE VENEER DRYERS.,Loui	Cleveland	30.3371	-95.0936
			RTO ON THE VENEER DRYERS.Louis	Cleveland	30.3371	-95.0936
			RTO on Veneer Dryers,Louisiana-Pacifi	Cleveland	30.3371	-95.0936
			RTO VENEER DRYERS, CLEVELAND	Cleveland	30.3371	-95.0936
			RTO VENEER DRYERS, CLEVELAND	Cleveland	30.3371	-95.0936
			RTO, Louisiana-Pacific Corp - Clevelan	Cleveland	30.3371	-95.0936
			RTO, Louisiana-Pacific Corp - Clevelan	Cleveland	30.3371	-95.0936
			RTO, Louisiana-Pacific Corp - Clevelan	Cleveland	30.3371	-95.0936
			scavenger fan, Louisiana-Pacific Corp -	Cleveland	30.3371	-95.0936
		Louisiana-Pacific Corp.	Louisiana Pacific Corp	Cleveland		
			RTO on the Veneer Dryers	Cleveland		
			RTO on Veneer Dryers	Cleveland		
			RTO on Veneer Dryers	Cleveland		
			RTO on Veneer Dryers	Cleveland		
			RTO on veneer dryers,Louisiana-Pacifi	Cleveland		
			RTO VENEER DRYERS, CLEVELAND	Cleveland		
		TOM CARTER	CITY OF RALLS, AVE. E & TILFORD	CLEVELAND		
		WHITENER ENTERPRISE	SINGLE TREE #3 2 MILES SOUTH OF	CLEVELAND	30.259191	-95.146199
		YELLOW ROSE EXPRESS	HIGHWAY AND THE SERVICE RD. L	CLEVELAND		
	TXUST	AKIN CAR WASH	306 S SAN JACINTO AVE	CLEVELAND	30.33995	-95.090442
			306 S SAN JACINTO AVE	CLEVELAND	30.33995	-95.090442
			306 S SAN JACINTO AVE	CLEVELAND	30.33995	-95.090442
		ALUMA WALL INC	E 3.5 MI HWY 321	CLEVELAND	30.3631	-95.0755
			E 3.5 MI HWY 321	CLEVELAND	30.3631	-95.0755
			E 3.5 MI HWY 321	CLEVELAND	30.3631	-95.0755
			E 3.5 MI HWY 321	CLEVELAND	30.3631	-95.0755
		AMERICAN RIG HOUSING	HWY 59 S OF CLEVELAND	CLEVELAND	30.386	-95.0639
		AUTOZONE 3117	1217 E HOUSTON	CLEVELAND	30.341111	-95.073974
		B & I GROCERY	6311 FM 945 S	CLEVELAND	30.2889	-95.2069
			6311 FM 945 S	CLEVELAND	30.2889	-95.2069
		BESSIE BURNS	General Delivery	CLEVELAND	30.3413	-95.1008
			General Delivery	CLEVELAND	30.3413	-95.1008
		BILLY BYERS TRUCKING	W HWY 787	DOLEN	30.341595	-95.086094
		BROOKSHIRE BROTHERS 16	603 E HOUSTON	CLEVELAND	30.341091	-95.082661
			603 E HOUSTON	CLEVELAND	30.341091	-95.082661
		CAREYS CASH & CARRY	RT 4	CLEVELAND	30.36149	-95.074597
			RT 4	CLEVELAND	30.36149	-95.074597
			RT 4	CLEVELAND	30.36149	-95.074597
			RT 4	CLEVELAND	30.36149	-95.074597
		CHAMPION INTERNATIONAL COR	S HWY 59	CLEVELAND	30.386	-95.0639
			S HWY 59	CLEVELAND	30.386	-95.0639
			S HWY 59	CLEVELAND	30.386	-95.0639

FACZIP	DATABASE	SITENAME	ADD	CITY	LATITUDE	LONGITUDE
77327	*TXUST*	CHAMPION INTERNATIONAL COR	S HWY 59	CLEVELAND	30.386	-95.0639
		CHARTER FOOD STORE 8023	314 S WASHINGTON	CLEVELAND	30.341105	-95.090987
			314 S WASHINGTON	CLEVELAND	30.341105	-95.090987
			314 S WASHINGTON	CLEVELAND	30.341105	-95.090987
		CHEVRON SERVICE CENTER	307 S WASHINGTON	CLEVELAND	30.341224	-95.091031
			307 S WASHINGTON	CLEVELAND	30.341224	-95.091031
			307 S WASHINGTON	CLEVELAND	30.341224	-95.091031
			307 S WASHINGTON	CLEVELAND	30.341224	-95.091031
		CITGO SINGLE TREE 3	2154 US HIGHWAY 59 S	CLEVELAND	30.3325	-95.0963
			2154 US HIGHWAY 59 S	CLEVELAND	30.3325	-95.0963
			2154 US HIGHWAY 59 S	CLEVELAND	30.3325	-95.0963
			2154 US HIGHWAY 59 S	CLEVELAND	30.3325	-95.0963
			2154 US HIGHWAY 59 S	CLEVELAND	30.3325	-95.0963
		CITY OF CLEVELAND PUBLIC WO	209 PEACH ST	CLEVELAND	30.342879	-95.077427
			209 PEACH ST	CLEVELAND	30.342879	-95.077427
			209 PEACH ST	CLEVELAND	30.342879	-95.077427
			209 PEACH ST	CLEVELAND	30.342879	-95.077427
		CLEVELAND	S US HWY 59	CLEVELAND	30.3325	-95.0963
			S US HWY 59	CLEVELAND	30.3325	-95.0963
			S US HWY 59	CLEVELAND	30.3325	-95.0963
			S US HWY 59	CLEVELAND	30.3325	-95.0963
		CLEVELAND FOOD MART	610 CROLEY CTR	CLEVELAND	30.341	-95.0838
			610 CROLEY CTR	CLEVELAND	30.341	-95.0838
			610 CROLEY CTR	CLEVELAND	30.341	-95.0838
		CLEVELAND ISD	203 CHARLES BARKER AVE	CLEVELAND	30.356649	-95.083784
			203 CHARLES BARKER AVE	CLEVELAND	30.356649	-95.083784
		CLEVELAND MACK SALES INC	1263 N US HIGHWAY 59	CLEVELAND	30.3643	-95.0816
		CLEVELAND MUNICIPAL AIRPORT	HWY 787	CLEVELAND	30.341595	-95.086094
		CLEVELAND SERVICE CENTER	400 FM 2025	CLEVELAND	30.3613	-95.0932
		CLEVELAND SHELL	814 HIGHWAY 59 S	CLEVELAND	30.339	-95.0952
			814 HIGHWAY 59 S	CLEVELAND	30.339	-95.0952
			814 HIGHWAY 59 S	CLEVELAND	30.339	-95.0952
		CLEVELAND TOOL HOUSE	US HWY 59 & COLLEGE ST	CLEVELAND		
		CLW INC	10001 FM 2025	CLEVELAND	30.3413	-95.1008
			10001 FM 2025	CLEVELAND	30.3413	-95.1008
		COLBY CONSTRUCTION CO INC	LOW WATER BRIDGE RD	CLEVELAND	30.3553	-95.10597
			LOW WATER BRIDGE RD	CLEVELAND	30.3553	-95.10597
			LOW WATER BRIDGE RD	CLEVELAND	30.3553	-95.10597
		COMMERCIAL PROPERTY	509 S WASHINGTON AVE	CLEVELAND	30.339413	-95.092109
			509 S WASHINGTON AVE	CLEVELAND	30.339413	-95.092109
			509 S WASHINGTON AVE	CLEVELAND	30.339413	-95.092109
		CORLEYS 66	225 S WASHINGTON	CLEVELAND	30.341943	-95.090595
			225 S WASHINGTON	CLEVELAND	30.341943	-95.090595
			225 S WASHINGTON	CLEVELAND	30.341943	-95.090595
		DAVIS HILL MICROWAVE	DAVIS HILL RD	CLEVELAND	30.32457	-94.91398
		DENNEYS ONE STOP 2	900 N WASHINGTON	CLEVELAND	30.350653	-95.085353
			900 N WASHINGTON	CLEVELAND	30.350653	-95.085353
			900 N WASHINGTON	CLEVELAND	30.350653	-95.085353
		DIAMOND SHAMROCK 201 S WAS	201 S WASHINGTON	CLEVELAND	30.342118	-95.090487
			201 S WASHINGTON	CLEVELAND	30.342118	-95.090487
			201 S WASHINGTON	CLEVELAND	30.342118	-95.090487
			201 S WASHINGTON	CLEVELAND	30.342118	-95.090487
		DOLEN GROCERY	HWY 787	CLEVELAND	30.341595	-95.086094
			HWY 787	CLEVELAND	30.341595	-95.086094
			HWY 787	CLEVELAND	30.341595	-95.086094
			HWY 787	CLEVELAND	30.341595	-95.086094
		E & G GENERAL STORE	HWY 146	CLEVELAND		
			HWY 146	CLEVELAND		
		EAST TEXAS TRANSMISSON	211 E HOUSTON	CLEVELAND	30.341947	-95.087002
			211 E HOUSTON	CLEVELAND	30.341947	-95.087002
			211 E HOUSTON	CLEVELAND	30.341947	-95.087002
			211 E HOUSTON	CLEVELAND	30.341947	-95.087002
		FIRST BANK AND TRUST	CORNER OF COLLEGE ST	CLEVELAND		
			CORNER OF COLLEGE ST	CLEVELAND		
		FLINTEX OIL CO CLOSED SITE	701 WASHINGTON RD	CLEVELAND	30.3413	-95.1008
			701 WASHINGTON RD	CLEVELAND	30.3413	-95.1008
			701 WASHINGTON RD	CLEVELAND	30.3413	-95.1008
		FREEMAN GROCERY	FM 1725	CLEVELAND	30.3413	-95.1008
			FM 1725	CLEVELAND	30.3413	-95.1008
		GE AMERICOM RAYBURN EARTH	OFF FARM RD	CLEVELAND		
		GEORGIA PACIFIC CLEVELAND P	9 MI E OF CLEVELAND ON	CLEVELAND		
			9 MI E OF CLEVELAND ON	CLEVELAND		
			9 MI E OF CLEVELAND ON	CLEVELAND		
		GILBERTS EXXON	517 S WASHINGTON	CLEVELAND	30.339357	-95.092145
			517 S WASHINGTON	CLEVELAND	30.339357	-95.092145
			517 S WASHINGTON	CLEVELAND	30.339357	-95.092145
		GOODYEAR TIRE & RUBBER	101 S WASHINGTON	CLEVELAND	30.343108	-95.089878
		GREATER CLEVELAND FORD ME	1000 S WASHINGTON	CLEVELAND	30.333555	-95.094338

FACZIP	DATABASE	SITENAME	ADD	CITY	LATITUDE	LONGITUDE
77327	*TXUST*	HALLS TEXACO	512 E HOUSTON	CLEVELAND	30.340944	-95.083646
			512 E HOUSTON	CLEVELAND	30.340944	-95.083646
			512 E HOUSTON	CLEVELAND	30.340944	-95.083646
			512 E HOUSTON	CLEVELAND	30.340944	-95.083646
			512 E HOUSTON	CLEVELAND	30.340944	-95.083646
		HEB 257	100 TRULY PLAZA	CLEVELAND	30.3369	-95.0937
		HUGHES GROCERY	HWY 321 RT4	CLEVELAND	30.34226	-95.088037
			HWY 321 RT4	CLEVELAND	30.34226	-95.088037
		LESTER W DUVAL	HWY 105 & DUCK CREEK R	CLEVELAND		
			HWY 105 & DUCK CREEK R	CLEVELAND		
		LIBERTY COUNTY PRECINCT 2	CR 2206 0.25 MI N	CLEVELAND	30.363592	-95.036535
			CR 2206 0.25 MI N	CLEVELAND	30.363592	-95.036535
			CR 2206 0.25 MI N	CLEVELAND	30.363592	-95.036535
			CR 2206 0.25 MI N	CLEVELAND	30.363592	-95.036535
		LIBERTY COUNTY PRECINCT 3	119 FENNER	CLEVELAND	30.340579	-95.08269
		LOUISIANA PACIFIC CORP	General Delivery	CLEVELAND	30.3413	-95.1008
			General Delivery	CLEVELAND	30.3413	-95.1008
			General Delivery	CLEVELAND	30.3413	-95.1008
		LOWES GAS	110 BOOTHE	CLEVELAND	30.344749	-95.086542
			110 BOOTHE	CLEVELAND	30.344749	-95.086542
			110 BOOTHE	CLEVELAND	30.344749	-95.086542
			110 BOOTHE	CLEVELAND	30.344749	-95.086542
		MARTIN CHEVROLET-BUICK INC	516 S WASHINGTON	CLEVELAND	30.339297	-95.092066
			516 S WASHINGTON	CLEVELAND	30.339297	-95.092066
			516 S WASHINGTON	CLEVELAND	30.339297	-95.092066
			516 S WASHINGTON	CLEVELAND	30.339297	-95.092066
			516 S WASHINGTON	CLEVELAND	30.339297	-95.092066
		MCWATERS TRUCKING CO	205 S MASON	CLEVELAND	30.342256	-95.090877
			205 S MASON	CLEVELAND	30.342256	-95.090877
			205 S MASON	CLEVELAND	30.342256	-95.090877
			205 S MASON	CLEVELAND	30.342256	-95.090877
			205 S MASON	CLEVELAND	30.342256	-95.090877
		MCWATERS TRUCKING CO SHOP	FM 1725	CLEVELAND	30.3413	-95.1008
		MIDWAY DRIVE IN 100090	FM 105 & MONTGOMERY	CLEVELAND		
			FM 105 & MONTGOMERY	CLEVELAND		
		MUNDENS EXXON	122 WASHINGTON	CLEVELAND	30.343357	-95.089604
			122 WASHINGTON	CLEVELAND	30.343357	-95.089604
		MURPHY USA 6616	838 S WASHINGTON Ave	CLEVELAND	30.335099	-95.093645
			838 S WASHINGTON Ave	CLEVELAND	30.335099	-95.093645
			838 S WASHINGTON Ave	CLEVELAND	30.335099	-95.093645
		O M SCOTT & SONS	RT 1	CLEVELAND	30.357927	-95.078822
		PET-DON OIL INC	HWY 59 N	CLEVELAND	30.3643	-95.0816
			HWY 59 N	CLEVELAND	30.3643	-95.0816
		PRAIRIE PAINT & BODY	22750 HIGHWAY 321	CLEVELAND	30.336353	-95.063648
		PUCKETT ENTERPRISES	807 E HOUSTON St	CLEVELAND	30.341075	-95.080272
			807 E HOUSTON St	CLEVELAND	30.341075	-95.080272
			807 E HOUSTON St	CLEVELAND	30.341075	-95.080272
			807 E HOUSTON St	CLEVELAND	30.341075	-95.080272
			807 E HOUSTON St	CLEVELAND	30.341075	-95.080272
			807 E HOUSTON St	CLEVELAND	30.341075	-95.080272
			807 E HOUSTON St	CLEVELAND	30.341075	-95.080272
		RIDLEY ORE PROPERTY	1218 FM 2025	CLEVELAND	30.3613	-95.0932
			1218 FM 2025	CLEVELAND	30.3613	-95.0932
		ROMAYOR GROCERY	5071 FM 787 RD W	CLEVELAND	30.348753	-95.075338
			5071 FM 787 RD W	CLEVELAND	30.348753	-95.075338
			5071 FM 787 RD W	CLEVELAND	30.348753	-95.075338
		ROY C CRYSEL	21120 HIGHWAY 105	CLEVELAND	30.3277	-95.2355
			21120 HIGHWAY 105	CLEVELAND	30.3277	-95.2355
			21120 HIGHWAY 105	CLEVELAND	30.3277	-95.2355
		SAMMYs	10310 FM 2025	CLEVELAND	30.3413	-95.1008
			10310 FM 2025	CLEVELAND	30.3413	-95.1008
		SAN JACINTO WORK CENTER	FM 2025 6MI S OF COLDS	CLEVELAND	30.31399	-94.94915
			FM 2025 6MI S OF COLDS	CLEVELAND	30.31399	-94.94915
			FM 2025 6MI S OF COLDS	CLEVELAND	30.31399	-94.94915
		SCOOPS MART	1503 E HOUSTON ST	CLEVELAND	30.340672	-95.070429
			1503 E HOUSTON ST	CLEVELAND	30.340672	-95.070429
			1503 E HOUSTON ST	CLEVELAND	30.340672	-95.070429
		SCOTT GROCERY	1028 GROVE	CLEVELAND	30.350796	-95.08155
			1028 GROVE	CLEVELAND	30.350796	-95.08155
			1028 GROVE	CLEVELAND	30.350796	-95.08155
		SHADE GROCERY & FEED	HWY 787	CLEVELAND	30.341595	-95.086094
			HWY 787	CLEVELAND	30.341595	-95.086094
			HWY 787	CLEVELAND	30.341595	-95.086094
		SHIRLEYS TIRE	1500 N WASHINGTON	CLEVELAND	30.354779	-95.082586
			1500 N WASHINGTON	CLEVELAND	30.354779	-95.082586
			1500 N WASHINGTON	CLEVELAND	30.354779	-95.082586
		SHOP N GO 21	905 N WASHINGTON AVE	CLEVELAND	30.350733	-95.08542
			905 N WASHINGTON AVE	CLEVELAND	30.350733	-95.08542

FACZIP	DATABASE	SITENAME	ADD	CITY	LATITUDE	LONGITUDE
77327	*TXUST*	SHOP N GO 21	905 N WASHINGTON AVE	CLEVELAND	30.350733	-95.08542
			905 N WASHINGTON AVE	CLEVELAND	30.350733	-95.08542
		SMALLS DRIVE IN	HWY 105 E OF COURTHOUS	CLEVELAND	30.375035	-95.638175
			HWY 105 E OF COURTHOUS	CLEVELAND	30.375035	-95.638175
			HWY 105 E OF COURTHOUS	CLEVELAND	30.375035	-95.638175
		SMITH MOTOR CO	1105 N WASHINGTON	CLEVELAND	30.352268	-95.084549
		SMOKEYS TIRE & BRAKE	301 E HOUSTON ST	CLEVELAND	30.341579	-95.08608
			301 E HOUSTON ST	CLEVELAND	30.341579	-95.08608
		STAR MART FOOD STORE	26509 HIGHWAY 321	CLEVELAND	30.336353	-95.063648
			26509 HIGHWAY 321	CLEVELAND	30.336353	-95.063648
			26509 HIGHWAY 321	CLEVELAND	30.336353	-95.063648
		STOP N GO 2394	445 SOUTHLINE	CLEVELAND	30.3363	-95.0884
			445 SOUTHLINE	CLEVELAND	30.3363	-95.0884
			445 SOUTHLINE	CLEVELAND	30.3363	-95.0884
			445 SOUTHLINE	CLEVELAND	30.3363	-95.0884
		STOP N GO MARKETS 6 661	11975 TIDWELL RD	HOUSTON	29.849975	-95.22184
			11975 TIDWELL RD	HOUSTON	29.849975	-95.22184
		STOP-N-GO 1038	505 S WASHINGTON	CLEVELAND	30.339441	-95.092091
			505 S WASHINGTON	CLEVELAND	30.339441	-95.092091
		SUNMART 480	102 S WASHINGTON AVE	CLEVELAND	30.343033	-95.089808
			102 S WASHINGTON AVE	CLEVELAND	30.343033	-95.089808
			102 S WASHINGTON AVE	CLEVELAND	30.343033	-95.089808
		SUNRISE GROCERY 3	608 NEVELL ST	CLEVELAND	30.346101	-95.082538
			608 NEVELL ST	CLEVELAND	30.346101	-95.082538
		SWIFT-ECKRICH	RT 6 H	CLEVELAND		
			RT 6 H	CLEVELAND		
		T BAR T RANCH	486 FM 2025	CLEVELAND	30.3613	-95.0932
			486 FM 2025	CLEVELAND	30.3613	-95.0932
		TARKINGTON COUNTRY MART	23128 HIGHWAY 321	CLEVELAND	30.336353	-95.063648
			23128 HIGHWAY 321	CLEVELAND	30.336353	-95.063648
		TARKINGTON ISD	FM 163	CLEVELAND		
			FM 163	CLEVELAND		
		TDCJ CLEVELAND PP	901 E 5TH ST	CLEVELAND	30.363255	-95.074321
		TGP COMPRESSOR STATION 25	25726 HWY 105 W	CLEVELAND	30.32256	-95.161287
			25726 HWY 105 W	CLEVELAND	30.32256	-95.161287
		TXDOT CLEVELAND MAINT FACILI	FM 2025	CLEVELAND	30.31399	-94.94915
			FM 2025	CLEVELAND	30.31399	-94.94915
			FM 2025	CLEVELAND	30.31399	-94.94915
			FM 2025	CLEVELAND	30.31399	-94.94915
		VALERO CORNER STORE 1410	1109 E HOUSTON ST	CLEVELAND	30.341098	-95.075115
			1109 E HOUSTON ST	CLEVELAND	30.341098	-95.075115
			1109 E HOUSTON ST	CLEVELAND	30.341098	-95.075115
		WAL-MART SUPERCENTER 249	831 HIGHWAY 59 S	CLEVELAND	30.339	-95.0952
		WEST TEXACO	HWY 59 & 105 SOUTH	CLEVELAND		
			HWY 59 & 105 SOUTH	CLEVELAND		
			HWY 59 & 105 SOUTH	CLEVELAND		
			HWY 59 & 105 SOUTH	CLEVELAND		
		WHITENER ENTERPRISES	1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
			1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
			1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
			1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
			1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
			1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
			1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
			1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
			1016 E HOUSTON ST	CLEVELAND	30.340985	-95.076997
		WHITENER GULF STATION	102 N WASHINGTON	CLEVELAND	30.343188	-95.089711
			102 N WASHINGTON	CLEVELAND	30.343188	-95.089711
			102 N WASHINGTON	CLEVELAND	30.343188	-95.089711
		WHITENER SELF SERVE	1014 E HOUSTON	CLEVELAND	30.340985	-95.077038
			1014 E HOUSTON	CLEVELAND	30.340985	-95.077038
			1014 E HOUSTON	CLEVELAND	30.340985	-95.077038
			1014 E HOUSTON	CLEVELAND	30.340985	-95.077038
	TXVCP	Louisiana Pacific - Cleveland Landfill	Highway 787	Cleveland	30.24642	-94.57525
		Starchem, Ltd.	421 North Fostoria Road	Fostoria	30.1933	-95.1041
77327-	*ERNS*	UNKNOWN	10 MI E OF CLEVELAND ON HWY 78	CLEVELAND		
77327-101	*TXUST*	TARKINGTON EXXON	14615 HIGHWAY 105	CLEVELAND	30.375035	-95.638175
			14615 HIGHWAY 105	CLEVELAND	30.375035	-95.638175
77327-387	*TXSPILL*	Ohio Transport	1405 East Ave # I-30	Cleveland		
77327-401	*TXUST*	CLEVELAND 592 CO	209 E CROCKETT ST	CLEVELAND	30.342999	-95.086477
			209 E CROCKETT ST	CLEVELAND	30.342999	-95.086477
77327-405	*TXAST*	SAFE TIRE DISPOSAL CLEVELAN	1400 N TRAVIS AVE	CLEVELAND	30.353849	-95.081361
77327-930	*TXSPILL*	MR. PIGHPEN	342 Rock Creek Dr	Cleveland	30.343355	-95.145619
			342 Rock Creek Dr	Cleveland	30.343355	-95.145619
77327-999	*ERNS*	MILLER TRANSPORTERS	General Delivery	Cleveland	30.3413	-95.1008
	TXSPILL	Louisiana Pacific	General Delivery	Cleveland	30.3413	-95.1008
			General Delivery	Cleveland	30.3413	-95.1008
77371	*RCRA-G*	EAST TEXAS USED OIL	1200 DOTTIE LN	SHEPHERD	30.5019	-95

FACZIP	DATABASE	SITENAME	ADD	CITY	LATITUDE	LONGITUDE
77371	*RCRA-G*	PHILLIPS WASTE OIL	150 CASTLEBERRY ST	SHEPHERD	30.4894	-95.0041
		SHASTA CLEANERS	11611 STATE HIGHWAY 150	SHEPHERD	30.5019	-95
	TXAST	SHEPHERD HIGH SCHOOL	LOOP 424 BYRD AVE	SHEPHERD	30.5932	-95.1265
			LOOP 424 BYRD AVE	SHEPHERD	30.5932	-95.1265
		SHEPHERD STATION	HWY 59	SHEPHERD	30.538845	-94.970788
	TXLUST	C D BURLESON PROPERTY	HWY 150 & FM 26 CORNER	SHEPHERD		
		DIAMOND SHAMROCK 596	IH 59 N @ FM 150 SHOEMAKER RD	SHEPHERD	30.5511	-94.8894
		FORMER STOP N GO	HWY 59 & SHOEMAKER	SHEPHERD		
		SDHPT	HWY 150 ONE FOURTH MILE W ON	SHEPHERD	30.5019	-95
		SHEPHERD EXXON		SHEPHERD		
		SHEPHERD TEXACO	5950 HWY 59 S	SHEPHERD	30.5918	-95.1319
		TXDOT PARCEL 12	E LINE OF HWY 59 150' N OF SHOEM	SHEPHERD	30.5511	-94.8894
	TXUST	BROCKS 1	HWY 150	COLDSPRING	30.5019	-95
			HWY 150	COLDSPRING	30.5019	-95
		BROCKS 2	FM 1127	SHEPHERD	30.5496	-94.9088
			FM 1127	SHEPHERD	30.5496	-94.9088
		C D BURLESON PROPERTY	SE SH 150 & FM 26	SHEPHERD		
			SE SH 150 & FM 26	SHEPHERD		
		CHAMPION TRAVEL PLAZA	10000 HIGHWAY 59 S	SHEPHERD	30.4358	-95.0531
			10000 HIGHWAY 59 S	SHEPHERD	30.4358	-95.0531
			10000 HIGHWAY 59 S	SHEPHERD	30.4358	-95.0531
			10000 HIGHWAY 59 S	SHEPHERD	30.4358	-95.0531
		DIAMOND SHAMROCK 596	US HIGHWAY 59 & FM 150	SHEPHERD		
			US HIGHWAY 59 & FM 150	SHEPHERD		
			US HIGHWAY 59 & FM 150	SHEPHERD		
			US HIGHWAY 59 & FM 150	SHEPHERD		
		J&A SUPERETTE	HWY 150	COLDSPRING	30.5019	-95
			HWY 150	COLDSPRING	30.5019	-95
		JACOB FOOD MART	12660 HWY 59 S	SHEPHERD	30.4358	-95.0531
			12660 HWY 59 S	SHEPHERD	30.4358	-95.0531
			12660 HWY 59 S	SHEPHERD	30.4358	-95.0531
		MIDTEX OIL SHEPHERD TEXACO	US HWY 59 & CARRIER	SHEPHERD		
			US HWY 59 & CARRIER	SHEPHERD		
			US HWY 59 & CARRIER	SHEPHERD		
			US HWY 59 & CARRIER	SHEPHERD		
		R & Y MINI MART	HWY 59 & FM 223	SHEPHERD		
			HWY 59 & FM 223	SHEPHERD		
			HWY 59 & FM 223	SHEPHERD		
			HWY 59 & FM 223	SHEPHERD		
			HWY 59 & FM 223	SHEPHERD		
		SHELL	4700 HIGHWAY 59 N	SHEPHERD	30.5536	-94.9717
			4700 HIGHWAY 59 N	SHEPHERD	30.5536	-94.9717
			4700 HIGHWAY 59 N	SHEPHERD	30.5536	-94.9717
			4700 HIGHWAY 59 N	SHEPHERD	30.5536	-94.9717
			4700 HIGHWAY 59 N	SHEPHERD	30.5536	-94.9717
			4700 HIGHWAY 59 N	SHEPHERD	30.5536	-94.9717
		SHEPHERD EXXON	HWY 59	SHEPHERD	30.538845	-94.970788
			HWY 59	SHEPHERD	30.538845	-94.970788
			HWY 59	SHEPHERD	30.538845	-94.970788
			HWY 59	SHEPHERD	30.538845	-94.970788
			HWY 59	SHEPHERD	30.538845	-94.970788
			HWY 59 S	SHEPHERD	30.5918	-95.1319
			HWY 59 S	SHEPHERD	30.5918	-95.1319
			HWY 59 S	SHEPHERD	30.5918	-95.1319
		SHEPHERD JUNIOR HIGH SCHOO	28 S RAILROAD AVE	SHEPHERD	30.5926	-95.1287
		STOP N DRIVE 1	10750 HIGHWAY 150	SHEPHERD	30.5019	-95
			10750 HIGHWAY 150	SHEPHERD	30.5019	-95
			10750 HIGHWAY 150	SHEPHERD	30.5019	-95
			10750 HIGHWAY 150	SHEPHERD	30.5019	-95
			10750 HIGHWAY 150	SHEPHERD	30.5019	-95
		STOP N GO 2232	HWY 59 & SCHOEMAKER	SHEPHERD		
			HWY 59 & SCHOEMAKER	SHEPHERD		
			HWY 59 & SCHOEMAKER	SHEPHERD		
		SUPER Z FOOD MARKET	HWY 59 @ FM 150	SHEPHERD	30.538845	-94.970788
			HWY 59 @ FM 150	SHEPHERD	30.538845	-94.970788
		TDS SUPERMARKET	HWY 150 W	SHEPHERD	30.5019	-95
			HWY 150 W	SHEPHERD	30.5019	-95
			HWY 150 W	SHEPHERD	30.5019	-95
			HWY 150 W	SHEPHERD	30.5019	-95
		TXDOT SAN JACINTO CO MAINT F	10351 HWY 150	SHEPHERD	30.5918	-95.1319
			10351 HWY 150	SHEPHERD	30.5918	-95.1319
			10351 HWY 150	SHEPHERD	30.5918	-95.1319
			10351 HWY 150	SHEPHERD	30.5918	-95.1319
77371-624		C Z EXPRESS	4730 HIGHWAY 59 N	SHEPHERD	30.5536	-94.9717

Order Form

TelALL Corporation

Phase I Support Services

FaxTo:
(888) 756-7647

PBJA

tel. 800-583-0004

From: **Jim Killian**
PBS&J
6504 Bridge Point Pkwy, Ste 200
Austin, TX 78730
Tel: 512.327.6840
Fax: 512.327.2453

order online
www.telall.com

Site Information

☐ *Map Included of Approximate Site Area for Increased Accuracy.*

Project Name:	Project #
Street Address:	
City, County, State, Zip:	
Cross Street / Special Instructions	

For Same Day Service Please Order Before Noon C.S.T. * Call for Approximate Aerial Coverage Some Services Available Regionally

☐ **TelALL AAI, ASTM Radius Data Search / Historical Aerial Photo Combo Packag**
*Save with TelALL's Most Popular Package **$144**

☐ **TelALL AAI, ASTM Radius Data Search** *Recent NAPP Aerial Photo Included
*ASTM Search Distances with Color Map included *Current USGS Map Included *Hardcopy or Internet Delivery **$98**

☐ **Extra Quarter Option** *Add an Extra Quarter Mile to our ASTM Radius Search or Combo *Great for Larger Properties
Use with the ASTM Radius Search or Combo to add a 1/4 mile to all Databases. (adds +1.76 sq. mi.of total search area!) **$56**

☐ **TelALL Custom Boundary Data Search** *Recent NAPP Aerial Photo Included *Current USGS Map Included
*ASTM Distances From Actual Property Boundaries *Great for Large or Irregular Sites **Call /Quote**

☐ **TelALL Historical Aerial Photography Search** *Call or Check Online for Approximate Aerial Coverage
*Laser Copies of up to 6 Decades *Same Day Service **$64**

☐ **E-AERIAL Photo Option** *Requires Historical Aerial Photography Search *Up to Six Photos. $3 Each Additional Photo
*Scan and Email of Aerial Photos *Same Day Delivery *Price Includes Mailing of Originals. (USPS) **$20**

☐ **TelALL New Aerial**
*High Resolution Aerial Photos of your site that are days old *Quick turnaround time *Multiple photos sent on CD **Call /Quote**

☐ **TelALL NEPA Check**
*Flood Map, Wetlands Map, Parks, Preserves, Historic Sites, Endangered Species *48 Hour Service **$98**

Other TelALL Services:

*Some Services Available Regionally

☐ City Directories (per hour)	$60	☐ Water Well Search 1/2 Mile	$165
☐ NWI Wetland Map	$40	☐ Historical Topographic Map	$35
☐ Aquifier Structure Map	$40	☐ FEMA Flood Insurance Map	$25
☐ USGS Topo Map (7.5 min)	$20	☐ Geologic Atlas Map	$25
☐ Oil _Gas Review	($40 p/hour $65 for location map)	☐ RecentPhoto (2005 doqq)	$20
☐ **RUSH Status!**	**+20% of Total Order**	☐ Soil Survey Map	$25

Shipping Options

*Next Day Shipping $25 if no Account # is Provided

☐ **Internet Delivery of Radius Search** *Free
E-Mail Address: _____

☐ **Fedex** ☐ Overnight AM Delivery ☐ Overnight PM Delivery ☐ 2nd Day
Account # _____

☐ **U.P.S.** ☐ Overnight AM Delivery ☐ Overnight PM Delivery ☐ 2nd Day
Account #: _____

☐ **Lone Star Overnight**
Account #: _____

Payment

**Payment due on receipt of invoice. Customer is responsible for collection fees, court costs and reasonable attorney fees to collect unpaid invoices.

PO #: _____

☐ VISA - MC - AMEX *(Circle one)*

Card # _____

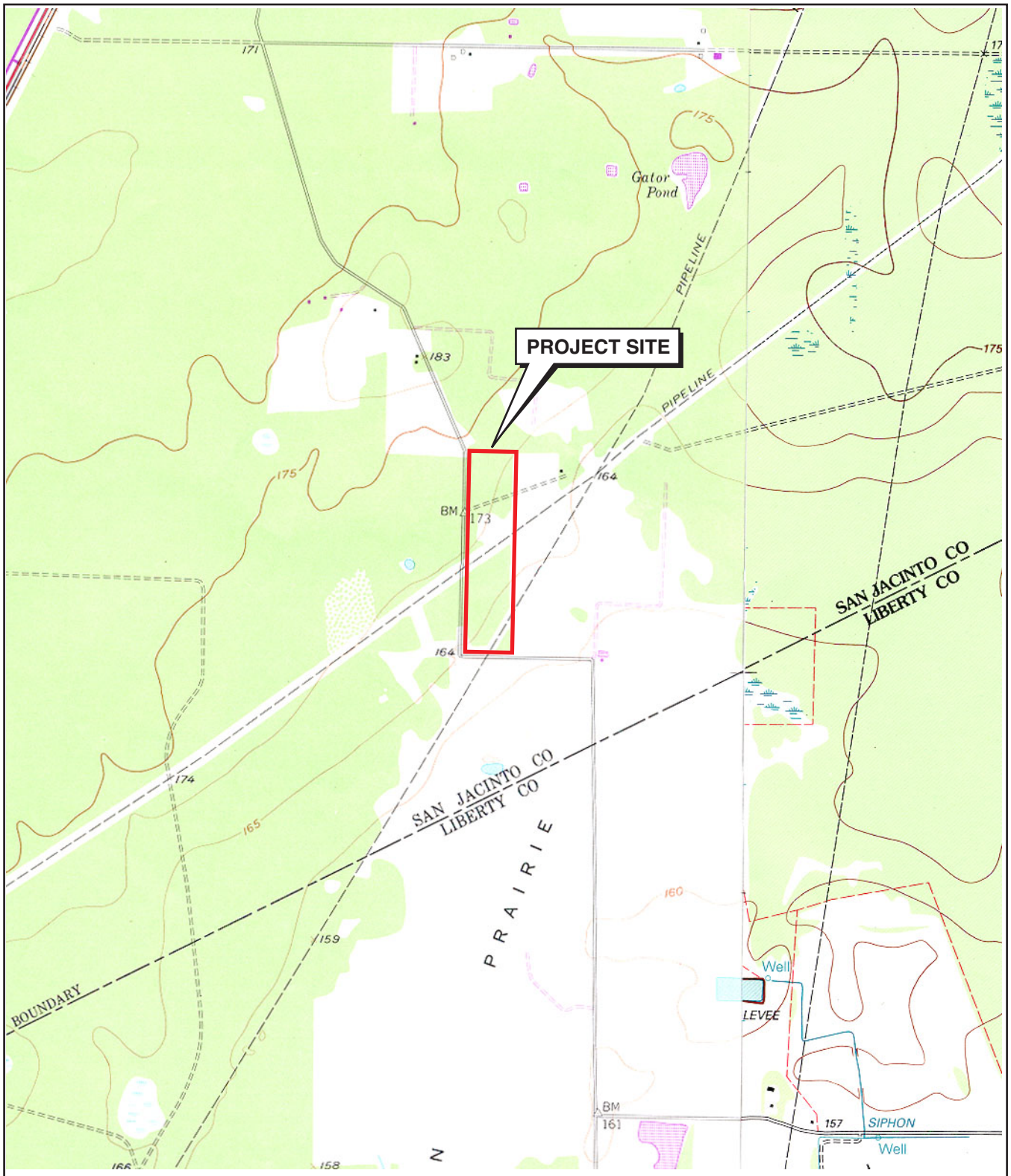
Expiration _____ / _____

Name on Card _____

Questions? Call 1-800-583-0004

Exhibit 4

Topographic Map



north

0 2000 4000 feet

Base Map: USGS 7.5' Quadrangles; Wescott and Rayburn, Texas

PBSJ

- Engineering
- Environmental Consulting
- Surveying

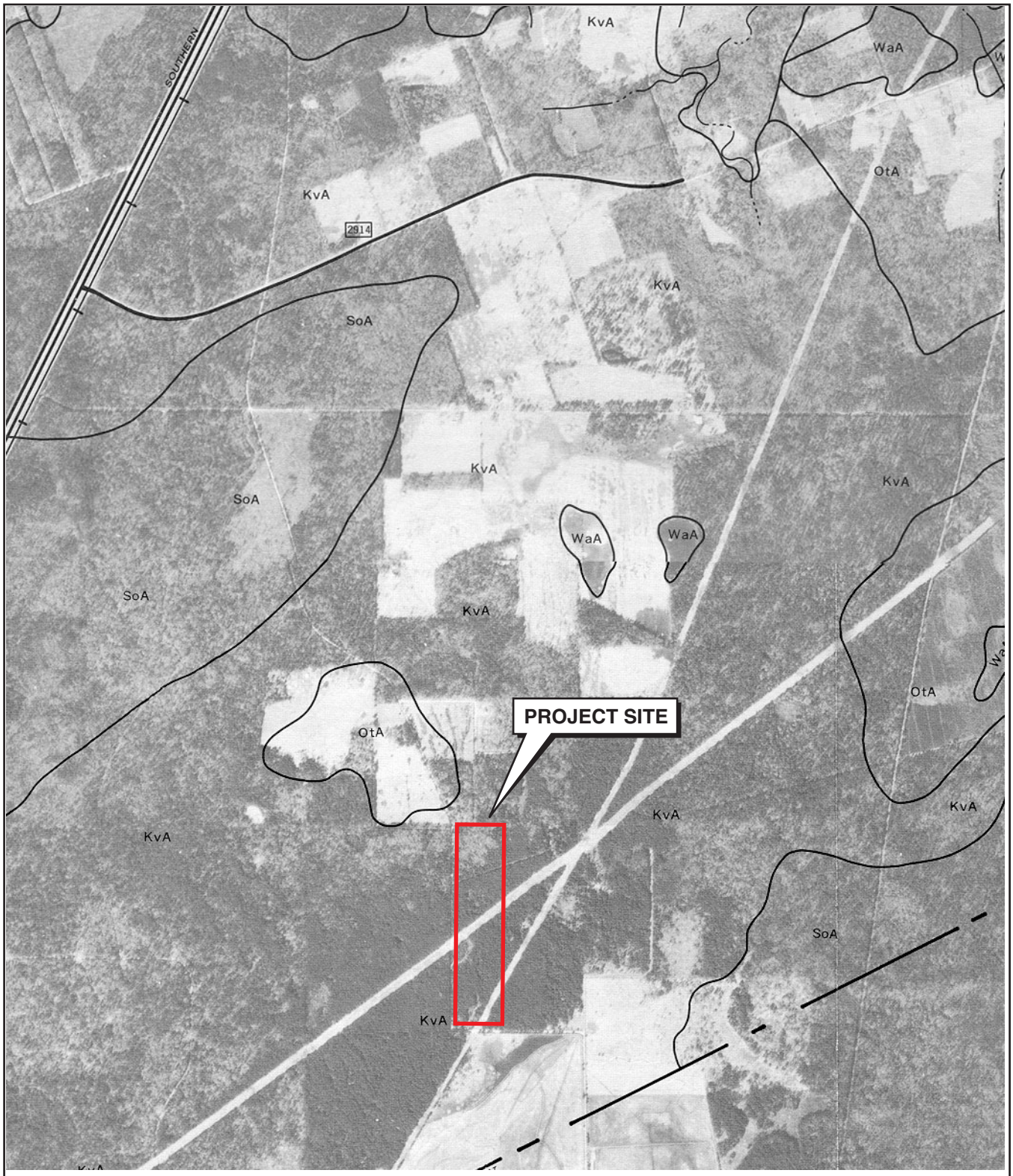
Exhibit 4

TOPOGRAPHIC MAP
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit4.ai

Exhibit 5

Soils Map



north

0 2000 4000 feet

Source: SCS, 1983

PBSJ
• Engineering
• Environmental Consulting
• Surveying

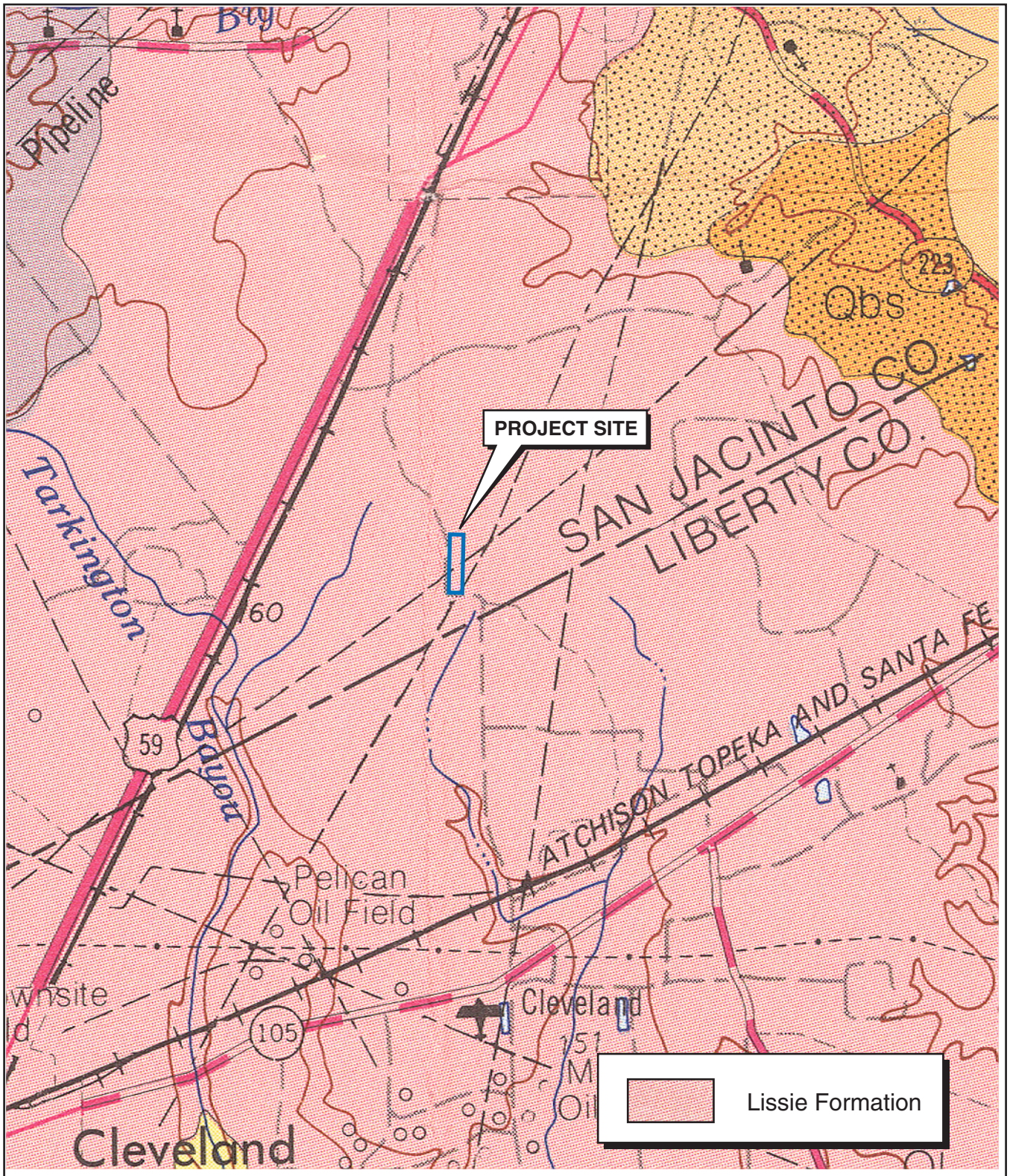
Exhibit 5

SOILS MAP
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit5.ai

Exhibit 6

Geology Map



north

0 1 2 miles

Base Map: UT - Austin Bureau of Economic Geology

PBSJ

• Engineering
• Environmental Consulting
• Surveying

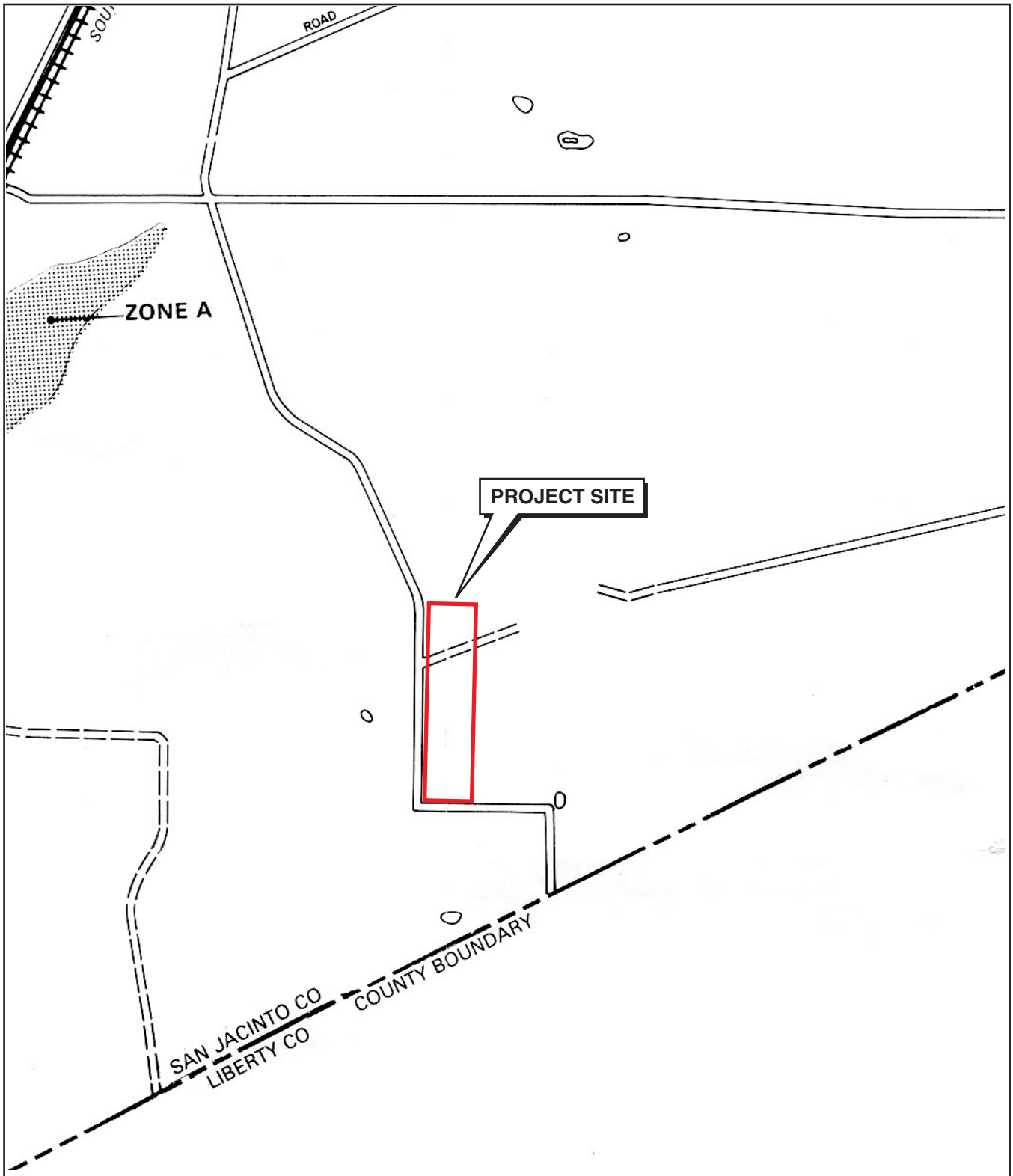
Exhibit 6

GELOGY MAP
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit6.ai

Exhibit 7

Flood Insurance Rate Map



north

0 2000 4000 feet

Source: FEMA, 1977

PBSJ

• Engineering
• Environmental Consulting
• Surveying

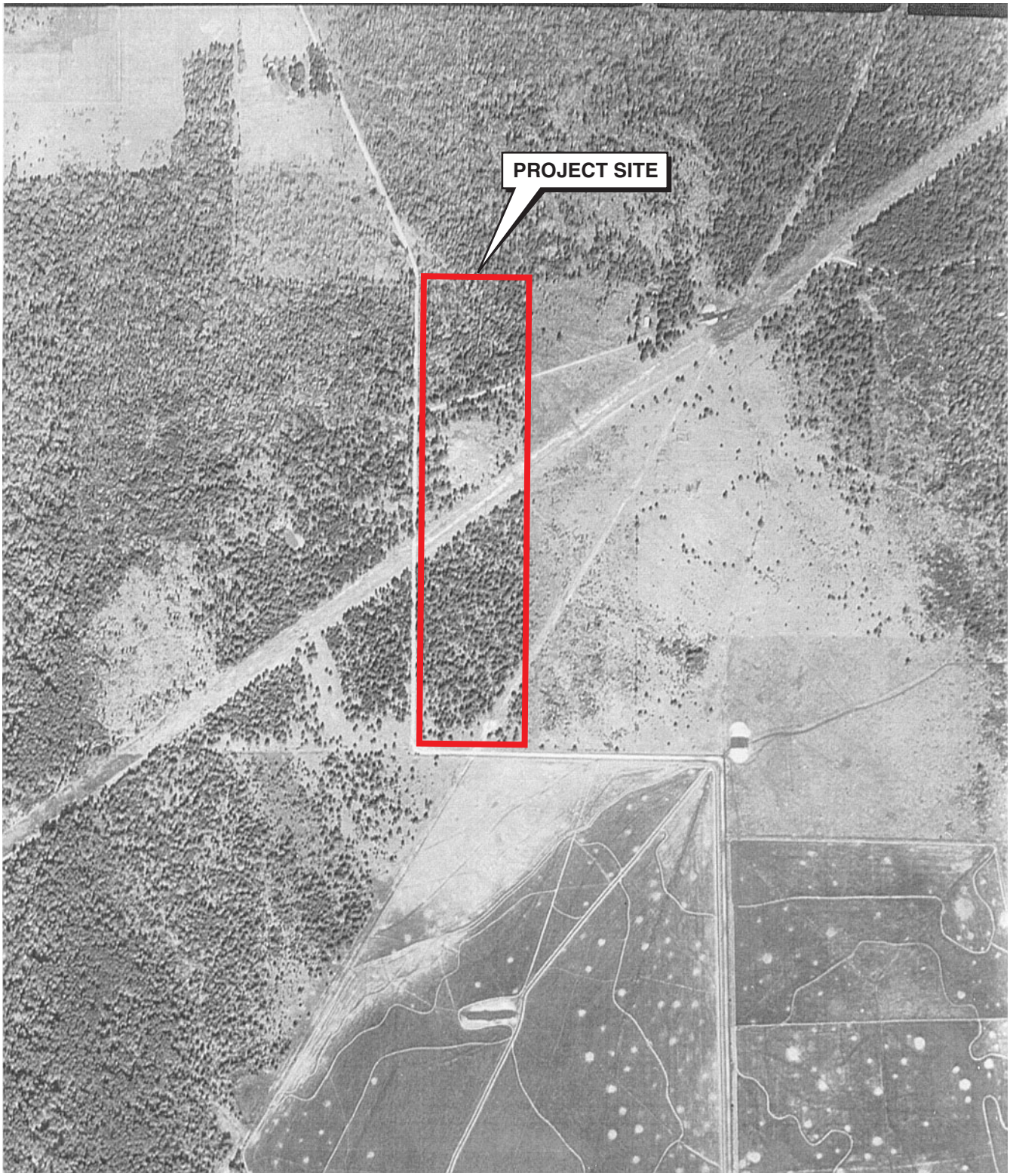
Exhibit 7

FLOOD INSURANCE RATE MAP
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit7.ai

Exhibit 8

Historic Aerial Photographs



north

0 500 1000 1500 feet

Source: United States Geological Survey

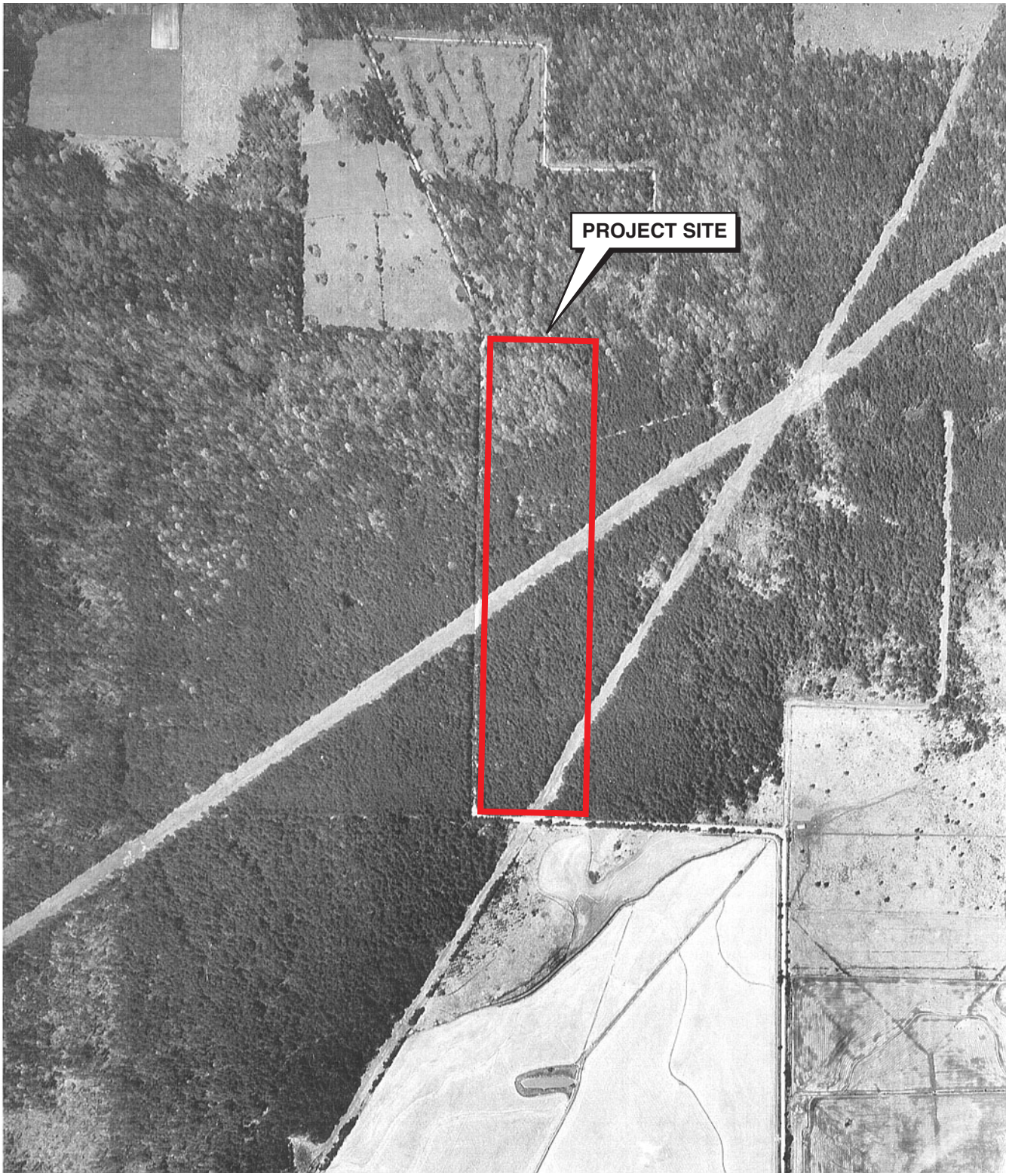
PBSJ

• Engineering
• Environmental Consulting
• Surveying

Exhibit 8-1

1957 AERIAL PHOTOGRAPH
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit8-1.ai



north

0 500 1000 1500 feet

Source: United States Geological Survey

PBSJ

• Engineering
• Environmental Consulting
• Surveying

Exhibit 8-2

1976 AERIAL PHOTOGRAPH
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit8-2.ai

north

0 500 1000 1500 feet

Source: Texas Department of Transportation

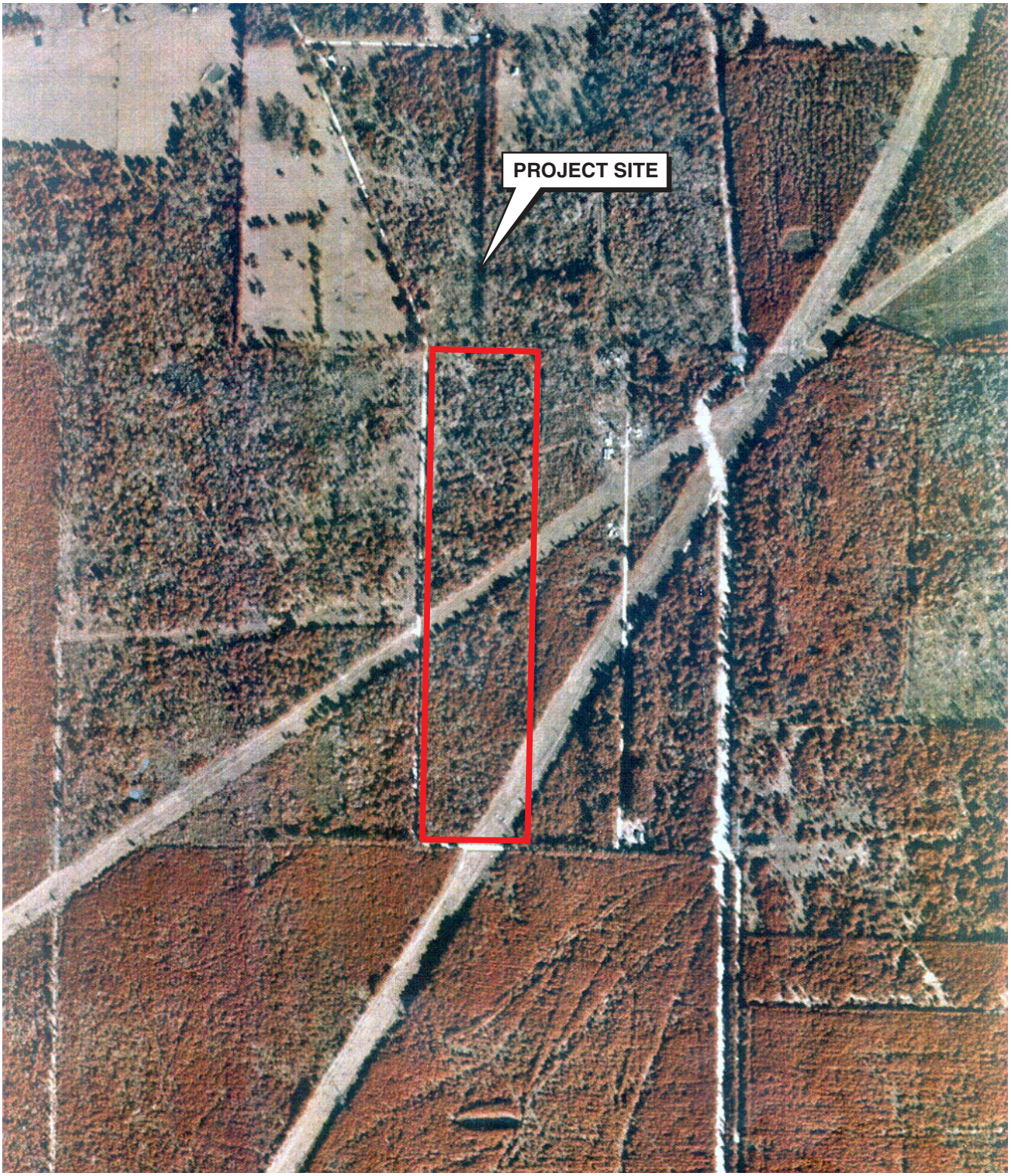
PBSJ

• Engineering
• Environmental Consulting
• Surveying

Exhibit 8-3

1988 AERIAL PHOTOGRAPH
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit8-3.ai



north

0 500 1000 1500 feet

Source: United States Geological Survey

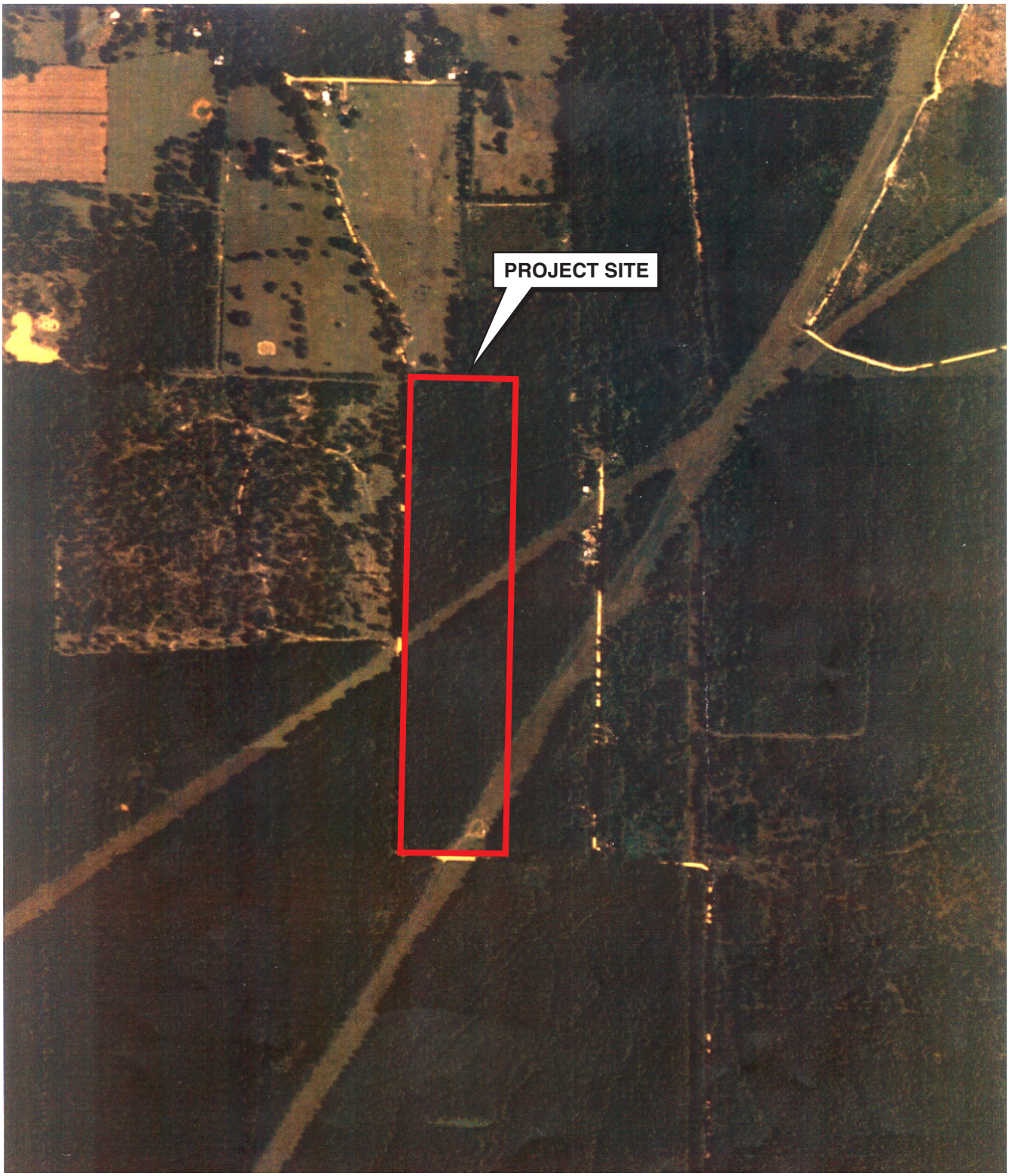
PBSJ

• Engineering
• Environmental Consulting
• Surveying

Exhibit 8-4

1995 AERIAL PHOTOGRAPH
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit8-4.ai



north

0 500 1000 1500 feet

Source: NAIP

PBSJ

• Engineering
• Environmental Consulting
• Surveying

Exhibit 8-5

2005 AERIAL PHOTOGRAPH
PROPOSED ETEC POWER PLANT
SAN JACINTO COUNTY, TEXAS

I:\projects\hc1\etec\441877\cad\exhibit8-5.ai

Exhibit 9

Site Photographs

Photo 1 - View of Pelican Road located along the south side of subject property, facing west.

Photo 2 - View northeast from Pelican Road of natural gas pipeline easement operated by Kinder Morgan Pipeline, Inc.

I:\projects\hc1\etec\441877\cad\photo1-2.ai

Photo 3 - Eastern (fenced) property boundary at Kinder Morgan pipeline easement, facing north.

Photo 4 - View southwest from east side of property of natural gas pipeline easement operated by Tennessee Natural Gas Pipeline Company.

Photo 5 - Eastern (fenced) property boundary at Tennessee Natural Gas pipeline easement, facing north.

Photo 6 - View west/southwest from east side of property of overhead electrical distribution line located along Bone Way Lane.

Photo 7 - View from northeast corner of subject property, facing south.
Small clearing to the right is about one to two acres in total area.

Photo 8 - View from northwest corner of subject property, facing south.
Pelican Road is located to the right adjacent to overhead power line.

Photo 9 - Opposite view along Pelican Road from Bone Way Lane, facing north.

Photo 10 - Small stock pond located near former oil exploration (dry hole) area, facing northeast.

Photo 11 - View north from Tennessee Natural Gas pipeline easement of several discarded truck tires located near center of subject property.

Photo 12 - Close-up view of partially burned, discarded truck tires, facing west.

Photo 13 - View of wooded area located in northeast portion of subject property.

Photo 14 - View from southwest corner of subject property, facing north. Pelican Road is on the left.

Exhibit 10

Cultural Resources Survey Report

Document No. 070115
PBS&J Job No. 441877

A CULTURAL RESOURCES SURVEY OF THE PROPOSED EAST TEXAS ELECTRIC COOPERATIVE POWER PLANT SITE SAN JACINTO COUNTY, TEXAS

Prepared for:

East Texas Electric Cooperative/
GDS Associates, Inc.
919 Congress Avenue
Austin, Texas 78701

Prepared by:

PBS&J
6504 Bridge Point Parkway
Suite 200
Austin, Texas 78730

Principal Investigator:
Michael A. Nash, M.A.

Report Author:
Andrea Stahman, M.A.

November 2007

Contents

Page

Abstract iii
I. INTRODUCTION 1
II. METHODOLOGY 3
III. RESULTS 5
IV. CONCLUSIONS AND RECOMMENDATIONS 7
REFERENCES CITED 8

Figures

1 Project Location Map 2
2 Locations of Shovel Tests and Forested Wetland 4

Abstract

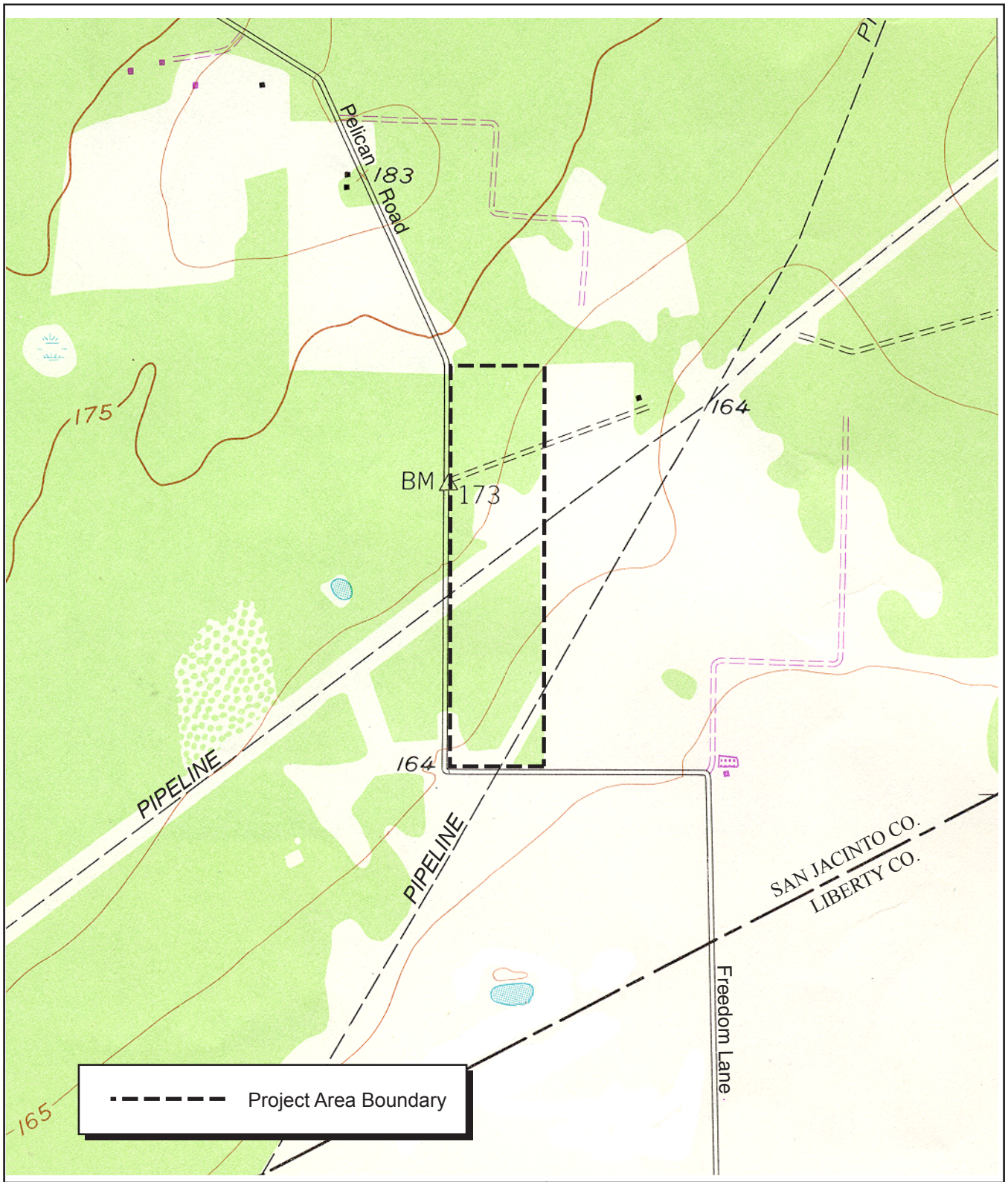
PBS&J has completed cultural resources survey of a 42.25-acre tract in San Jacinto County, Texas. The survey was conducted at the request of East Texas Electric Cooperative. The project area is proposed for future construction of a power plant. The Texas Historical Commission's survey standards for numbers of shovel tests was not met due to the low potential for buried deposits within the project area based on the distance of the upland setting from fresh water, the presence of a forested seasonal wetland in much of the area, and subsurface disturbances from two pipeline rights of way. In total, 16 shovel tests were excavated. No cultural resources sites were located and no artifacts were collected. Field records including photographs will be curated at the Texas Archeological Research Laboratory. Cultural resource clearance is recommended for the project.

I. INTRODUCTION

On May 16, 2007, PBS&J conducted a cultural resources survey of a 42.25-acre (17.10-hectare) tract in southeastern San Jacinto County, Texas. The approximate center of the project area is located along Pelican Road, approximately 2.5 kilometers (km) south of the intersection of Pelican Road and County Road 2914 near Shepherd, Texas (Figure 1). The survey was conducted at the request of East Texas Electric Cooperative prior to proposed construction of a power plant. The purpose of the investigation was to locate, describe, document, and assess all cultural resources that would be affected by the proposed project. The investigation included a site records search, a review of historic maps and aerial photographs, an informal interview with current landowner Burl Thomas, and an intensive pedestrian survey with limited subsurface investigation of the project area. The work was conducted by PBS&J archeologists Andrea Stahman and Brian Farabough. Andrea Stahman served as the primary author of this report of investigations under the direction of Principal Investigator Michael Nash.

This study was performed in compliance with the Antiquities Code of Texas (Title 9, Chapter 191, Texas Natural Resources Code of 1977) and other appropriate cultural resources legislation and guidelines, as well as the guidelines set forth by the Register of Professional Archaeologists and the Council of Texas Archeologists.

PBS&J has chosen to detail the investigation using the suggested categories and content of a Short Report as outlined in the Council of Texas Archeologists Guidelines. Environmental and cultural backgrounds of the project area are not presented in this report.



north

0 500 1000 meters

0 2000 4000 feet

Base Map: USGS 7.5' Quadrangle; Wescott, Texas

PBSJ

• Engineering
• Environmental Consulting
• Surveying

Figure 1

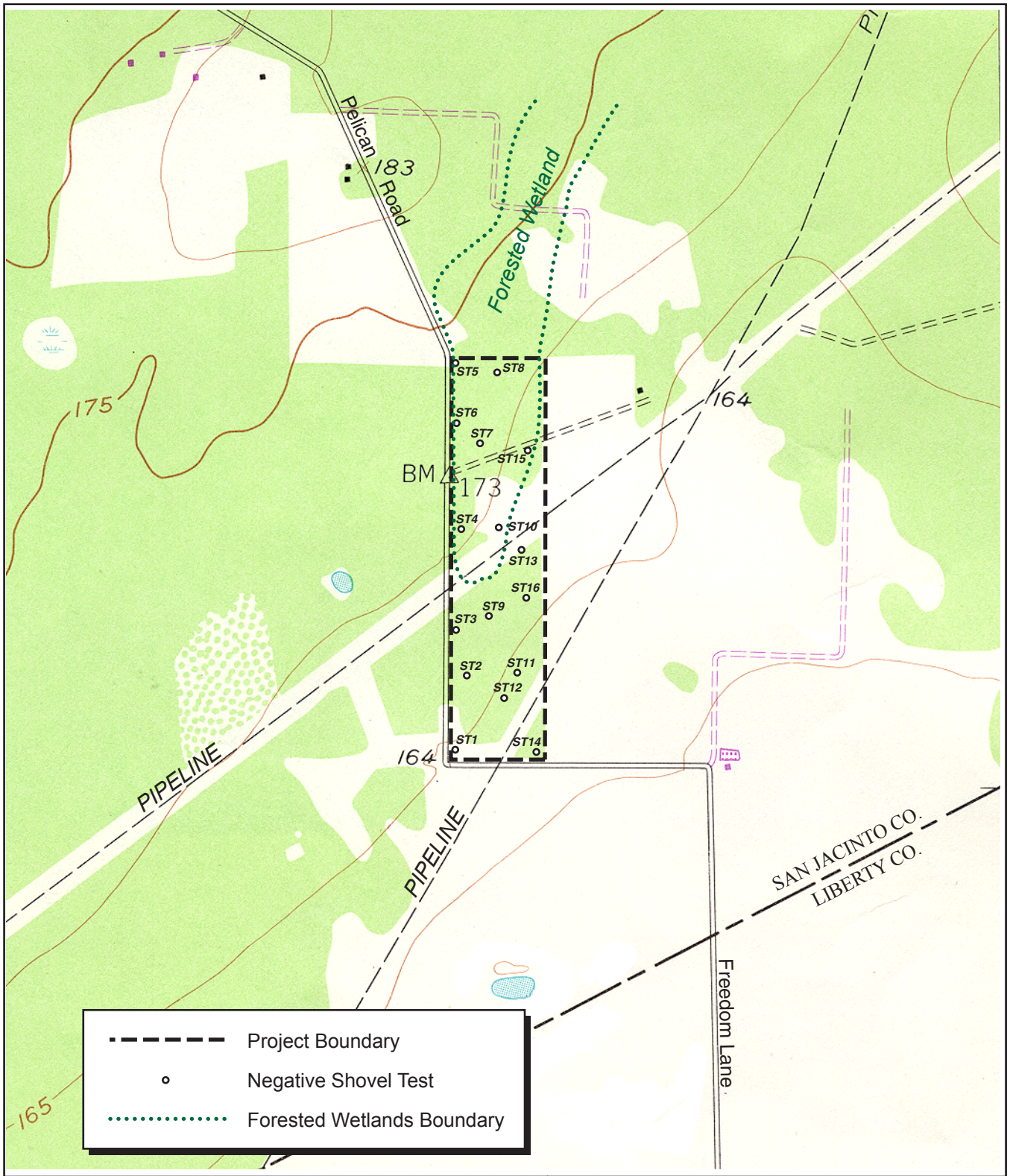
PROJECT LOCATION MAP

File: I:\projects\he1\clients\etec\441877\cad\figure1.ai

II. METHODOLOGY

Prior to the field investigation, PBS&J conducted a records search at the Texas Archeological Research Laboratory and online via the restricted Texas Sites Atlas on May 10, 2007, in order to identify any previous cultural resources investigations and/or previously recorded sites within 1.5 km of the project area. This search included all recorded cultural resources sites as well any sites listed on or eligible for inclusion in the National Register of Historic Places or designated as State Archeological Landmarks.

PBS&J conducted a 100 percent survey of the project area utilizing parallel pedestrian transects spaced approximately 30 meters (m) apart. Shovel tests were placed judgmentally in areas where surface visibility was limited and/or where the potential for buried deposits was high. Much of the project area, however, was considered to possess low potential for buried cultural resources due to the upland location far from sources of fresh water, the characterization of much of the northern half of the project area as a forested seasonal wetland, and the presence of two areas of significant subsurface disturbance due to previous clearing and excavation for two buried pipelines. As a result, only 16 shovel tests were excavated (Figure 2). Each shovel test was excavated in 10-centimeter (cm) levels to a depth when clearly sterile substrates were encountered or a maximum depth of 1 m.



north

0 500 1000 meters

0 2000 4000 feet

Base Map: USGS 7.5' Quadrangle; Wescott, Texas

PBSJ

• Engineering
• Environmental Consulting
• Surveying

Figure 2

LOCATIONS OF SHOVEL TESTS AND FORESTED WETLAND

File: I:\projects\he1\clients\etec\441877\cad\figure2.ai

III. RESULTS

Review of information from the restricted Texas Sites Atlas indicates that no previous archeological sites or cultural resource surveys have been recorded within 1.5 km of the project area. The nearest previously recorded archeological site is the Kelly site (41LB39), located approximately 9 km east-southeast of the project area. The Kelly site was recorded and excavated in 1977 by personnel affiliated with Southern Methodist University during investigations in conjunction with the Trinity River Project and is defined as a prehistoric campsite dating to the Late Prehistoric period (Site Card accessed via Texas Sites Atlas).

A review of 40 historic maps of the area via the online Texas Historic Overlay Project and a series of historic aerial photographs of the area revealed no structures within the project area (U.S. Geological Survey (USGS) 1957, 1976, 1995; Texas Department of Transportation 1988). One dirt road connecting what appears to be a residential structure to the east of the project area with Pelican Road was noted on the 1958 Westcott USGS quadrangle map. No other roads through the project area were noted on any additional historic maps. Aerial photos show the southern half of the project area was largely cleared of timber between 1976 and 1988. A large patch near the center of the parcel was also cleared sometime before 1957. The pine forest has since been replenished to its current vegetated state.

The current property owner, Burl Thomas, stated that he began leasing the property for raising cattle between 1991 and 1993 from Wanda King, daughter of the prior owner, Overton Howard. To Mr. Thomas's knowledge, Ms. King used the property for growing timber. Mr. Thomas purchased the property in 1998 and has continued to raise cattle here. For this purpose, he excavated two small stock ponds near the center of the property. He further stated that a steel pipe about 2 inches in diameter in the vicinity of his stock ponds may be evidence of previous oil exploration on the property (Thomas 2007).

Topographically, the bulk of the project area is situated on a nearly level upland ridge. The area can be described as a broad upland terrace of Big Creek, a perennial stream, located about 12 km to the northeast. The nearest stream is known as Marsh Branch, a tributary of Tarkington Bayou, and is located approximately 2.5 km south of the survey area. Although no drainages were observed within the project area, much of the northern half is characterized as a forested seasonal wetland where several small, shallow, brackish ponds were observed.

According to the 1983 San Jacinto and Polk County soil survey, the project area is comprised of Kirbyville fine sandy loam (0 to 2 percent slopes). This soil is found on broad flats that typically contain a few low mounds and is characterized by dark grayish brown to yellowish brown sandy loam overlying a yellowish brown to brownish yellow sandy clay loam subsoil. The soil was formed in sediment deposited during the Pleistocene (McEwen et al. 1983).

The cultural resources survey was conducted on May 16, 2007, by PBS&J archeologists Andrea Stahman and Brian Farabough. Vegetation of the project area consisted primarily of loblolly pine forest with

pinehill bluestem, Virginia creeper, yaupon, and red maple. Greenbrier, blackberry, and dewberry were also encountered in the forested wetland that characterizes the northern half of the project area. Land use at the time of survey was pastoral. Surface visibility in the project area ranged from about 10 to 40 percent, averaging about 20 percent. During the current survey effort, 16 shovel tests were excavated to investigate the potential for buried cultural deposits. Each shovel test exhibited 40 to 60 cm of pale brown sandy loam with lignite and hematite gravels intermixed overlying a pale brown sandy clay loam. All but one shovel test was terminated at 100 cm below ground surface. Clay was encountered in the remaining shovel test at a depth of 84 cm below surface. No artifacts or chert raw material cobbles were located. No cultural resource sites were recorded.

IV. CONCLUSIONS AND RECOMMENDATIONS

No cultural resources were located during PBS&J's investigation of the project area. The Texas Historical Commission's survey standards for numbers of shovel tests was not met due to the low potential for buried deposits within the project area based on the distance of the upland setting from fresh water, the presence of a forested seasonal wetland in much of the area, and subsurface disturbances from two pipeline rights of way. Based on the results of the pedestrian survey and shovel testing and the overall low potential of cultural sites in this location due to the reasons presented, it is unlikely that any significant undiscovered cultural resources are present in the project area. Cultural resource clearance is recommended for this project.

If during construction previously unrecorded cultural resources are encountered, a qualified archeologist should be contacted to assess the remains and provide recommendations as to how to manage the site under the state's Historic Preservation Plan.

REFERENCES CITED

McEwen, Harry, Kirby Smith, and Jesse D. Deshotels

1983 *Soil Survey of Polk and San Jacinto Counties, Texas*. U.S. Department of Agriculture, Soil Conservation Service, in cooperation with U.S. Forest Service and the Texas Agricultural Experiment Station.

Texas Department of Transportation

1988 Aerial photograph, San Jacinto County, Texas. On file at the TelALL Corporation, Austin, Texas.

Thomas, Burl

2007 Personal communication with Jim Killian of PBS&J.

U.S. Geological Survey (USGS)

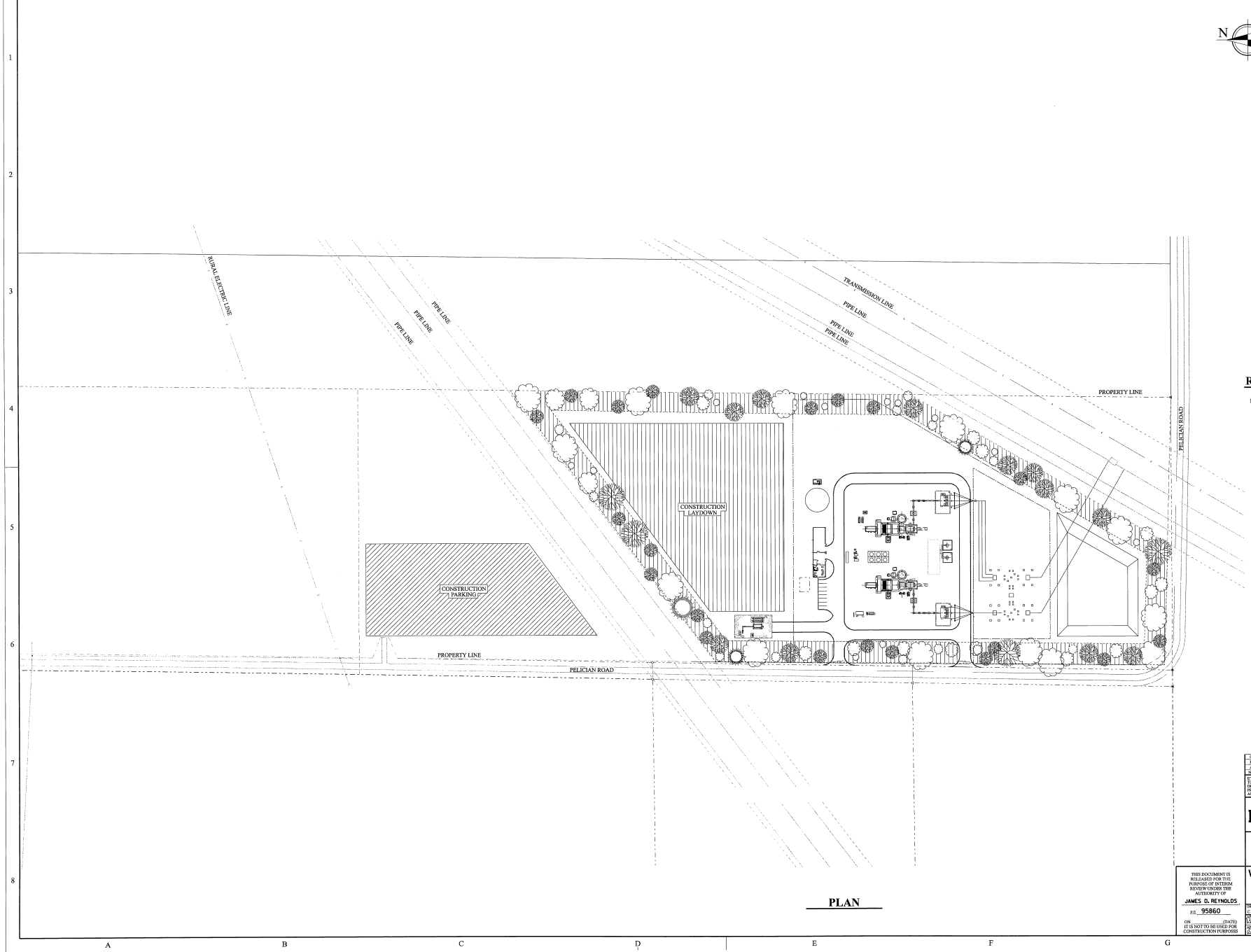
1957 Aerial photograph, San Jacinto County, Texas. On file at the TelALL Corporation, Austin, Texas.

1958 Westcott, Texas, 7.5-minute Quadrangle Map. U.S. Geological Survey, Denver, Colorado.

1976 Aerial photograph, San Jacinto County, Texas. On file at the TelALL Corporation, Austin, Texas.

1995 Aerial photograph, San Jacinto County, Texas. On file at the TelALL Corporation, Austin, Texas.

ATTACHMENT D



REFERENCE DRAWINGS

1. WARREN RELOCATION PROJECT - JACINTO STATION SITE RELATED WORK - GENERAL ARRANGEMENT D013261-SRWL00001 SH 01

PLAN

NO	REVISIONS	DATE	DRWN	CHK	ENGR	APPR
C	REV ADMIN, ADD POND, RELOCATED FIRE PUMPERS	091107	CLJ	RDR	SEL	MK
B	REV PLANT LOCATION	091107	CLJ	RDR		
A	ISSUE FOR COMMENT	091107	CLJ	RDR		

UTILITY ENGINEERING CORPORATION (UE) RETAINS ALL RIGHTS, TITLE AND INTEREST, IN AND TO ALL INFORMATION CONTAINED HEREIN DEVELOPED BY OR IN UE'S POSSESSION. THESE PLANS AND SPECIFICATIONS, OR ANY PART THEREOF, BE REPRODUCED OR REUSED OR RELIED UPON FOR THE PREPARATION OF OR APPROVAL APPARATUS OR FOR ANY OTHER PURPOSE, EXCEPT AS EXPRESSLY AUTHORIZED IN WRITING BY UE.

East Texas Electric Cooperative Inc.

UTILITY ENGINEERING
HEADQUARTERS
1515 ARAPAHOE ST., TOWER 1, SUITE 900, DENVER, CO 80202-4256
AMARILLO, TEXAS MINNEAPOLIS, MINNESOTA OMAHA, NEBRASKA

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
JAMES D. REYNOLDS
P.E. 95860
ON (DATE)
IT IS NOT TO BE USED FOR CONSTRUCTION PURPOSES

WARREN RELOCATION PROJECT - JACINTO STATION
SITE RELATED WORK
SITE
PLAN

DRAWN C.JOHNSON	070507	DESIGNED	9-26-07	CHECKED	9-27-07
APPROVED	9-28-07	CUSTOMER/OWNER			
APPROVED					

DRAWING NUMBER **D013261- SRWL00001** SHEET **02** REV **C**

ATTACHMENT E

BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

SAN JACINTO COUNTY PEAKING FACILITY

I. INTRODUCTION

The Texas Clean Air Act (TCAA) and 30 Texas Administrative Code (TAC) 116.111(a)(2)(C) require proposed facilities to utilize Best Available Control Technology (BACT), with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facilities. A BACT analysis is being conducted on the proposed San Jacinto County Peaking Facility's simple cycle combustion turbines in accordance with Texas Commission on Environmental Quality's (TCEQ's) draft guidance document Evaluating Best Available Control Technology (BACT) in Air Permit Applications, RG-383, dated April 2001. The analysis considers the technical practicability and economic reasonableness of control options using TCEQ's three-tiered approach. The review continues from one tier to the next, only if required by the applicability of the situation.

In the first tier, controls accepted as BACT in a recent permit review for the same process/industry, can be approved as BACT in a current review if no new technical developments have been made which would justify additional controls as economically or technically reasonable. The review of control technologies under the first tier is relatively straightforward in that technical practicability and economic reasonableness have already been demonstrated by use in other projects.

The second tier takes into account controls which have been accepted as BACT in recent permits for similar streams in a different process/industry. The second tier may require additional research to review cross technology, but an in-depth economic analysis is avoided since economic reasonableness has already been demonstrated by use. This tier of review is necessary only if BACT cannot be determined in the first tier.

The third tier of review is a detailed technical and economic analysis of all control options available for the process being reviewed. Technical practicability aspects include the demonstrated success of the control technology as determined by previous use, an assessment of the technical success of a new technology, and/or the availability and reliability of the proposed control system. Economic reasonableness is determined solely in the cost effectiveness of controlling emissions and does not take into account the effect of control cost on corporate economics. It is evaluated on a dollar per ton ($/ton) basis considering both incremental and total tons controlled. The third tier of review is rarely necessary because technical practicability and economic reasonableness have usually been firmly established by industry practice as identified in the first two tiers.

The TCEQ's three-tiered approach has been characterized by the TCEQ as equivalent to the U.S. Environmental Protection Agency's (USEPA's) top-down BACT review, and relies on frequent TCEQ reviews of very similar processes and reviews of technological developments to establish BACT.

The proposed San Jacinto County Peaking Facility is an electric generating facility that will utilize two new combustion turbines. These combustion turbines will be operated in simple cycle mode and fired solely with pipeline quality natural gas. Emissions from the operation of the simple cycle combustion turbines are a function of natural gas combustion.

The San Jacinto County Peaking Facility will be located in San Jacinto County, an area that is currently classified as attainment for all criteria pollutants. The San Jacinto County Peaking Facility will be one of the 28 named Prevention of Significant Deterioration (PSD) source categories (i.e., fossil fuel-fired steam electric generating facilities greater than 250 MMBtu). The proposed facility is not subject to PSD permitting because the net emissions increase for the proposed facility of at least one pollutant does not exceed the significance level of the New Source Review (NSR) regulated pollutants.

This review is to demonstrate that the proposed facility will utilize BACT, as required for facilities subject to NSR permitting requirements. Emissions subject to review have the potential to be emitted by the simple cycle combustion turbines. The specific pollutants from the combustion of natural gas are identified in the following table.

SUMMARY OF POLLUTANTS FROM NATURAL GAS COMBUSTION

SOURCE DESCRIPTION	APPLICABLE POLLUTANTS
Simple Cycle Combustion Turbines	CO, NO_X, PM/PM_{10}, SO_2, Sulfuric Acid, VOC, and Formaldehyde

To determine technical practicability and economic reasonableness of a BACT proposal, the following questions are to be addressed:

- Has the proposal been demonstrated to work based on actual operation?
- Can the proposal reasonably be expected to work based on technical analysis?
- Is the project cost acceptable to achieve the emission reduction?

In preparing this analysis, it is recognized that more than one methodology of emissions controls may be acceptable from an air quality impacts and a BACT standpoint. Furthermore, no single suite of controls will result in the best level of control for every air contaminant. Because no objective procedure exists for evaluating trade-offs between the different control options, the BACT analysis is considered the most practical and technically demonstrated emissions controls.

II. BACT ANALYSIS

In general, when conducting the BACT analysis, a Tier I approach can be successfully applied in demonstrating that the control technologies and corresponding emission limits for the proposed project are consistent with recent permit reviews.

One reference used to evaluate previous BACT determinations for the combustion turbines is EPA's RACT/BACT/LAER Clearinghouse (RBLC). This database can be found on EPA's Technology Transfer Network website at http://www.epa.gov/ttn/catc. A

query was conducted of the RBLC database for natural gas-fired simple cycle combustion turbines. Due to the large number of facilities in the EPA database, the search was restricted to the most recently issued permits for the period 2003-2007. A copy of the query for the natural gas-fired simple cycle combustion turbines is provided as Attachment A.

Additionally, TCEQ's Current Best Available Control Technology (BACT) Requirements - Turbines, dated October 2006, has been reviewed to determine potentially applicable control technology alternatives. A copy of this document is provided as Attachment B. A review has been conducted of the TCEQ's Gas Turbine Permit List (found on TCEQ's webpage, http://www.tceq.state.tx.us/assets/public/permitting/air/memos/turbine_lst.pdf) and the TCEQ's NSR Document Server to identify the potential applicable control requirements for recently permitted processes/industries similar to the Project. The latest TCEQ Gas Turbine Permit List, updated 10/29/2007, is provided for reference as Attachment C.

SIMPLE CYCLE COMBUSTION TURBINES

Emission factors proposed as BACT for the simple cycle combustion turbines and the respective control technologies proposed to achieve these limits are summarized in the following table and are discussed in the following paragraphs.

SUMMARY OF PROPOSED BACT FOR SIMPLE CYCLE COMBUSTION TURBINES

POLLUTANT	BACT EMISSION RATE[1]	DESCRIPTION OF CONTROL TECHNOLOGY
CO	25 ppmvd @ 15% O_2	Good combustion practice
NO_X	9 ppmvd @ 15% O_2	Dry low-NO_X combustors
PM/PM_{10} [2]	10 lbs/hr	Good combustion practice
SO_2	0.2 grains/100 scf (fuel standard)	Use of pipeline quality natural gas as fuel
H_2SO_4	0.2 grains/100 scf (fuel standard)	Use of pipeline quality natural gas as fuel
VOC[3]	≤2.0 ppmvd @ 15% O_2	Good combustion practice
Formaldehyde	N/A	Good combustion practice

[1] Based on an annual average from the stack at 100% turbine load.

[2] GE estimated performance data lists particulates = 5 lbs/hr (PM_{10} front-half filterable only). TCEQ requires that PM_{10} include both front-half and back-half condensables. Typically GE represents that back-half equals front-half guarantee.

[3] GE estimated performance data lists UHC = 7 ppmvw. Conservative estimate that VOC component of UHC is less than 30%.

CARBON MONOXIDE (CO)

The formation of CO during combustion is the result of incomplete combustion of fuel. Several conditions can lead to incomplete combustion including insufficient oxygen availability, poor air/fuel mixing, cold wall flame quenching, reduced combustion temperature, decreased combustion residence time, and load reduction. The design characteristics of a modern combustion turbine combustor result in highly efficient combustion. With state-of-the-art design and good combustion practices, CO emissions can be minimized.

Emission Reduction Option and Performance

Good combustion practices are a demonstrated and technically feasible control measure for CO reduction. Good combustion practices are based on proper design and operation of the gas turbines at high combustion efficiency, thereby reducing products of incomplete combustion.

Select BACT

San Jacinto County Peaking Facility is proposing to utilize good combustion practices to minimize CO emissions from the combustion turbines. Utilizing this approach, an emission level of 25 ppmvd corrected to 15% oxygen at the stack for CO on an annual average basis can be achieved across the range of normal operating conditions (i.e., 50% to 100% turbine load). The proposed project is utilizing good combustion practice technology as BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, the technology and emission rate are consistent with recent permit actions in Texas. The proposed emission level is consistent with that identified in the "Current BACT Requirement" for natural gas-fired simple cycle combustion turbines identified on the TCEQ's BACT Guidelines for Combustion Sources.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Good combustion practices are, and remain, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

NITROGEN OXIDES (NO_X)

The formation of NO_X is determined by the interaction of chemical and physical process occurring within the unit combustion chamber. There are two principal forms of NO_X designated as "thermal" NO_X and "fuel" NO_X. Thermal NO_X formation is the result of the oxidation of atmospheric nitrogen contained in the combustion air in the high-temperature, post-flame region of the combustion zone. The major factors influencing thermal NO_X formation are temperature, concentrations of nitrogen and oxygen in the combustion air, and residence time within the combustion zone. Fuel NO_X is formed by the oxidation of fuel-bound nitrogen. During combustion, the nitrogen content of the fuel is liberated and then participates in NO_X reactions in the combustion chamber.

Natural gas is the fuel to be fired in the turbines, and typically natural gas contains negligible amounts of fuel-bound nitrogen; therefore, all of the NO_X formed during the combustion of natural gas is due to atmospheric nitrogen and fuel treatment is not an applicable technology.

Reductions in NO_X emissions can generally be achieved using either combustion controls or flue gas treatment. Dry-low NO_X (DLN) combustors and water/steam injection for the combustion turbines are examples of combustion controls.

Emission Reduction Option and Performance

A review of the RBLC database and similar TCEQ recently permitted facilities has identified water injection and DLN combustors as potentially applicable control technology alternatives for BACT for NO_X.

Water injection and steam injection are the most common NO_X control technologies for combustion turbines. Water injection involves introducing water directly into the combustion chamber of the turbine, thus lowering the flame temperature, a major factor in thermal NO_X formation. This is accomplished by injection through separate annular spaces in the fuel manifold. A water injection system typically consists of a water treatment system, pumps, water metering valves and instrumentation, turbine-mounted injection nozzles, and the necessary interconnecting piping. Water purity is essential to prevent or minimize corrosion and/or the formation of deposits in the hot section of the turbine. Injection of water during gas fired operation is generally capable of reducing full load exhaust gas NO_X emissions to approximately 25 ppmvd corrected to 15% oxygen. Since water injection alone results in NO_X emissions which are higher than the TCEQ current BACT requirements (25 ppmvd vs. 15 ppmvd), water injection will not be considered as a viable NO_X control method for the Project and will not be evaluated further.

Increasing the air to fuel ratio in the combustion chamber and staging the introduction of the air to the combustion zone results in lower combustion temperatures (a major factor in NO_X formation), thus lower NO_X formation. DLN technology is regarded as a major advance over water injection technologies. It limits NO_X emission through combustion designs which promote a “lean-premixed” flame in the combustion chamber. In this manner, “staged” or “scheduled” combustion serves to reduce thermal NO_X formation. NO_X emission from the General Electric 7EA can be controlled to 9 ppmvd corrected to 15% oxygen for natural gas firing at all operating conditions (i.e., 50% to 100% load). Since DLN technology alone results in NO_X emissions which are consistent with the TCEQ current BACT requirements (9 ppmvd vs. 15 ppmvd), DLN technology is considered as a viable stand alone NO_X control method for the Project.

Select BACT

San Jacinto County Peaking Facility is proposing to utilize DLN combustors to minimize NO_X emissions from the combustion turbines. Utilizing this approach, an emission level of 9 ppmvd corrected to 15% oxygen at the stack for NO_X on an annual average basis can be achieved under normal operating conditions (i.e., 50% to 100% turbine load). San Jacinto County Peaking Facility is proposing using DLN combustors as BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, the

technology and emission rate is consistent with recent permit actions in Texas. The proposed emission level is consistent with that identified in the "Current BACT Requirement" for Turbines outlined on the TCEQ's BACT Guidelines for Combustion Sources web page.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. DLN combustor installation is, and remains, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

PARTICULATE MATTER (PM/PM_{10})

Particulate matter emissions from natural gas-fired combustion turbines are low because of high combustion efficiencies and the use of a clean fuel, natural gas. For the purposes of this analysis, all of the particulate matter from the proposed combustion turbine is assumed to be PM_{10}.

Emission Reduction Option and Performance

A review of the RBLC database and similar TCEQ recently permitted facilities has identified natural gas combustion and good combustion control practices as potentially applicable control technology alternatives for BACT for PM_{10}.

Good combustion practices include proper design, performing recommended preventative maintenance, and proper facility operation. These practices promote efficient combustion and, thus, reduce the formation of PM_{10} in turbines. Applying this technology to the Project, the General Electric Frame 7EA turbine can achieve a PM_{10} emission rate of 10.0 lbs/hr within the normal operating range.

Select BACT

San Jacinto County Peaking Facility is proposing to use good combustion practices coupled with firing pipeline quality natural gas as BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, this approach is consistent with recent permit actions in Texas.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Good combustion practices along with firing pipeline quality natural gas are, and remain, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

SULFUR DIOXIDE (SO_2)

Emissions of SO_2 are exclusively the result of residual sulfur, which is contained in the fuel, and is then oxidized in the combustion process and emitted as SO_2. The emissions of SO_2 from natural gas-fired turbines are low because pipeline quality natural gas

typically has low levels of sulfur; however, sulfur-containing odorants are added to natural gas for detecting leaks, leading to small amounts of SO_2 emissions.

Emission Reduction Option and Performance

A review of the RBLC database and similar TCEQ recently permitted facilities has identified low-sulfur fuel as a potentially applicable control technology alternative for BACT for SO_2.

Select BACT

San Jacinto County Peaking Facility is proposing to fire the combustion turbines on pipeline quality natural gas as BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, the technology and emission rate is consistent with recent permit actions in Texas.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Firing of pipeline quality natural gas is, and remains, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

SULFURIC ACID MIST (H_2SO_4)

Sulfur acid mist (H_2SO_4) formation is a function of the sulfur in the fuel and sulfur oxides in the exhaust gas. The sulfur oxides concentration in the exhaust gas is a function of the sulfur content of the fuel; therefore, the same analysis for SO_2 applies. See the BACT discussion for SO_2.

VOLATILE ORGANIC COMPOUNDS (VOCs)

VOC emissions result from incomplete combustion of the heavier molecular weight components of the natural gas fuel. In addition, VOC emissions are produced to some degree by the reforming of hydrocarbon molecules in the combustion zone.

Emission Reduction Option and Performance

A review of the RBLC database and similar TCEQ recently permitted facilities has identified good combustion control practices as potentially applicable control technology alternatives for BACT for VOC. Good combustion practices include proper design, performing recommended preventative maintenance, and proper facility operation. These practices promote efficient combustion and, thus, reduce the production of VOC from turbines.

Select BACT

San Jacinto County Peaking Facility is proposing to utilize good combustion practices to minimize VOC emissions from the combustion turbines. Utilizing this approach, an emission level of equal to or less than 2.0 ppmvd corrected to 15% oxygen at the stack

for VOC on an annual average basis can be achieved across the normal operating range (i.e., 50% to 100% turbine load).

Consequently, the proposed project is utilizing good combustion practice technology is BACT. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, the technology and emission rate is consistent with recent permit actions in Texas. The proposed emission level is consistent with that identified in the "Current BACT Requirement" for Turbines posted on the TCEQ's BACT Guidelines for Combustion Sources web page.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Good combustion practices remain the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

FORMALDEHYDE

The formation of formaldehyde emissions from natural gas-fired combustion turbines is low because of high combustion temperatures. The design characteristics of a modern combustion turbine combustor result in highly efficient combustion. With state-of-the-art design and good combustion practices formaldehyde emissions can be minimized.

Emission Reduction Option and Performance

Good combustion practices are a demonstrated and technically feasible control measure for formaldehyde reduction. Good combustion practices are based on proper design and operation of the gas turbines at high combustion efficiency, thereby reducing products of incomplete combustion.

Select BACT

San Jacinto County Peaking Facility is proposing to utilize good combustion practices to minimize formaldehyde emissions from the combustion turbines. This technology is consistent with the technology selected on other recent natural gas-fired simple cycle combustion turbine projects listed in the RBLC database. Additionally, this approach is consistent with recent permit actions in Texas.

In accordance with the TCEQ tiered BACT analysis approach, a Tier I evaluation is adequate if there are no new technical developments and the emission reduction performance levels accepted as BACT in recent permit reviews for the same process continue to be acceptable. Good combustion practices along with firing pipeline quality natural gas are, and remain, the preferred control technology in recent permit reviews for natural gas-fired simple cycle combustion turbines.

ATTACHMENT A

USEPA RACT/BACT/LAER

CLEARINGHOUSE DETERMINATIONS

ATTACHMENT B

TCEQ COMBUSTION SOURCES CURRENT BEST

AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS

TURBINES

ATTACHMENT C

TCEQ GAS TURBINE PERMIT LIST

ATTACHMENT A

USEPA RACT/BACT/LAER

CLEARINGHOUSE DETERMINATIONS

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
AL-0208	EXXON MOBILE BAY -- NORTHWEST GULF FIELD	MOBILE	AL	4	503-0013-X00	2/1/2005	TURBINE, SIMPLE CYCLE	NATURAL GAS	6000	bhp	SOLAR TAURUS 605-T7802	Carbon Monoxide		50	PPM @ 15% O2		BACT-PSD		50	PPM @ 15% O2		
AL-0209	EXXON MOBILE - - MOBILE BAY - BON SECURE BAY FIELD	MOBILE	AL	4	503-0012-X005	2/1/2005	TURBINE, SIMPLE CYCLE	NATURAL GAS	3600	bhp	SOLAR CENTAUR 40S-T4702	Carbon Monoxide		50	PPM @ 15% O2		BACT-PSD		50	PPM @ 15% O2		
MO-0067	SOUTH HARPER PEAKING FACILITY	CASS	MO	7	122004-017	12/29/2004	TURBINES, SIMPLE CYCLE, NATURAL GAS, (3)	NATURAL GAS	1455	mmBtu/h	THE INDIVIDUAL TURBINE UNITS HAVE A MHDR HEAT INPUT OF 1,455 MMBTU/H EACH.	Carbon Monoxide	GOOD COMBUSTION PRACTICES	25	PPMVD	1 HOUR ROLLING AVG.	BACT-PSD		25	PPM @15% O2		
OK-0104	HORSEHOE LAKE GENERATING STATION	OKLAHOMA	OK	6	97-137-C (M-3) PSD	11/23/2004	TURBINE, SIMPLE CYCLE, (2)	NATURAL GAS	45	mw	THROUGHPUT FOR EACH	Carbon Monoxide	GOOD COMBUSTION PRACTICES	62.5	PPMVD @15% O2		BACT-PSD		62.5	PPM @ 15% O2		
OH-0291	OHIO EDISON CO.-WEST LORAIN PLANT	LORAIN	OH	5	02-13376	11/17/2004	SIMPLE CYCLE COMBUSTION TURBINES (5) W/ NATURAL GAS	NATURAL GAS, FUEL OIL, KEROSEN E	85	MW	ALL 5 TURBINES TOGETHER ARE RESTRICTED TO 27,155 HOURS/ROLLING 12-MONTHS OF FIRING NATURAL GAS, IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE FORMALDEHYDE LIMIT.	Carbon Monoxide		83	LB/H	EACH TURBINE, REGARDLES S OF FUEL	BACT-PSD				NOT AVAILABLE	
FL-0261	ARVAH B. HOPKINS GENERATING STATION	LEON	FL	4	PSD-FL-343	10/26/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS, (2)	NATURAL GAS	50	mw	HEAT INPUT 445 MMBTU/H (LHV) AT 29 DEGREES F. HOURS OF OPERATION: 5840, 4000 HOURS MAY BE FUEL OIL. GENERAL ELECTRIC LM6000PC SPRINT.	Carbon Monoxide	OXIDATION CATALYST	6	PPMDV @ 15% O2		Other Case-by-Case		6	PPM @ 15% O2		
MN-0053	FAIRBAULT ENERGY PARK	RICE	MN	5	13100071-001	7/15/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS (1)	NATURAL GAS	1663	MMBTU/H	187 MW GROSS MITSUBISHI 501F.	Carbon Monoxide	GOOD COMBUSTION PRACTICES.	10	PPMVD @ 15% 02	3 HOUR AVERAGE	BACT-PSD		10	PPMVD @ 15% 02	3 HOUR AVERAGE	
MN-0052	GREAT RIVER ENERGY LAKEFIELD JUNCTION STATION	MARTIN	MN	5	09100058-003	9/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS	NATURAL GAS	109	MW	modification does not change facility limit.	Carbon Monoxide	GOOD COMBUSTION PRACTICES - OPTIMIZED OPERATION OF GAS TURBINE	25	PPM @ 15% O2		BACT-PSD		25	PPM @ 15% O2		
MN-0052	GREAT RIVER ENERGY LAKEFIELD JUNCTION STATION	MARTIN	MN	5	09100058-003	9/10/2003	NATURAL GAS	109	MW			Carbon Monoxide	GOOD COMBUSTION PRACTICES - OPTIMIZED OPERATION	20	PPM @ 15% O2		BACT-PSD		20	PPM @ 15% O2		
GA-0107	TALBOT ENERGY FACILITY	TALBOT	GA	4	4911-263-0013-P-03-0	6/9/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (6)	NATURAL GAS	108	MW	UNITS ARE SIEMENS WESTINGHOUSE MODEL V84.2 SIMPLE CYCLE TURBINES	Carbon Monoxide	GOOD COMBUSTION PRACTICE	0.019	LB/MMBTU		BACT-PSD		8	PPM @ 15% O2		
KY-0093	LOUISVILLE GAS AND ELECTRIC COMPANY	TRIMBLE	KY	4	V-02-043	6/6/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (6)	NATURAL GAS	160	MW	UNITS ARE GE PG7241(FA) PEAKING UNITS. ADDITIONAL THROUGHPUT: 1763 MMBTU/HR MAXIMUM RATED HEAT INPUT CAPACITY (@ -10 DEGREES F),	Carbon Monoxide	GOOD COMBUSTION PRACTICE	9	PPM @ 15% O2	3-HOUR AVG	BACT-PSD		9	PPM @ 15% O2		CONTINUOUS COMPLIANCE WITH THIS LIMIT SHALL BE DEMONSTRATED BY A CONTINUOUS EMISSION MONITOR (CEM).

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
MS-0057	SMEPA - SILVER CREEK GENERATING	JEFFERSON DAVIS	MS	4	1340-00032	5/29/2003	TURBINE, SIMPLE CYCLE (3)	NATURAL GAS	1109.3	MMBTU/H		Carbon Monoxide	GOOD OPERATING PRACTICES	25	PPMVD @ 15% O2	3-h rolling avg	BACT-PSD		25	PPM @ 15% O2		No other controls were feasible. Additional limit: 234.5 t/yr
FL-0244	FPL MARTIN PLANT	MARTIN COUNTY	FL	4	PSD-FL-327	4/16/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined Cycle Unit 8 consists of 4 gas turbines (170 MW) , 4 HRSG with duct firing, and 1 steam turbine (470 MW). This process entry is for simple cycle operation.	Carbon Monoxide	GOOD COMBUSTION DESIGN AND PRACTICES	8	PPMVD @ 15% O2	CEMS block avg	BACT-PSD		8	PPM @ 15% O2		Additional limit: Stack test, 3-run avg: 7.4 ppmvd @ 15% O2.
FL-0245	FPL MANATEE PLANT - UNIT 3	MANATEE	FL	4	PSD-FL-328 AND 0810010-006-AC	4/15/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined cycle Unit 3 consists of 4 gas turbines (170MW), 4 HRSGs with duct firing, and 1 steam turbine (470MW). This process entry is for simple cycle operation.	Carbon Monoxide	GOOD COMBUSTION DESIGN AND PRACTICES	7.4	PPMVD @ 15% O2	stack test	BACT-PSD		7.4	PPM @ 15% O2		Simple cycle mode emission rates: Normal operation 8 ppmvd@15%O2,24-hr CEMS Simple cycle power augmentation: 12 ppmvd@15% O2,24-CEMS.
IN-0111	DUKE ENERGY VERMILLION STATION	VERMILLION	IN	5	165-10476-00022-4911	3/13/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (8)	NATURAL GAS	80	MW	Throughput for each. Additional throughput: 1272 mmBtu/h for each of the 8 turbines.	Carbon Monoxide	GOOD COMBUSTION PRACTICE	25	PPMVD @ 15% O2		BACT-PSD		25	PPM @ 15% O2		
VA-0263	ODEC - LOUISA FACILITY	LOUISA	VA	3	40989	3/11/2003	TURBINE, SIMPLE CYCLE, (1), NATURAL GAS	NATURAL GAS	1624	MMBTU/H	One GE FA simple cycle turbine.	Carbon Monoxide	GOOD COMBUSTION PRACTICES AND CONTINUOUS EMISSION MONITORING SYSTEM.	9	PPMVD @ 15% O2	3 hr average	N/A		9	PPM @ 15% O2		
VA-0263	ODEC - LOUISA FACILITY	LOUISA	VA	3	40989	3/11/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	901	MMBTU/H	Throughput is for each unit. 4 GE EA SIMPLE CYCLE TURBINES	Carbon Monoxide	GOOD COMBUSTION PRACTICES AND A CONTINUOUS EMISSION MONITORING SYSTEM.	25	PPMVD @ 15% O2	3-hour average	N/A		25	PPM @ 15% O2		4 GE EA simple cycle turbines.
VA-0282	ODEC - LOUISA	LOUSIA	VA	3	VA-40989	3/11/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (1)	NATURAL GAS	1624	MMBTU/H	GE model PG7241S (FA)	Carbon Monoxide	GOOD COMBUSTION PRACTICES	9	PPMVD	3-h avg	BACT-PSD		9	PPM @ 15% O2		
VA-0282	ODEC - LOUISA	LOUSIA	VA	3	VA-40989	3/11/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	901	MMBTU/H	GE model PG7141S (EA)	Carbon Monoxide	GOOD OPERATING PRACTICES	25	PPMVD	3-h avg	BACT-PSD		25	PPM @ 15% O2		
VA-0266	ODEC - MARSH RUN FACILITY	FAUQUIER	VA	3	40996	2/14/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1624	MMBTU/H	Throughput for each unit.	Carbon Monoxide	GOOD COMBUSTION PRACTICES AND CLEAN BURNING FUEL.	9	PPMVD	3 hr av	N/A		9	PPM @ 15% O2	3 HOUR AVERAGE	
VA-0280	ODEC -MARSH	FAUQUIER	VA	3	VA-40996	2/14/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	1624	MMBTU/H	Four GE Model PG7241S (FA) turbines. No. 2 fuel oil used as backup for no more than 512 h/yr (4 turbines, combined), turbines rated at 1,803 mmBtu/h on fuel oil.	Carbon Monoxide	GOOD COMBUSTION PRACTICE	9	PPMVD	natural gas	BACT-PSD		9	PPM @ 15% O2		
MS-0079	WARREN PEAKING POWER FACILITY (WARREN POWER, LLC)	WARREN	MS	4	2780-00099	1/30/2003	TURBINES, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	959.8	mmbtu/h	THERE ARE FOUR IDENTICAL UNITS AT THIS FACILITY (AA-001, AA-002, AA-003, AND AA-004).	Carbon Monoxide	GOOD COMBUSTION PRACTICES	58	LB/H	EACH	BACT-PSD		26.87	PPM @ 15%O2	CALCULATED	STANDARD EMISSION LIMIT IS CALCULATED, NOT PERMIT LIMIT.

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
CA-1095	EI COLTON, LLC	SAN BERNARDINO	CA	9	406065	1/10/2003	GAS TURBINE: SIMPLE CYCLE >= 2 MW AND < 50 MW	NATURAL GAS	48.7	MW	EQUIP: INCLUDES INLET AIR EVAPORATIVE COOLING AND WATER INJECTION, MFR: GENERAL ELECTRIC, TYPE: SIMPLE CYCLE, MODEL: LM6000 (ENHANCED SPRINT), FUNC EQUIP: POWER GENERATION, FUEL_TYPE: , SCHEDULE: CONTINUOUS, H/D: 24, D/W: 7, W/Y: 52, NOTES: PERMIT REQUIREMENTS HERE ARE CONSISTENT WITH CARB GUIDANCE FOR POWER PLANT SITINGS DOCUMENT, WITH THE EXCEPTION THAT THE NOX CONCENTRATION LIMIT AS PROPOSED BY THE APPLICANT IS MORE STRINGENT. INITIAL COMPLIANCE SOURCE TEST REPORT WAS REVIEWED AND ACCEPTED BY THE AQMD ON NOVEMBER 6, 2003. IT IS SIGNIFICANT THAT THE EMISSION LIMITS ARE MET DOWN TO APPROXIMATELY 50% LOAD. SOURCE TEST RESULTS: 6/12-16/03 10/08/03 (VOC) LOAD, MW 43.8 33.8 22.4 PPMVD@ 15%O2 NOX 3.11 3.12 3.27 CO 3.63 3.29 3.19 VOC 1.52 1.61 1.91 NH3 2.3 2.7 2.2	Carbon Monoxide	OXIDATION CATALYST	6	PPMVD @ 15% O2	3-H	BACT-PSD		6	PPM @ 15% O2		
VA-0265	CHICKAHOMINY POWER	CHARLES CITY COUNTY	VA	3	51958	1/10/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1862	MMBTU/H	(4) 501F SIMPLE CYCLE DUAL-FUEL COMBUSTION TURBINES	Carbon Monoxide	CLEAN BURNING FUELS AND GOOD COMBUSTION PRACTICES.	3.7	LB/H	each unit	BACT-PSD		15	PPM @ 15% O2		
VA-0281	CHICKAHOMINY POWER	CHARLES CITY	VA	3	51-036-00017	1/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	182.6	MW	Throughput for each. Heat input of 1,862 MMBtu/h	Carbon Monoxide	CLEAN FUEL, GOOD COMBUSTION CONTROL	81	LB/H	each	BACT-PSD		15	PPM @15% O2		
VA-0269	CINCAP MARTINSVILLE	HENRY	VA	3	21388	1/8/2003	COMBUSTION TURBINES, SIMPLE CYCLE, (4)	NATURAL GAS	82	MW	This is one of 4 units. Additional throughput: 952.8 MMBtu/h	Carbon Monoxide	GOOD COMBUSTION PRACTICES AND CONTINUOUS EMISSION MONITORING SYSTEM.	51.7	LB/H	each unit	Other Case-by-Case		25	PPM @ 15% O2	each unit	
VA-0279	CINCAP - MARTINSVILLE	MARTINSVILLE	VA	3	VA-21388	1/8/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	82	MW	Throughput is for each GE 7EA, Model PG7121 (EA). Additional throughput: 952.8 mmBtu/h.	Carbon Monoxide	GOOD COMBUSTION PRACTICE	51.7	LB/H	each	BACT-PSD		25	PPM @ 15% O2		

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
*FL-0279	TEC/POLK POWER ENERGY STATION	POLK	FL	4	PSD-FL-363	4/28/2006	SIMPLE CYCLE GAS TURBINE	NATURAL GAS	1834	MMBTU/H	TWO GAS COMBUSTION UNITS UNDER CONSTRUCTION(2006). UNITS 4 AND 5. CO-CEMS TO DEMOSTRATE COMPLIANCE WITH EMISSIONS CAP OF 99 TPY FOR BOTH UNITS COMBINED.	Nitrogen Oxides (NOx)	DRY LOW NOX	9	PPMVD @ 15% O2		BACT-PSD					EFFICIENCY 88% FROM 75 PPM.
AL-0208	EXXON MOBILE BAY – NORTHWEST GULF FIELD	MOBILE	AL	4	503-0013-X00	2/1/2005	TURBINE, SIMPLE CYCLE	NATURAL GAS	6000	bhp	SOLAR TAURUS 605-T7802	Nitrogen Oxides (NOx)	SOLONOX COMBUSTOR	25	PPM @ 15%O2		BACT-PSD		25	PPM @ 15% O2		
AL-0209	EXXON MOBILE - - MOBILE BAY - BON SECURE BAY FIELD	MOBILE	AL	4	503-0012-X005	2/1/2005	TURBINE, SIMPLE CYCLE	NATURAL GAS	3600	bhp	SOLAR CENTAUR 40S-T4702	Nitrogen Oxides (NOx)	SOLONOX COMBUSTION	25	PPM @ 15% O2		BACT-PSD		25	PPM @ 15%O2		
MO-0067	SOUTH HARPER PEAKING FACILITY	CASS	MO	7	122004-017	12/29/2004	TURBINES, SIMPLE CYCLE, NATURAL GAS, (3)	NATURAL GAS	1455	mmBtu/h	THE INDIVIDUAL TURBINE UNITS HAVE A MHDR HEAT INPUT OF 1,455 MMBTU/H EACH.	Nitrogen Oxides (NOx)	DRY-LOW NOX BURNERS	15	PPM	3 HOURS ROLLING AVG.		90	15	PPM @ 15% O2		
OH-0291	OHIO EDISON CO.-WEST LORAIN PLANT	LORAIN	OH	5	02-13376	11/17/2004	SIMPLE CYCLE COMBUSTION TURBINES (5) W/ NATURAL GAS	NATURAL GAS, FUEL OIL, KEROSEN E	85	MW	ALL 5 TURBINES TOGETHER ARE RESTRICTED TO 27,155 HOURS/ROLLING 12-MONTHS OF FIRING NATURAL GAS, IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE FORMALDEHYDE LIMIT.	Nitrogen Oxides (NOx)	DRY LOW NOX BURNERS	143	LB/H	EACH TURBINE	BACT-PSD		9	PPM @ 15% O2	ON DRY BASIS, ROLLING 12-MO	ADDITIONAL LIMIT: 15 PPMV AT FULL LOAD AND ON DRY BASIS AT 15% O2, AS 1-HR AVERAGE. ROLLING 12-MO LIMIT IS FOR EACH TURBINE FOR ALL FUELS. CEM FOR NOX AND O2 AND CONTINUOUS FUEL FLOW
FL-0261	ARVAH B. HOPKINS GENERATING STATION	LEON	FL	4	PSD-FL-343	10/26/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS, (2)	NATURAL GAS	50	mw	HEAT INPUT 445 MMBTU/H (LHV) AT 29 DEGREES F. HOURS OF OPERATION: 5840, 4000 HOURS MAY BE FUEL OIL. GENERAL ELECTRIC LM6000PC SPRINT.	Nitrogen Oxides (NOx)	WATER INJECTION SYSTEM, SCR	5	PPMVD @15% O2	24 H AVERAGE	BACT-PSD		5	PPM @ 15% O2		
MN-0053	FAIRBAULT ENERGY PARK	RICE	MN	5	13100071-001	7/15/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS (1)	NATURAL GAS	1663	MMBTU/H	187 MW GROSS MITSUBISHI 501F.	Nitrogen Dioxide (NO2)	DRY LOW-NOX COMBUSTORS OPERATING IN LEAN PREMIX MODE.	25	PPMVD @ 15% 02	3 HOUR AVERAGE	BACT-PSD		25	PPMVD @ 15% 02	3 HOUR AVERAGE	
MN-0052	GREAT RIVER ENERGY LAKEFIELD JUNCTION STATION	MARTIN	MN	5	09100058-003	9/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS	NATURAL GAS	109	MW	modification does not change facility limit.	Nitrogen Oxides (NOx)	DRY LOW NOX, GOOD COMBUSTION PRACTICE	9	PPM @ 15% O2		BACT-PSD		9	PPM @ 15% O2		
MN-0052	GREAT RIVER ENERGY LAKEFIELD JUNCTION STATION	MARTIN	MN	5	09100058-003	9/10/2003	NATURAL GAS	109	MW			Nitrogen Oxides (NOx)	WATER INJECTION GOOD COMBUSTION PRACTICES	42	PPM @ 15% O2		BACT-PSD		42	PPM @ 15% O2		
WA-0312	FREDONIA ENERGY STATION	SKAGIT	WA	10	4-Jan	7/18/2003	TURBINES, SIMPLE CYCLE, (2)	NATURAL GAS	108	MW	Throughput is for both turbines, combined.	Nitrogen Oxides (NOx)	SCR	5	PPMVD		BACT-PSD		5	PPM @ 15% O2		BACT DETERMINED AS TOP FEASIBILITY CASE
GA-0107	TALBOT ENERGY FACILITY	TALBOT	GA	4	4911-263-0013-P-03-0	6/9/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (6)	NATURAL GAS	108	MW	UNITS ARE SIEMENS WESTINGHOUSE MODEL V84.2 SIMPLE CYCLE TURBINES	Nitrogen Oxides (NOx)	DLN COMBUSTORS	12	PPM @ 15% O2		BACT-PSD		12	PPM @ 15% O2		

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
KY-0093	LOUISVILLE GAS AND ELECTRIC COMPANY	TRIMBLE	KY	4	V-02-043	6/6/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (6)	NATURAL GAS	160	MW	UNITS ARE GE PG7241(FA) PEAKING UNITS. ADDITIONAL THROUGHPUT: 1763 MMBTU/HR MAXIMUM RATED HEAT INPUT CAPACITY (@ -10 DEGREES F),	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTORS	12	PPM @ 15% O2	HOURLY AVERAGE	BACT-PSD		9	PPM @ 15% O2		
MS-0057	SMEPA - SILVER CREEK GENERATING	JEFFERSON DAVIS	MS	4	1340-00032	5/29/2003	TURBINE, SIMPLE CYCLE (3)	NATURAL GAS	1109.3	MMBTU/H		Nitrogen Oxides (NOx)	DRY LOW NOX BURNERS	9	PPM @ 15% O2	3-h rolling avg	BACT-PSD		9	PPM @ 15% O2		
FL-0244	FPL MARTIN PLANT	MARTIN COUNTY	FL	4	PSD-FL-327	4/16/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined Cycle Unit 8 consists of 4 gas turbines (170 MW) , 4 HRSG with duct firing, and 1 steam turbine (470 MW). This process entry is for simple cycle operation.	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTORS	9	PPMVD @ 15% O2	CEMS block avg	BACT-PSD		9	PPM @ 15% O2	CEMS block avg	
FL-0245	FPL MANATEE PLANT - UNIT 3	MANATEE	FL	4	PSD-FL-328 AND 0810010-006-AC	4/15/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined cycle Unit 3 consists of 4 gas turbines (170MW), 4 HRSGs with duct firing, and 1 steam turbine (470MW). This process entry is for simple cycle operation.	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTORS	9	PPMVD @ 15% O2		BACT-PSD		9	PPM @ 15% O2		Emission rates for Simple Cycle operation: Standard operation: 9 ppmvd @ 15% O2,24-hr CEMS with Power Augmentation 12 ppmvd @ 15% O2,24-hr CEMS with Peaking 15 ppmvd @ 15% O2, 24-hr CEMS.
IN-0111	DUKE ENERGY VERMILLION STATION	VERMILLION	IN	5	165-10476-00022-4911	3/13/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (8)	NATURAL GAS	80	MW	Throughput for each. Additional throughput: 1272 mmBtu/h for each of the 8 turbines.	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTORS	15	PPMVD @ 15% O2	1 h avg	BACT-PSD		15	PPM @ 15% O2		Total input for all 8 turbines is limited to 20,336 mmcf per rolling 12 month period, equivalent to 426 t/yr. If diesel fuel is fired, natural gas usage will be reduced such that NOx emissions < 732.8 t/yr, for gas and oil firing, combined.
VA-0263	ODEC - LOUISA FACILITY	LOUISA	VA	3	40989	3/11/2003	TURBINE, SIMPLE CYCLE, (1), NATURAL GAS	NATURAL GAS	1624	MMBTU/H	One GE FA simple cycle turbine.	Nitrogen Oxides (NOx)	GOOD COMBUSTION PRACTICES AND A CONTINUOUS EMISSION MONITORING SYSTEM.	10.5	PPMVD @ 15% O2		N/A		10.5	PPM @ 15% O2		
VA-0263	ODEC - LOUISA FACILITY	LOUISA	VA	3	40989	3/11/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	901	MMBTU/H	Throughput is for each unit. 4 GE EA SIMPLE CYCLE TURBINES	Nitrogen Oxides (NOx)	GOOD COMBUSTION PRACTICES AND A CONTINUOUS EMISSION MONITORING SYSTEM.	10.5	PPMVD @ 15% O2	1-hr average	N/A		10.5	PPM @ 15% O2		Emission limits are for each unit. 251.1 T/YR COMBINED FOR ALL 5 TURBINES.
VA-0282	ODEC - LOUISA	LOUSIA	VA	3	VA-40989	3/11/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (1)	NATURAL GAS	1624	MMBTU/H	GE model PG7241S (FA)	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTOR	10.5	PPMVD @ 15% O2	1-h avg	BACT-PSD		9	PPM @ 15% O2	30-day avg	
VA-0282	ODEC - LOUISA	LOUSIA	VA	3	VA-40989	3/11/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	901	MMBTU/H	GE model PG7141S (EA)	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTORS	10.5	PPMVD @ 15% O2	1-h avg	BACT-PSD		9	PPM @ 15% O2	30 day avg	
VA-0266	ODEC - MARSH RUN FACILITY	FAUQUIER	VA	3	40996	2/14/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1624	MMBTU/H	Throughput for each unit.	Nitrogen Dioxide (NO2)	DRY LOW NOX BURNERS.	9	PPMVD @ 15% O2	30 day av..	N/A		10.5	PPM @ 15% O2	1 HOUR AVERAGE	
VA-0280	ODEC -MARSH	FAUQUIER	VA	3	VA-40996	2/14/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	1624	MMBTU/H	Four GE Model PG7241S (FA) turbines. No. 2 fuel oil used as backup for no more than 512 h/yr (4 turbines, combined), turbines rated at 1,803 mmBtu/h on fuel oil.	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTORS WHEN FIRING NATURAL GAS, WATER INJECTION WHEN FIRING FUEL OIL.	10.5	PPMVD	1-h avg, natural gas	BACT-PSD		9	PPM @ 15% O2		Additional limit: 245.2 t/yr combined emissions. Also: 42 ppmvd @ 15% o2 when firing fuel oil

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
IA-0063	WISDOM GENERATION STATION	CLAY	IA	7	02-A-876-P	2/5/2003	SIMPLE CYCLE TURBINE, NATURAL GAS	NATURAL GAS	80	MW	GE PG7121(EA) (7EA). The heating capacity is 980 MMbtu/h and 1095 MMbtu/h, for Natural Gas and Fuel Oil, respectively(based on LHV). Turbine is limited to 2000 hr/yr, 500 hr/yr on Fuel Oil.	Nitrogen Oxides (NOx)	DLN (NATURAL GAS), WATER INJECTION (FUEL OIL)	0.037	LB/MMBTU	Natural Gas	Other Case-by-Case		9	PPM @ 15% O2	Natural Gas	Synthetic minor for PM and CO due to restrictions on hours of operation, 2000 hrs/yr total, 500 hrs/yr on Fuel Oil.
IA-0064	ROQUETTE AMERICA	LEE	IA	7	56-01-009	1/31/2003	TURBINE, SIMPLE CYCLE	NATURAL GAS	495	MMBTU/H	limited to 876 hours per year on simple cycle. PSD BACT for PM and NOx only. CO is synthetic minor.	Nitrogen Oxides (NOx)	DRY LOW NOX BURNERS	0.06	LB/MMBTU	24-hour rolling average	BACT-PSD		6	PPM @ 15% O2	calculated	limited to 876 hours per year on simple cycle. Permit limits are in lb/h and lb/mmBtu. PPM limit is calculated.
MS-0079	WARREN PEAKING POWER FACILITY (WARREN POWER, LLC)	WARREN	MS	4	2780-00099	1/30/2003	TURBINES, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	959.8	mmbtu/h	THERE ARE FOUR IDENTICAL UNITS AT THIS FACILITY (AA-001, AA-002, AA-003, AND AA-004).	Nitrogen Oxides (NOx)	LOW NOX BURNERS	46.7	LB/H	EACH	BACT-PSD		13.17	PPM @ 15% O2	CALCULATION	STANDARD EMISSION LIMIT IS CALCULATED, NOT A PERMIT LIMIT.
CA-1095	EI COLTON, LLC	SAN BERNARDINO	CA	9	406065	1/10/2003	GAS TURBINE: SIMPLE CYCLE >= 2 MW AND < 50 MW	NATURAL GAS	48.7	MW	EQUIP: INCLUDES INLET AIR EVAPORATIVE COOLING AND WATER INJECTION, MFR: GENERAL ELECTRIC, TYPE: SIMPLE CYCLE, MODEL: LM6000 (ENHANCED SPRINT), FUNC EQUIP: POWER GENERATION, FUEL_TYPE: , SCHEDULE: CONTINUOUS, H/D: 24, D/W: 7, W/Y: 52, NOTES: PERMIT REQUIREMENTS HERE ARE CONSISTENT WITH CARB GUIDANCE FOR POWER PLANT SITINGS DOCUMENT, WITH THE EXCEPTION THAT THE NOX CONCENTRATION LIMIT AS PROPOSED BY THE APPLICANT IS MORE STRINGENT. INITIAL COMPLIANCE SOURCE TEST REPORT WAS REVIEWED AND ACCEPTED BY THE AQMD ON NOVEMBER 6, 2003. IT IS SIGNIFICANT THAT THE EMISSION LIMITS ARE MET DOWN TO APPROXIMATELY 50% LOAD. SOURCE TEST RESULTS: 6/12-16/03 10/08/03 (VOC) LOAD, MW 43.8 33.8 22.4 PPMVD@ 15%O2 NOX 3.11 3.12 3.27 CO 3.63 3.29 3.19 VOC 1.52 1.61 1.91 NH3 2.3 2.7 2.2	Nitrogen Oxides (NOx)	SCR SYSTEM (HIGH TEMP SCR CATALYST)	3.5	PPMVD @ 15% O2	3H	BACT-PSD		3.5	PPM @ 15% O2		
VA-0265	CHICKAHOMINY POWER	CHARLES CITY COUNTY	VA	3	51958	1/10/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1862	MMBTU/H	(4) 501F SIMPLE CYCLE DUAL-FUEL COMBUSTION TURBINES	Nitrogen Dioxide (NO2)	DRY LOW NOX COMBUSTOR AND A CONTINUOUS EMISSIONS MONITORING SYSTEM.	107	LB/H	each unit	BACT-PSD		15	PPM @ 15% O2	each unit	
VA-0281	CHICKAHOMINY POWER	CHARLES CITY	VA	3	51-036-00017	1/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	182.6	MW	Throughput for each. Heat input of 1,862 MMBtu/h	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTORS	107	LB/H	each	BACT-PSD		15	PPM @ 15% O2		
VA-0269	CINCAP MARTINSVILLE	HENRY	VA	3	21388	1/8/2003	COMBUSTION TURBINES, SIMPLE CYCLE, (4)	NATURAL GAS	82	MW	This is one of 4 units. Additional throughput: 952.8 MMBtu/h	Nitrogen Dioxide (NO2)	DRY LOW NOX COMBUSTOR AND CONTINUOUS EMISSION MONITORING SYSTEM.	30.6	LB/H	each unit	Other Case-by-Case		9	PPM @ 15% O2	each unit	
VA-0279	CINCAP - MARTINSVILLE	MARTINSVILLE	VA	3	VA-21388	1/8/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	82	MW	Throughput is for each GE 7EA, Model PG7121 (EA). Additional throughput: 952.8 mmBtu/h.	Nitrogen Oxides (NOx)	DRY LOW NOX COMBUSTOR TECHNOLOGY EMPLOYING LEAN PREMIX COMBUSTION CONTROLS	30.6	LB/H	each	BACT-PSD		9	PPM @ 15% O2		

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
*FL-0279	TEC/POLK POWER ENERGY STATION	POLK	FL	4	PSD-FL-363	4/28/2006	SIMPLE CYCLE GAS TURBINE	NATURAL GAS	1834	MMBTU/H	TWO GAS COMBUSTION UNITS UNDER CONSTRUCTION(2006). UNITS 4 AND 5. CO-CEMS TO DEMOSTRATE COMPLIANCE WITH EMISSIONS CAP OF 99 TPY FOR BOTH UNITS COMBINED.	Particulate Matter < 10 N< (PM10)	FIRING OF NATURAL GAS GOOD COMBUSTION PRACTICES	10	% OPACITY		BACT-PSD					
MO-0067	SOUTH HARPER PEAKING FACILITY	CASS	MO	7	122004-017	12/29/2004	TURBINES, SIMPLE CYCLE, NATURAL GAS, (3)	NATURAL GAS	1455	mmBtu/h	THE INDIVIDUAL TURBINE UNITS HAVE A MHDR HEAT INPUT OF 1,455 MMBTU/H EACH.	Particulate Matter < 10 N< (PM10)	GOOD COMBUSTION PRACTICES	15.25	LB/H	SEE NOTES						EMISSION LIMIT 1: TURBINE 1 WITH WASTEWATER INJECTION; EMISSION LIMIT 2: TURBINES 2 &3, TURBINE 1 W/O WASTEWATER INJECTION
OH-0291	OHIO EDISON CO.-WEST LORAIN PLANT	LORAIN	OH	5	02-13376	11/17/2004	SIMPLE CYCLE COMBUSTION TURBINES (5) W/ NATURAL GAS	NATURAL GAS, FUEL OIL, KEROSEN E	85	MW	ALL 5 TURBINES TOGETHER ARE RESTRICTED TO 27,155 HOURS/ROLLING 12-MONTHS OF FIRING NATURAL GAS, IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE FORMALDEHYDE LIMIT.	Particulate Matter < 10 N< (PM10)		5	LB/H	EACH TURBINE	BACT-PSD					
FL-0261	ARVAH B. HOPKINS GENERATING STATION	LEON	FL	4	PSD-FL-343	10/26/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS, (2)	NATURAL GAS	50	mw	HEAT INPUT 445 MMBTU/H (LHV) AT 29 DEGREES F. HOURS OF OPERATION: 5840, 4000 HOURS MAY BE FUEL OIL. GENERAL ELECTRIC LM6000PC SPRINT.	Particulate Matter < 10 N< (PM10)	CLEAN FUELS	2.45	LB/H		BACT-PSD					
LA-0191	MICHOUD ELECTRIC GENERATING PLANT	ORLEANS	LA	6	PSD-LA-700	10/12/2004	COMBUSTION GAS TURBINES 4 & 5 (SIMPLE CYCLE)		1595	MMBTU/H ea.	EQT015 & 016; PHASE I	Particulate Matter < 10 N< (PM10)	USE OF CLEAN BURNING FUELS (NATURAL GAS)	7.85	LB/H	HOURLY MAXIMUM	BACT-PSD					OPERATION LIMITED TO 3000 HR/YR EACH. STARTUP/SHUTDOWN EMISSIONS ADDRESSED AS AN ALTERNATE OPERATING SCENARIO; PM10 LIMIT HERE ESTABLISHED AT 11.04 LB/HR FOR 200 HR/YR PER
LA-0191	MICHOUD ELECTRIC GENERATING PLANT	ORLEANS	LA	6	PSD-LA-700	10/12/2004	COMBUSTION GAS TURBINES 4 & 5 (COMBINED CYCLE)		1595	MM BTU/H ea.	EQT021 & 022; PHASE II	Particulate Matter < 10 N< (PM10)	USE OF CLEAN BURNING FUELS (NATURAL GAS)	7.85	LB/H*	HOURLY MAXIMUM	BACT-PSD					*EMISSION LIMITS REFLECT ONLY THOSE RATES ATTRIBUTED TO THE TURBINES. EMISSIONS FROM DUCT BURNERS ARE LISTED SEPARATELY. OPERATION LIMITED TO 7884 HR/YR EACH. STARTUP/SHUTDOWN EMISSIONS
MN-0053	FAIRBAULT ENERGY PARK	RICE	MN	5	13100071-001	7/15/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS (1)	NATURAL GAS	1663	MMBTU/H	187 MW GROSS MITSUBISHI 501F.	Particulate Matter < 10 N< (PM10)	CLEAN FUEL AND GOOD COMBUSTION PRACTICES.	0.01	LB/MMBTU	3 HOUR AVERAGE	BACT-PSD					
GA-0107	TALBOT ENERGY FACILITY	TALBOT	GA	4	4911-263-0013 P-03-0	6/9/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (6)	NATURAL GAS	108	MW	UNITS ARE SIEMENS WESTINGHOUSE MODEL V84.2 SIMPLE CYCLE TURBINES	Particulate Matter (PM)	LOW SULFUR FUEL	0.023	LB/MMBTU		BACT-PSD					
KY-0093	LOUISVILLE GAS AND ELECTRIC COMPANY	TRIMBLE	KY	4	V-02-043	6/6/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (6)	NATURAL GAS	160	MW	UNITS ARE GE PG7241(FA) PEAKING UNITS. ADDITIONAL THROUGHPUT: 1763 MMBTU/HR MAXIMUM RATED HEAT INPUT CAPACITY (@ -10 DEGREES F).	Particulate Matter (PM)	GOOD COMBUSTION PRACTICE	19	LB/H		BACT-PSD					
MS-0057	SMEPA - SILVER CREEK GENERATING	JEFFERSON DAVIS	MS	4	1340-00032	5/29/2003	TURBINE, SIMPLE CYCLE (3)	NATURAL GAS	1109.3	MMBTU/H		Particulate Matter < 10 N< (PM10)	LOW ASH FUEL (NATURAL GAS) AND GOOD COMBUSTION PRACTICES.	10	LB/H		BACT-PSD					
FL-0244	FPL MARTIN PLANT	MARTIN COUNTY	FL	4	PSD-FL-327	4/16/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined Cycle Unit 8 consists of 4 gas turbines (170 MW) , 4 HRSG with duct firing, and 1 steam turbine (470 MW). This process entry is for simple cycle operation.	Particulate Matter < 10 N< (PM10)	CLEAN FUEL - PIPELINE NATURAL GAS			see note	BACT-PSD					BACT is use of clean fuels, no emission rate limits in permit. VE limit

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
FL-0245	FPL MANATEE PLANT - UNIT 3	MANATEE	FL	4	PSD-FL-328 AND 0810010-006-AC	4/15/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined cycle Unit 3 consists of 4 gas turbines (170MW), 4 HRSGs with duct firing, and 1 steam turbine (470MW). This process entry is for simple cycle operation.	Particulate Matter < 10 N< (PM10)	CLEAN FUEL			see note	BACT-PSD					no emission rate limit. BACT is fuel specifications, CO standards and visible emissions standards serve as indicators of good combustion.
IN-0111	DUKE ENERGY VERMILLION STATION	VERMILLION	IN	5	165-10476-00022-4911	3/13/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (8)	NATURAL GAS	80	MW	Throughput for each. Additional throughput: 1272 mmBtu/h for each of the 8 turbines.	Particulate Matter < 10 N< (PM10)	CLEAN FUEL -- NATURAL GAS			see note	BACT-PSD					BACT is use of natural gas
VA-0263	ODEC - LOUISA FACILITY	LOUISA	VA	3	40989	3/11/2003	TURBINE, SIMPLE CYCLE, (1), NATURAL GAS	NATURAL GAS	1624	MMBTU/H	One GE FA simple cycle turbine.	Particulate Matter < 10 N< (PM10)	GOOD COMBUSTION PRACTICES.	18	LB/H		N/A					
VA-0263	ODEC - LOUISA FACILITY	LOUISA	VA	3	40989	3/11/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	901	MMBTU/H	Throughput is for each unit. 4 GE EA SIMPLE CYCLE TURBINES	Particulate Matter < 10 N< (PM10)	GOOD COMBUSTION PRACTICES.	10	LB/H		N/A					Emission limits are for each unit.
VA-0282	ODEC - LOUISA	LOUSIA	VA	3	VA-40989	3/11/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (1)	NATURAL GAS	1624	MMBTU/H	GE model PG7241S (FA)	Particulate Matter < 10 N< (PM10)	CLEAN FUELS AND GOOD COMBUSTION	18	LB/H		BACT-PSD					
VA-0266	ODEC - MARSH RUN FACILITY	FAUQUIER	VA	3	40996	2/14/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1624	MMBTU/H	Throughput for each unit.	Particulate Matter < 10 N< (PM10)	GOOD COMBUSTION PRACTICES AND CLEAN BURNING FUEL.	18	LB/H		N/A					emission limit for each turbine
VA-0280	ODEC -MARSH	FAUQUIER	VA	3	VA-40996	2/14/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	1624	MMBTU/H	Four GE Model PG7241S (FA) turbines. No. 2 fuel oil used as backup for no more than 512 h/yr (4 turbines, combined), turbines rated at 1,803 mmBtu/h on fuel oil.	Particulate Matter < 10 N< (PM10)	CLEAN FUELS AND GOOD COMBUSTION	18	LB/H	natural gas	BACT-PSD					
IA-0064	ROQUETTE AMERICA	LEE	IA	7	56-01-009	1/31/2003	TURBINE, SIMPLE CYCLE	NATURAL GAS	495	MMBTU/H	limited to 876 hours per year on simple cycle. PSD BACT for PM and NOx only. CO is synthetic minor.	Particulate Matter (PM)	GCP, NATURAL GAS ONLY	0.02	LB/MMBTU		BACT-PSD					
MS-0079	WARREN PEAKING POWER FACILITY (WARREN POWER, LLC)	WARREN	MS	4	2780-00099	1/30/2003	TURBINES, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	959.8	mmbtu/h	THERE ARE FOUR IDENTICAL UNITS AT THIS FACILITY (AA-001, AA-002, AA-003, AND AA-004).	Particulate Matter (PM)	USE OF CLEAN FUEL: NATURAL GAS.	7	LB/H	EACH	BACT-PSD					
MS-0079	WARREN PEAKING POWER FACILITY (WARREN POWER, LLC)	WARREN	MS	4	2780-00099	1/30/2003	TURBINES, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	959.8	mmbtu/h	THERE ARE FOUR IDENTICAL UNITS AT THIS FACILITY (AA-001, AA-002, AA-003, AND AA-004).	Particulate Matter < 10 N< (PM10)	USE OF CLEAN FUEL: NATURAL GAS	7	LB/H	EACH	BACT-PSD					

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
CA-1095	EI COLTON, LLC	SAN BERNARDINO	CA	9	406065	1/10/2003	GAS TURBINE: SIMPLE CYCLE >= 2 MW AND < 50 MW	NATURAL GAS	48.7	MW	EQUIP: INCLUDES INLET AIR EVAPORATIVE COOLING AND WATER INJECTION, MFR: GENERAL ELECTRIC, TYPE: SIMPLE CYCLE, MODEL: LM6000 (ENHANCED SPRINT), FUNC EQUIP: POWER GENERATION, FUEL_TYPE: , SCHEDULE: CONTINUOUS, H/D: 24, D/W: 7, W/Y: 52, NOTES: PERMIT REQUIREMENTS HERE ARE CONSISTENT WITH CARB GUIDANCE FOR POWER PLANT SITINGS DOCUMENT, WITH THE EXCEPTION THAT THE NOX CONCENTRATION LIMIT AS PROPOSED BY THE APPLICANT IS MORE STRINGENT. INITIAL COMPLIANCE SOURCE TEST REPORT WAS REVIEWED AND ACCEPTED BY THE AQMD ON NOVEMBER 6, 2003. IT IS SIGNIFICANT THAT THE EMISSION LIMITS ARE MET DOWN TO APPROXIMATELY 50% LOAD. SOURCE TEST RESULTS: 6/12-16/03 10/08/03 (VOC) LOAD, MW 43.8 33.8 22.4 PPMVD@ 15%O2 NOX 3.11 3.12 3.27 CO 3.63 3.29 3.19 VOC 1.52 1.61 1.91 NH3 2.3 2.7 2.2	Particulate Matter (PM)		0.01	G/SCF		BACT-PSD					
VA-0265	CHICKAHOMINY POWER	CHARLES CITY COUNTY	VA	3	51958	1/10/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1862	MMBTU/H	(4) 501F SIMPLE CYCLE DUAL-FUEL COMBUSTION TURBINES	Particulate Matter < 10 N< (PM10)	CLEAN BURNING FUELS AND GOOD COMBUSTION PRACTICES.	27	LB/H	each unit	BACT-PSD					
VA-0281	CHICKAHOMINY POWER	CHARLES CITY	VA	3	51-036-00017	1/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	182.6	MW	Throughput for each. Heat input of 1,862 MMBtu/h	Particulate Matter < 10 N< (PM10)	CLEAN FUEL, GOOD COMBUSTION CONTROL	27	LB/H	each	BACT-PSD					
VA-0269	CINCAP MARTINSVILLE	HENRY	VA	3	21388	1/8/2003	COMBUSTION TURBINES, SIMPLE CYCLE, (4)	NATURAL GAS	82	MW	This is one of 4 units. Additional throughput: 952.8 MMBtu/h	Particulate Matter < 10 N< (PM10)	GOOD COMBUSTION PRACTICES.	10	LB/H	each unit	Other Case-by-Case					
VA-0279	CINCAP - MARTINSVILLE	MARTINSVILLE	VA	3	VA-21388	1/8/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	82	MW	Throughput is for each GE 7EA, Model PG7121 (EA). Additional throughput: 952.8 mmBtu/h.	Particulate Matter < 10 N< (PM10)	GOOD COMBUSTION, CLEAN FUEL	10	LB/H	each	BACT-PSD					

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES	
*FL-0279	TEC/POLK POWER ENERGY STATION	POLK	FL	4	PSD-FL-363	4/28/2006	SIMPLE CYCLE GAS TURBINE	NATURAL GAS	1834	MMBTU/H	TWO GAS COMBUSTION UNITS UNDER CONSTRUCTION(2006). UNITS 4 AND 5. CO-CEMS TO DEMOSTRATE COMPLIANCE WITH EMISSIONS CAP OF 99 TPY FOR BOTH UNITS COMBINED.	Sulfur Dioxide (SO2)	FIRING OF NATURAL GAS	2	SCF	GRAINS SCF PER 100	BACT-PSD						
OH-0291	OHIO EDISON CO.-WEST LORAIN PLANT	LORAIN	OH	5	02-13376	11/17/2004	SIMPLE CYCLE COMBUSTION TURBINES (5) W/ NATURAL GAS	NATURAL GAS, FUEL OIL, KEROSENE	85	MW	ALL 5 TURBINES TOGETHER ARE RESTRICTED TO 27,155 HOURS/ROLLING 12-MONTHS OF FIRING NATURAL GAS, IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE FORMALDEHYDE LIMIT.	Sulfur Dioxide (SO2)	LOW SULFUR FUEL	0.6	LB/H	EACH TURBINE						
FL-0261	ARVAH B. HOPKINS GENERATING STATION	LEON	FL	4	PSD-FL-343	10/26/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS, (2)	NATURAL GAS	50	mw	HEAT INPUT 445 MMBTU/H (LHV) AT 29 DEGREES F. HOURS OF OPERATION: 5840, 4000 HOURS MAY BE FUEL OIL. GENERAL ELECTRIC LM6000PC SPRINT.	Sulfur Dioxide (SO2)	LOW SULFUR FUEL: NATURAL GAS	1.13	LB/H		BACT-PSD						
WA-0312	FREDONIA ENERGY STATION	SKAGIT	WA	10	4-Jan	7/18/2003	TURBINES, SIMPLE CYCLE, (2)	NATURAL GAS	108	MW	Throughput is for both turbines, combined.	Sulfur Oxides (SOx)	NATURAL GAS OR < 10 N< (PM10)	GOOD COMBUSTION PRACTICE	0.01	GR/DSCF		BACT-PSD					BACT DETERMINED AS TOP FEASIBILITY CASE
KY-0093	LOUISVILLE GAS AND ELECTRIC COMPANY	TRIMBLE	KY	4	V-02-043	6/6/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (6)	NATURAL GAS	160	MW	UNITS ARE GE PG7241(FA) PEAKING UNITS. ADDITIONAL THROUGHPUT: 1763 MMBTU/HR MAXIMUM RATED HEAT INPUT CAPACITY (@ -10 DEGREES F),	Sulfur Oxides (SOx)	LOW SULFUR FUEL: NATURAL GAS SHALL NOT EXCEED 2.0 GRAINS/100 SCF			SEE NOTE	BACT-PSD					BACT LIMIT IS LOW SULFUR FUEL.	
MS-0057	SMEPA - SILVER CREEK GENERATING	JEFFERSON DAVIS	MS	4	1340-00032	5/29/2003	TURBINE, SIMPLE CYCLE (3)	NATURAL GAS	1109.3	MMBTU/H		Sulfur Dioxide (SO2)	LOW SULFUR FUEL (NATURAL GAS)	6.1	LB/H		BACT-PSD						
FL-0244	FPL MARTIN PLANT	MARTIN COUNTY	FL	4	PSD-FL-327	4/16/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined Cycle Unit 8 consists of 4 gas turbines (170 MW) , 4 HRSG with duct firing, and 1 steam turbine (470 MW). This process entry is for simple cycle operation.	Sulfur Dioxide (SO2)	LOW SULFUR FUELS -- NATURAL GAS = 2 GR S/ 100 SCF			see note	BACT-PSD					BACT is the use of clean fuels. No emission rate limits.	
FL-0245	FPL MANATEE PLANT - UNIT 3	MANATEE	FL	4	PSD-FL-328 AND 0810010-006-AC	4/15/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined cycle Unit 3 consists of 4 gas turbines (170MW), 4 HRSGs with duct firing, and 1 steam turbine (470MW). This process entry is for simple cycle operation.	Sulfur Dioxide (SO2)	CLEAN FUEL	2	GR/100 SCF	gr S/100 scf. fuel limitation	BACT-PSD					no emission rate limit. BACT is low sulfur fuel	
IN-0111	DUKE ENERGY VERMILLION STATION	VERMILLION	IN	5	165-10476-00022-4911	3/13/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (8)	NATURAL GAS	80	MW	Throughput for each. Additional throughput: 1272 mmBtu/h for each of the 8 turbines.	Sulfur Oxides (SOx)	CLEAN FUEL			see note	BACT-PSD					BACT is use of natural gas	
VA-0282	ODEC - LOUISA	LOUSIA	VA	3	VA-40989	3/11/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (1)	NATURAL GAS	1624	MMBTU/H	GE model PG7241S (FA)	Sulfur Dioxide (SO2)	FUEL SULFUR LIMIT: 20 GR/100 DSCF MAX HOURLY, 2 GR/100 DSCF PER YEAR.			see note	BACT-PSD					Limit is fuel sulfur limits, no emission rate limit.	
VA-0282	ODEC - LOUISA	LOUSIA	VA	3	VA-40989	3/11/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	901	MMBTU/H	GE model PG7141S (EA)	Sulfur Dioxide (SO2)	FUEL SULFUR LIMIT: 20 GR/100 DSCF HOURLY MAX, 2 GR/100 DSCF ANNUAL MAXIMUM			see note	BACT-PSD					Limit is fuel sulfur limit, no emission rate limit.	
VA-0280	ODEC -MARSH	FAUQUIER	VA	3	VA-40996	2/14/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	1624	MMBTU/H	Four GE Model PG7241S (FA) turbines. No. 2 fuel oil used as backup for no more than 512 h/yr (4 turbines, combined), turbines rated at 1,803 mmBtu/h on fuel oil.	Sulfur Dioxide (SO2)	LOW SULFUR FUELS: NATURAL GAS < 20 GR/100 DSCF, ANNUAL AVG LIMIT IS 0.5 GR/100 DSCF. MAXIMUM SULFUR CONTENT			see note	BACT-PSD					limit is use of low sulfur fuels.	

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
MS-0079	WARREN PEAKING POWER FACILITY (WARREN POWER, LLC)	WARREN	MS	4	2780-00099	1/30/2003	TURBINES, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	959.8	mmbtu/h	THERE ARE FOUR IDENTICAL UNITS AT THIS FACILITY (AA-001, AA-002, AA-003, AND AA-004).	Sulfur Dioxide (SO2)	CLEAN FUEL: USE OF NATURAL GAS	2.9	LB/H	EACH	BACT-PSD					
VA-0265	CHICKAHOMINY POWER	CHARLES CITY COUNTY	VA	3	51958	1/10/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1862	MMBTU/H	(4) 501F SIMPLE CYCLE DUAL-FUEL COMBUSTION TURBINES	Sulfur Dioxide (SO2)	LOW SULFUR FUELS AND GOOD COMBUSTION PRACTICES.	1.1	LB/H	each unit	BACT-PSD					
VA-0281	CHICKAHOMINY POWER	CHARLES CITY	VA	3	51-036-00017	1/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	182.6	MW	Throughput for each. Heat input of 1,862 MMBtu/h	Sulfur Dioxide (SO2)	LOW SULFUR FUEL: 0.2 GR/100 DSCF	1.1	LB/H	each	BACT-PSD					
VA-0269	CINCAP MARTINSVILLE	HENRY	VA	3	21388	1/8/2003	COMBUSTION TURBINES, SIMPLE CYCLE, (4)	NATURAL GAS	82	MW	This is one of 4 units. Additional throughput: 952.8 MMBtu/h	Sulfur Dioxide (SO2)	GOOD COMBUSTION PRACTICES. LOW SULFUR FUEL.	4	LB/H	each unit	Other Case-by-Case					
VA-0279	CINCAP - MARTINSVILLE	MARTINSVILLE	VA	3	VA-21388	1/8/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	82	MW	Throughput is for each GE 7EA, Model PG7121 (EA). Additional throughput: 952.8 mmBtu/h.	Sulfur Dioxide (SO2)	FUEL SULFUR LIMIT: 0.8 GR/100 DSCF, ANNUAL AVG, AND 1.5 GR/100 DSCF ON HOURLY BASIS.	4	LB/H	each	BACT-PSD					

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
OH-0291	OHIO EDISON CO.-WEST LORAIN PLANT	LORAIN	OH	5	02-13376	11/17/2004	SIMPLE CYCLE COMBUSTION TURBINES (5) W/ NATURAL GAS	NATURAL GAS, FUEL OIL, KEROSENE	85	MW	ALL 5 TURBINES TOGETHER ARE RESTRICTED TO 27,155 HOURS/ROLLING 12-MONTHS OF FIRING NATURAL GAS, IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE FORMALDEHYDE LIMIT.	Hydrocarbons, Total		10	LB/H	EACH TURBINE	BACT-PSD					LIMIT IN PERMIT IS FOR ORGANIC COMPOUNDS
FL-0261	ARVAH B. HOPKINS GENERATING STATION	LEON	FL	4	PSD-FL-343	10/26/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS, (2)	NATURAL GAS	50	mw	HEAT INPUT 445 MMBTU/H (LHV) AT 29 DEGREES F. HOURS OF OPERATION: 5840, 4000 HOURS MAY BE FUEL OIL. GENERAL ELECTRIC LM6000PC SPRINT.	Volatile Organic Compounds (VOC)		3	PPMVD @15% O2		Other Case-by-Case					
GA-0107	TALBOT ENERGY FACILITY	TALBOT	GA	4	4911-263-0013 P-03-0	6/9/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (6)	NATURAL GAS	108	MW	UNITS ARE SIEMENS WESTINGHOUSE MODEL V84.2 SIMPLE CYCLE TURBINES	Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICE	0.0086	LB/MMBTU		BACT-PSD					
FL-0244	FPL MARTIN PLANT	MARTIN COUNTY	FL	4	PSD-FL-327	4/16/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined Cycle Unit 8 consists of 4 gas turbines (170 MW) , 4 HRSG with duct firing, and 1 steam turbine (470 MW). This process entry is for simple cycle operation.	Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICES	1.3	PPMVD @ 15% O2	stack test	BACT-PSD					
FL-0245	FPL MANATEE PLANT - UNIT 3	MANATEE	FL	4	PSD-FL-328 AND 0810010-006-AC	4/15/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined cycle Unit 3 consists of 4 gas turbines (170MW), 4 HRSGs with duct firing, and 1 steam turbine (470MW). This process entry is for simple cycle operation.	Volatile Organic Compounds (VOC)	GOOD COMBUSTION	1.3	PPMVD @ 15% O2		BACT-PSD					
IN-0111	DUKE ENERGY VERMILLION STATION	VERMILLION	IN	5	165-10476-00022-4911	3/13/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (8)	NATURAL GAS	80	MW	Throughput for each. Additional throughput: 1272 mmBtu/h for each of the 8 turbines.	Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICES			see note	BACT-PSD					BACT is good combustion practices
VA-0280	ODEC -MARSH	FAUQUIER	VA	3	VA-40996	2/14/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	1624	MMBTU/H	Four GE Model PG7241S (FA) turbines. No. 2 fuel oil used as backup for no more than 512 h/yr (4 turbines, combined), turbines rated at 1,803 mmBtu/h on fuel oil.	Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICE			see note	BACT-PSD					limit is pollution prevention
CA-1095	EI COLTON, LLC	SAN BERNARDINO	CA	9	406065	1/10/2003	GAS TURBINE: SIMPLE CYCLE >= 2 MW AND < 50 MW	NATURAL GAS	48.7	MW	EQUIP: INCLUDES INLET AIR EVAPORATIVE COOLING AND WATER INJECTION, MFR: GENERAL ELECTRIC, TYPE: SIMPLE CYCLE, MODEL: LM6000 (ENHANCED SPRINT), FUNC EQUIP: POWER GENERATION, FUEL_TYPE: , SCHEDULE: CONTINUOUS, H/D: 24, D/W: 7, W/Y: 52, NOTES: PERMIT REQUIREMENTS HERE ARE CONSISTENT WITH CARB GUIDANCE FOR POWER PLANT SITINGS DOCUMENT, WITH THE EXCEPTION THAT THE NOX CONCENTRATION LIMIT AS PROPOSED BY THE APPLICANT IS MORE STRINGENT. INITIAL COMPLIANCE SOURCE TEST REPORT WAS REVIEWED AND ACCEPTED BY THE AQMD ON NOVEMBER 6, 2003. IT IS SIGNIFICANT THAT THE EMISSION LIMITS ARE MET DOWN TO APPROXIMATELY 50% LOAD. SOURCE TEST RESULTS: 6/12-16/03 10/08/03 (VOC) LOAD, MW 43.8 33.8 22.4 PPMVD@ 15%O2 NOX 3.11 3.12 3.27 CO 3.63 3.29 3.19 VOC 1.52 1.61 1.91 NH3 2.3 2.7 2.2	Volatile Organic Compounds (VOC)	OXIDATION CATALYST	2	PPMVD @ 15% O2	3H	BACT-PSD					
VA-0265	CHICKAHOMINY POWER	CHARLES CITY COUNTY	VA	3	51958	1/10/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1862	MMBTU/H	(4) 501F SIMPLE CYCLE DUAL-FUEL COMBUSTION TURBINES	Volatile Organic Compounds (VOC)	CLEAN BURNING FUELS AND GOOD COMBUSTION PRACTICES.	3.7	LB/H	each unit	BACT-PSD					

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
VA-0281	CHICKAHOMINY POWER	CHARLES CITY	VA	3	51-036-00017	1/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	182.6	MW	Throughput for each. Heat input of 1,862 MMBtu/h	Volatile Organic Compounds (VOC)	CLEAN FUEL, GOOD COMBUSTION PRACTICE	3.7	LB/H	each	BACT-PSD					Additional limit: 2.0 ppmvd
VA-0269	CINCAP MARTINSVILLE	HENRY	VA	3	21388	1/8/2003	COMBUSTION TURBINES, SIMPLE CYCLE, (4)	NATURAL GAS	82	MW	This is one of 4 units. Additional throughput: 952.8 MMBtu/h	Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICES.	4.6	LB/H	each unit	Other Case-by-Case					
VA-0279	CINCAP - MARTINSVILLE	MARTINSVILLE	VA	3	VA-21388	1/8/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	82	MW	Throughput is for each GE 7EA, Model PG7121 (EA). Additional throughput: 952.8 mmBtu/h.	Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICES	4.6	LB/H	each	BACT-PSD					

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
FL-0261	ARVAH B. HOPKINS GENERATING STATION	LEON	FL	4	PSD-FL-343	10/26/2004	TURBINE, SIMPLE CYCLE, NATURAL GAS, (2)	NATURAL GAS	50	mw	HEAT INPUT 445 MMBTU/H (LHV) AT 29 DEGREES F. HOURS OF OPERATION: 5840, 4000 HOURS MAY BE FUEL OIL. GENERAL ELECTRIC LM6000PC SPRINT.	Acid Mist / Gases	LOW SULFUR FUEL (NATURAL GAS)	1.15	LB/H		Other Case-by-Case					
FL-0245	FPL MANATEE PLANT - UNIT 3	MANATEE	FL	4	PSD-FL-328 AND 0810010-006-AC	4/15/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	170	MW	Combined cycle Unit 3 consists of 4 gas turbines (170MW), 4 HRSGs with duct firing, and 1 steam turbine (470MW). This process entry is for simple cycle operation.	Sulfuric Acid (mist, vapors, etc)	LOW SULFUR FUEL	2	GR/100 SCF	GR S/100 SCF FUEL LIMITATION	BACT-PSD					REGULATED POLLUTANT IS SULFURIC ACID MIST. NO EMISSION RATE LIMIT. BACT IS USE OF LOW SULFUR FUEL.
VA-0265	CHICKAHOMINY POWER	CHARLES CITY COUNTY	VA	3	51958	1/10/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1862	MMBTU/H	(4) 501F SIMPLE CYCLE DUAL-FUEL COMBUSTION TURBINES	Sulfuric Acid (mist, vapors, etc)	CLEAN BURNING FUELS AND GOOD COMBUSTION PRACTICES.	1.5	LB/H	EACH UNIT	BACT-PSD					REGULATED POLLUTANT IS SULFURIC ACID MIST.
VA-0281	CHICKAHOMINY POWER	CHARLES CITY	VA	3	51-036-00017	1/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	182.6	MW	Throughput for each. Heat input of 1,862 MMBtu/h	Sulfuric Acid (mist, vapors, etc)	LOW SULFUR FUEL: 0.2 GR/100 DSCF, AND GOOD COMBUSTION	0.2	LB/H	EACH	BACT-PSD					REGULATED POLLUTANT IS SULFURIC ACID MIST.

RBLC ID	FACILITY NAME	COUNTY	STATE	REGION	PERMIT NUMBER	PERMIT DATE	PROCESS NAME	FUEL	THRUPUT	THRUPUT UNIT	PROCESS NOTES	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION LIMIT UNIT	EMISSION LIMIT AVG TIME CONDITION	CASE-BY-CASE BASIS	PCT EFFICIENCY	STD EMISSION LIMIT	STD UNIT LIMIT	STD LIMIT AVG TIME CONDITION	POLLUTANT COMPLIANCE NOTES
OH-0291	OHIO EDISON CO.-WEST LORAIN PLANT	LORAIN	OH	5	02-13376	11/17/2004	SIMPLE CYCLE COMBUSTION TURBINES (5) W/ NATURAL GAS	NATURAL GAS, FUEL OIL, KEROSENE	85	MW	ALL 5 TURBINES TOGETHER ARE RESTRICTED TO 27,155 HOURS/ROLLING 12-MONTHS OF FIRING NATURAL GAS, IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE FORMALDEHYDE LIMIT.	Formaldehyde		0.617	LB/H	EACH TURBINE						
VA-0265	CHICKAHOMINY POWER	CHARLES CITY COUNTY	VA	3	51958	1/10/2003	TURBINE, SIMPLE CYCLE, (4), NATURAL GAS	NATURAL GAS	1862	MMBTU/H	(4) 501F SIMPLE CYCLE DUAL-FUEL COMBUSTION TURBINES	Formaldehyde	CLEAN BURNING FUELS AND GOOD COMBUSTION PRACTICES.	1.5	LB/H	each unit	BACT-PSD					
VA-0281	CHICKAHOMINY POWER	CHARLES CITY	VA	3	51-036-00017	1/10/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS, (4)	NATURAL GAS	182.6	MW	Throughput for each. Heat input of 1,862 MMBtu/h	Formaldehyde		1.5	LB/H	each	BACT-PSD					
VA-0269	CINCAP MARTINSVILLE	HENRY	VA	3	21388	1/8/2003	COMBUSTION TURBINES, SIMPLE CYCLE, (4)	NATURAL GAS	82	MW	This is one of 4 units. Additional throughput: 952.8 MMBtu/h	Formaldehyde	GOOD COMBUSTION PRACTICES	3.1	T/YR	combined units	Other Case-by-Case					
VA-0279	CINCAP - MARTINSVILLE	MARTINSVILLE	VA	3	VA-21388	1/8/2003	TURBINE, SIMPLE CYCLE, NATURAL GAS (4)	NATURAL GAS	82	MW	Throughput is for each GE 7EA, Model PG7121 (EA). Additional throughput: 952.8 mmBtu/h.	Formaldehyde		0.67	LB/H	each	BACT-PSD					

ATTACHMENT B

TCEQ COMBUSTION SOURCES CURRENT BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS

TURBINES

TCEQ COMBUSTION SOURCES
CURRENT BEST AVAILABLE CONTROL TECHNOLOGY (BACT) REQUIREMENTS

TURBINES

This information is maintained by the Combustion/Coatings Section and is subject to change. Last update 10/2006

Year	Source Type	Pollutant	Minimum Acceptable Control	Control Efficiency or Details
2006	Gas-Fired Turbine Less than 2500 hours per year	NOx	9 - 15 ppmvd at 15% O2	Dry Low NOx burner SCR Electric Generating Unitsay Be Authorized By Standard Permit
		CO	9 - 25 ppmvd at 15% O2	
		VOC	2 ppmvd at 15% O2 with SCR	
		NH3	7 ppmvd at 15% O2 with SCR	
	Gas-Fired Turbine Simple Cycle	NOx	9 ppmvd at 15% O2	Dry Low NOx burner SCR Electric Generating Unitsay Be Authorized By Standard Permit
		CO	9 - 25 ppmvd at 15% O2	
		VOC	2 ppmvd at 15% O2 with SCR	
		NH3	7 ppmvd at 15% O2 with SCR	
	Gas-Fired Turbine Combined Cycle	NOx	5 ppmvd at 15% O2	Dry Low NOx burner SCR Electric Generating Unitsay Be Authorized By Standard Permit
		CO	9 - 25 ppmvd at 15% O2	
		VOC	2 ppmvd at 15% O2 with SCR	
		NH3	7 ppmvd at 15% O2 with SCR	
	Gas-Fired Turbine Combined Cycle with Duct Burner	NOx	5 ppmvd at 15% O2	Dry Low NOx burner SCR Electric Generating Unitsay Be Authorized By Standard Permit
		CO	9 - 25 ppmvd at 15% O2	
		VOC	4 ppmvd at 15% O2 with SCR	
		NH3	7 ppmvd at 15% O2 with SCR	
	Electric Generating Units Greater than 10MW	NOx	0.14 lb/MW-hr (over 300 hr/yr) 0.38 lb/MW-hr (under 300 hr/yr)	May Be Authorized By Standard Permit
	Electric Generating Units Less than 10MW East Texas	NOx	1.77 lb/MW-hr	May Be Authorized By Standard Permit Units Firing Landfill Gas, Oil FieldGas, or Digester Gas With Less Than .5 grains H2S or 30 grains Sulfur
		NOx	0.47 lb/MW-hr (over 300 hr/yr) 1.65 lb/MW-hr (under 300 hr/yr)	May Be Authorized By Standard Permit Units Installed before 1/1/2005
		NOx	0.14 lb/MW-hr (over 300 hr/yr) 0.47 lb/MW-hr (under 300 hr/yr)	May Be Authorized By Standard Permit Units Installed On or After 1/1/2005
	Electric Generating Units Less than 10MW West Texas	NOx	3.11 lb/MW-hr (over 300 hr/yr) 21 lb/MW-hr (under 300 hr/yr)	May Be Authorized By Standard Permit
	Electric Generating Units	SO2	Gaseous Fuel: 10 grains Sulfur per 100 dscf Liquid Fuel: 0.05 wt % Sulfur	

ATTACHMENT C

TCEQ GAS TURBINE PERMIT LIST

TEXAS COMMISSION on ENVIRONMENTAL QUALITY
GAS TURBINE PERMIT LIST

UNITS RATED 20 MW AND GREATER ELECTRIC OUTPUT

Updated 10/29/2007

Permit No.			Appl.	Issue	Company	Location		Turbine	Number	MW	Project	BACT (ppmvd @ 15% O2)		
TNRCC	PSD	NA	Rec'd.	Date	Name	City	County	Model	of Units	per Unit	MW	NOx	Control Method	CO
5409			6/2/1977	8/17/1977	El Paso Electric	El Paso	El Paso	W 501B4	1	72		NC		
7647			5/22/1979	12/6/1979	Diamond Shamrock	La Porte	Harris	GE F7	2	80		NC		
9044			3/10/1982	6/7/1982	Dow Chemical	Freeport	Brazoria	GE F7	3	80		NC		
9045			3/10/1982	6/7/1982	Dow Chemical	Freeport	Brazoria	W 501D	2	100		NC		
9046			3/10/1982	6/7/1982	Dow Chemical	Freeport	Brazoria	W 501D	2	100		NC		
9047			3/10/1982	6/7/1982	Dow Chemical	Freeport	Brazoria	W 501D	1	100		NC		
9244			12/14/1982	2/7/1983	Motiva Enterprises (Texaco)	Port Arthur	Jefferson	GE F6	1	37		NC		
9292A	605M2		3/4/1983	8/10/1983	Calpine Clear Lake Cogen. Ltd.	Pasadena	Harris	W 501D	3	100		75	W	
9322	621		4/15/1983	2/8/1985	University of Texas	Austin	Travis	W 251	1	40		75	S	
9241A	493M4		7/22/1983	10/13/1983	Cogen Lyondell (ARCO)	Channelview	Harris	GE F7	5	75	500	36 - 24	S	
9340			7/15/1983	6/11/1984	Central & Sourthwest	Newgulf	Wharton	GE F7	1	80		75	S	
9344	243M2		7/20/1983	2/29/1984	Coastal Refining & Marketing	Corpus Christi	Nueces	GE F5	2	25		112	D	
9346	612M2		7/25/1983	2/7/1984	Bayou Cogeneration	La Porte	Harris	GE F7	4	80		75	S	
9378	619		10/12/1983	3/1/1984	Amoco Chemicals	Texas City	Galveston	GE F6	1	37		75	S	
9463	649		5/3/1984	4/11/1985	Amoco Oil Company	Texas City	Galveston	GE F7	2	80		75	S	
9492B	639		6/20/1984	11/26/1984	Occidental Chemical	Deer Park	Harris	GE F7	1	80		75	S	
9517	642		8/28/1984	3/12/1985	Amoco Chemicals	Alvin	Brazoria	GE F6	1	37		75	S	
9560			11/26/1984	2/11/1986	E. I. DuPont	Victoria	Victoria	GE F7	1	80		75	S	
9570	650		12/10/1984	6/21/1985	Texas City Cogen LP	Texas City	Galveston	W 501D5	3	100		75	S	
9609A			2/5/1985	8/2/1985	Union Carbide	Seadrift	Calhoun	GE F6	2	37		75	S	
9629			3/6/1985	9/27/1985	E. I. DuPont	Orange	Orange	GE F7	1	80		42	S	10
9664	662		3/28/1985	2/12/1986	TU Electric	Granbury	Hood	GE F7 (Pkng)	4	101		96		
9910	731		8/29/1985	3/7/1988	Exxon Chemicals	Baytown	Harris	GE F6	3	37		42	S	
16750	685		10/17/1985	6/10/1986	Wichita Falls Energy	Wichita Falls	Wichita	GE LM2500	3	20		75	S	
16840	688		11/22/1985	5/1/1987	Fina Oil	Port Arthur	Jefferson	GE F6	2	37		50	S/W	
17030	699		2/12/1986	5/29/1986	Formosa Plastics	Point Comfort	Calhoun	GE F6	1	37		94	S	
17369	713		5/29/1986	10/27/1986	Exxon	Baytown	Harris	W 251B8	2	43		75	S	
17411	720M3		7/7/1986	9/29/1986	Power Resources	Big Spring	Howard	GE F7	2	80		51	S	
17625	704		9/17/1986	8/26/1987	Koch Refining Co.	Corpus Christi	Nueces	GE F6	1	37		42	S	
17740	716		11/17/1986	12/16/1987	Encogen One	Sweetwater	Nolan	GE F7 (2), F6	3	80,37		42	S	
18049	725		4/15/1987	6/14/1988	Ticona Polymers, Inc (Celanese)	Bishop	Nueces	GE F6	1	37		42	S	
18358	732		9/30/1987	7/5/1988	Equistar Chemical, LP	Corpus Christi	Nueces	GE F6	1	37		42	S	
18394	739		10/15/1987	5/19/1988	Tenaska III Texas Partners	Paris	Lamar	GE F7	2	80		42	S	
18846			5/2/1988	8/3/1988	Lubbock Power & Light	Lubbock	Lubbock	GE LM2500	1	21		25	S	
19166	760		11/7/1988	10/13/1989	Formosa Plastics ('93 AMD)	Point Comfort	Calhoun	GE F7MNQC	5	88		25	S	25
19566	932		2/23/1999	3/14/2000	ExxonMobil (originally 40699)	Beaumont	Jefferson	GE F7FA	3	170	740	5	SCR	10/25
19764			10/16/1989	4/6/1990	Niject Services Co.	Hawkins	Wood	GE LM2500	1	26		25	S	
20065	780		4/11/1990	8/7/1991	Huntsman Petrochemical (Texaco)	Port Neches	Jefferson	GE F6	2	37		25	LPM	25
20250			7/24/1990	4/23/1991	Praxair	Texas City	Galveston	GE F6	1	37		25	S	46
20862	799		5/20/1991	5/26/1992	Mobil Oil	Beaumont	Jefferson	GE F6	1	37		9	S+SCR	10
20869	800		6/3/1991	5/20/1992	Oyster Creek Ltd.	Freeport	Brazoria	GE F7EA	3	89		15	D	25
21394	806		3/3/1992	6/16/1993	Brazos Electric Power Coop	Gordon	Palo Pinto	W 501D5 (Pkng	2	104		25	W	25
21429			3/11/1992	9/14/1992	Air Liquide (Big Three)	Port Neches	Jefferson	GE F6	1	37		9	LPM+SCR	15
21592			5/14/1992	11/12/1992	Houston Industries, Inc	Satsuma	Harris	GE F7E (Hybrid	8	80		25	D	25
21587	807		5/15/1992	5/27/1993	Houston Industries, Inc	LaPorte	Harris	GE F7EA	2	86		15	D	25

Updated 10/29/2007

Permit No.			Appl.	Issue	Company	Location		Turbine	Number	MW	Project	BACT (ppmvd @ 15% O2)		
TNRCC	PSD	NA	Rec'd.	Date	Name	City	County	Model	of Units	per Unit	MW	NOx	Control Method	CO
1467			11/2/1992	5/7/1993	El Paso Electric (Upgrade)	El Paso	El Paso	W 501-B6	2	70	240	42	W (82 FO)	
22038	815		11/5/1992	8/9/1993	Shell Oil Company	Deer Park	Harris	GE F7E	2	75	150	15	D	25
9241A	493M1		11/5/1992	11/8/1993	Cogen Lyondell (Turbine #6)	Channelview	Harris	GE F7EA	1	80	80	15	D	25
22043	818		11/9/1992	7/5/1994	Equistar Chemical (Quantum)	Deer Park	Harris	GE F6	2	36	96	15	D	25
9629			11/13/1992	5/12/1994	E. I. DuPont (AMD)	Orange	Orange	GE F7E	1	80	105	42	S	10
25034			5/16/1994	1/26/1995	Union Carbide	Texas City	Galveston	GE F6	1	38	38	15	D	25
25384	839		6/20/1994	12/6/1994	Tenaska IV Power Partners Ltd	Cleburne	Johnson	W 501F	2	171	500	9	SCR	25
25738	840		7/15/1994	4/21/1995	Brownsville Public Utility Board	Brownsville	Cameron	W 251B	1	45	70	15	D + SCR	10
9910	731		12/30/1994	9/14/1995	Exxon Chemicals (Add Turbine)	Baytown	Harris	Siem. V82.2	1	100	100	9	D	15
31914	857		2/12/1996	9/9/1996	Sweeney Cogen Ltd. Part.	Old Ocean	Brazoria	W501D5A	3	121	363	25/15	D	10
32096	867		3/11/1996	2/5/1997	QUIXX Corp (SPS)	Borger	Hutchison	W501D5A	2	121	242	15	D + SCR	20
32263	866		4/1/1996	12/4/1996	Calpine Corp.	Pasadena	Harris	W501F	1	160	240	12	S,SCR	20
32881	875		12/31/1996	7/17/1997	GSE&DCE (LS Power LLC)	Denver City	Yoakum	GE F7FA	2	180	550	15	D	15
35335	880		4/18/1997	1/8/1998	Occidental Chemical Corp	Gregory	San Patricio	GE F7FA	2	170	500	15	D	20
34824	877		5/9/1997	3/19/1998	Gregory Power Partnership,LP	Gregory	San Patricio	GE F7FA	2	168	336	15	D	20
36889			10/29/1997	4/1/1998	Houston Industries Power Gen, Inc.	Orange	Orange	GE F6B	2	44	110	9/5	SCR+CO Cat	15
735B			12/8/1997	6/26/1998	BASF (Add Cogen)	Freeport	Brazoria	GE F7EA	1	83	83	15	D	25
31914	857		12/10/1997	9/30/1998	Sweeney (Add cogen)	Old Ocean	Brazoria	W 501D5A	1	121	121	25/15	D	10
37283	915	15	12/18/1997	9/30/1998	Calpine Corp.	Pasadena	Harris	W 501F	1	160	500	9/6	SCR	25
37391	897		1/13/1998	8/7/1998	Tenaska Frontier Partners	Shiro	Grimes	GE 7FA	3	183	830	15	D	13
37613	900		2/12/1998	7/31/1998	Frontera Generating LP	Mission	Hidalgo	GE F7FA	2	165	440	15	D	15
37894	918		3/19/1998	1/8/1999	Lubbock Power & Light	Lubbock	Lubbock	GE LM6000PC	2	42	128	15	SCR	25
38191	906		4/13/1998	10/2/1998	Midlothian Energy Ltd. (Venus)	Midlothian	Ellis	ABB GT24 OTC	4	275	1080	5	SCR	25
38183	907		4/20/1998	10/14/1998	City Public Service	Elmendorf	Bexar	GE F7FA	2	170	500	9	SCR	25
38284	909		5/1/1998	12/31/1998	Calpine Magic Valley	Edinburg	Hidalgo	W 501G	2	230	700	12/9	SCR	25
38326	916		5/7/1998	10/28/1998	Lamar Power Part. (Panda Paris)	Paris	Lamar	GE F7FA	4	170	1000	9	D	18
38481	921		5/29/1998	10/20/1999	Union Carbide	Seadrift	Calhoun	GE F6B	1	39	39	9	D	25
38599	914		6/15/1998	12/22/1998	Duke Energy Hidalgo, LP	Edinburg	Hidalgo	GE F7FA	2	170	520	9	D	20
38659	922		6/24/1998	2/15/1999	Panda Guadalupe Power	New Braunfels	Guadalupe	GE F7FA	4	170	1000	9	D	15
36644	903	7	10/12/1998	4/22/1999	Fina/BASF (AMD - Sub Cogen for Boiler)	Port Arthur	Jefferson	GE F6B	2	39	78	9	D/SCR	25
39842	919		11/12/1998	11/19/1999	Eastex Cogen	Longview	Harrison	GE F7FA	2	168	466	9	D	7
40039	925		12/2/1998	5/7/1999	Tenaska Gateway	Minden	Rusk	GE F7FA	3	164	888	9	D	25
40040	923		12/2/1998	6/8/1999	Hays Energy Project	San Marcos	Hays	ABB GT24 OTC	4	175	1080	5	D/SCR	5 (25)
40363	927		1/21/1999	12/15/1999	Ennis-Tractebel Power Co., Inc.	Ennis	Ellis	W 501G	1	250	350	9	SCR	20
40496	929		2/1/1999	6/22/1999	Sabine River Works Cogen LP(El DuPont)	Orange	Orange	GE F7FA	2	170	440	6	SCR	15
40620	931		2/11/1999	12/20/1999	Mirant Texas, Lp (Formerly SEI)	Whitney	Bosque	GE F7FA	3	170	650	9	D	9
40803	935		3/9/1999	2/23/2000	City of Garland	Nevada	Collin	GE F7EA	1	85	85	9	D	25
40867	938		3/17/1999	12/3/1999	Rio Nogales Power Project LP	Seguin	Guadalupe	GE F7FA	3	170	780	9	D	7.4
41008	936		4/5/1999	11/19/1999	Odessa-Ector Power Partners LP	Odessa	Ector	GE F7FA	4	170	1000	9	D	9
41166	939		4/22/1999	2/7/2000	AES Aurora	Granbury	Hood	M 501G	2	254	807	9	SCR	25
41249	940		4/30/1999	3/28/2000	Freestone Power Gen LP - Calpine	Fairfield	Freestone	GE F7FA	4	175	1070	9	D	20
41437	941		5/21/1999	9/30/1999	GenTex Power Corp & Calpine	Bastrop	Bastrop	W 501F	2	183	500	5	SCR	10/25
41500	943		5/28/1999	2/4/2000	Corpus Christi Cogeneration LP	Corpus Christi	Nueces	GE F7FA	3	166	708	9	D	15
38191	906M1		7/1/1999	11/24/1999	Midlothian Energy (add #5 & #6)	Midlothian	Ellis	ABB GT24 OTC	2	250	550	5	SCR	25
41775	946	17	7/6/1999	12/9/1999	Reliant Energy Channelview	Channelview	Harris	W 501F	4	183	820	3	D + SCR	23
41941	948		7/28/1999	3/22/2000	Coastal Power Company	Bastrop	Bastrop	GE F7FA	2	170	550	9	D	20
41953	951		7/29/1999	3/6/2000	Cobisa-Forney Limited Partnership	Forney	Kaufman	GE F7FA	6	170	1774	9	D	15
41996	953	20	8/2/1999	2/11/2000	Calpine Corp.	Baytown	Chambers	W 501F	3	180	750	3.5	D + SCR	15
42179	955	21	8/26/1999	3/22/2000	Calpine	Pasadena	Harris	W 501F	3	180	740	3.5	SCR	25/15
42734	958		11/4/1999	7/14/2000	Wise County Power Co LLC	Bridgeport	Wise	W 501G	2	350	800	5	SCR + CO	9

Updated 10/29/2007

Permit No.			Appl.	Issue	Company	Location		Turbine	Number	MW	Project	BACT (ppmvd @ 15% O2)		
TNRCC	PSD	NA	Rec'd.	Date	Name	City	County	Model	of Units	per Unit	MW	NOx	Control Method	CO
43178	962		12/30/1999	12/15/2000	Westvaco Texas LP	Evadale	Jasper	GE LM6000PC	2	42	84	5	SCR + CO	22
43890	965		3/20/2000	12/15/2000	Cottonwood Energy Co. LP	Deweyville	Newton	GE F7FA	4	170	1200	5	SCR	17.6
43965	966	026	3/24/2000	10/17/2000	Brazos Valley Energy LP (Avista-Steag)	Thompsons	Fort Bend	GE F7FA	2	175	670	3.5	SCR	25
19166	760M5		4/20/2000	5/4/2001	Formosa Plastics (Add Cogen #6)	Point Comfort	Calhoun	GE F7EA	1	83	83	9	DLN	25
45360	977		8/16/2000	5/23/2001	Entergy Power Ventures LP	Marshall	Harrison	GE F7FA	2	170	570	5	SCR	25
21878			8/30/2000	12/19/2000	Air Products, Inc.	La Porte	Harris	GE F6B (Pkg)	4	44	176	15	DLN	25
45642	979	036	9/5/2000	8/22/2001	Calpine - Deer Park Energy	Deer Park	Harris	W 501F	4	180	1060	2.5	SCR	24
46042	981		10/16/2000	7/12/2001	BP Amoco Corp	Texas City	Galveston	GE F7FA	3	167	550	3.5	SCR	25
46192	983		10/24/2000	3/24/2003	Innovene USA LLC (BP Amoco Chemical)	Alvin	Brazoria	GE F6B	2	35	70	3.5	SCR	25
7647B	276		11/10/2000	12/20/2002	OxyVinyls, LP (Add cogen #3)	La Porte	Harris	GE F7EA	1	87	87	4	DLN + SCR	25
46426	999		11/13/2000	10/8/2003	Texas Petrochemicals, LP	Houston	Harris	GE F7EA	2	81	581	5	SCR	25
48070	1011		5/24/2001	1/17/2002	South Texas Electric Coop, Inc	Nursery	Victoria	GE LM6000	3	45	180	5	SCR	15
48106	1012		5/30/2001	4/12/2002	City of Austin Electric Utility Dept	Del Valle	Travis	GE LM600 GE F7FA	4 1	48 164	500	5 5	SCR SCR	9 17.5
52756	1026		9/25/2002	7/23/2003	Brazos Elec Pwr (Duke Energy Jack)	Jacksboro	Jack	GE F7FA	2	170	620	5	SCR	20
9910	731M2		10/4/2002	6/13/2003	ExxonMobil Corp - Baytown	Baytown	Harris	GE F7FA	1	170	170	3	SCR	7.4
53284	1027		10/15/2002	6/27/2003	City Public Service	San Antonio	Bexar	GE LM6000	4	48	180	5	SCR + CO	12
54114	1031	55	1/9/2003	10/20/2003	Bayport Energy Center LP	Pasadena	Harris	GE F6B	2	40	80	3(1.9)	SCR	17.2
54162			2/4/2003	3/28/2003	City of Bryan (Std Permit)	Bryan	Brazos	GE LM6000PC	1	50	50	5	SCR	32
55627			6/26/2003	9/8/2003	Brownsville PUB (Std Permit)	Brownsville	Cameron	GE LM6000	1	50	50	5	SCR	32
46306	986M1	59	4/13/2004	12/2/2004	Dow Chemical (Add Cogens)	Freeport	Brazoria	W 501F	2	180	360	5/3	D + SCR	25
71739	1043		4/2/2004	6/3/2005	Cobisa-Greenville LLP	Greenville	Hunt	GE F7 or W 501	6 or 4	170to230	1800	5	SCR	25
72579			7/2/2004	1/10/2005	Golden Spread Elect Coop, Inc.(Unit 4)	Denver City	Yoakum	GE F7FA (Pkg)	1	168	168	9	DLN	9
76990	1059		9/26/2005	2/14/2006	Navasota Odessa Energy Partners LP	Odessa	Ector	GE F7EA	4	75	550	5	DLN + SCR	27
77039	1060		10/3/2005	2/9/2006	Navasota Wharton Energy Partners Lp	Wharton	Wharton	GE F7EA	4	75	550	5	DLN + SCR	27
77679	1061		12/22/2005	3/1/2007	Nacogdoches Power LLC	Sacul	Nacogdoches	SW 501F	1	190	330	5	DLN + SCR	21
79335			6/30/2006	9/22/2006	Wise County Power Company LP	Poolville	Wise	GE F7EA	4	81	324	9	DLN	25
72579	1080		10/17/2006	8/24/2007	Golden Spread Elect Coop, Inc.(add unit 5)	Denver City	Yoakum	GE F7FA	1	168	168	9	DLN	9
80289	1082		10/31/2006	7/26/2007	NRG Texas - Cedar Bayou Generating Station	Eldon	Chambers	S GT6-5000F GE LM6000	2 8	200 50	600 400	9/3 5	DLN + SCR Water + SCR	15 25
45642	979M1	36M1	11/10/2006	Pending	Calpine - Deer Park Energy (add units)	Deer Park	Harris	SW 501F	2	180	530	2.5	SCR	24
95	854M2		1/3/2007	Pending	Ineos USA LLC (add 2 Solar Titans)	Alvin	Brazoria	Solar 130S	2	15	30	5	SCR	32
1467	1090		4/4/2007	Pending	El Paso Electric Company (add Unit 6)	El Paso	El Paso	GE F7EA	2	70	220	5	DLN, SCR, CO	25
81593	1093		4/10/2007	Pending	Barney M. Davis LP	Corpus Christi	Nueces	GE F7FA	2	174	700	9/5	DLN, SCR, CO	8/15
81594	1091		4/10/2007	Pending	Nueces Bay WLE LP	Corpus Christi	Nueces	GE F7FA	2	174	700	9/5	DLN, SCR, CO	8/15
81853	1092		5/4/2007	Pending	Occidental Energy Ventures Corp	Denver City	Yoakum	????	3	???	???	5	DLN + SCR	15
81903	1095		5/16/2007	Pending	City Public Service	Elmendorf	Bexar	GE LM6000	4	50	200	5	DLN, SCR, CO	9
82244	1098		6/21/2007	Pending	Navasota Wharton Energy Partners LP	Wharton	Wharton	GE F7EA	2	75	225	5	DLN + SCR	27
82303	1099		6/21/2007	Pending	Navasota Odessa Energy Partners LP	Odessa	Ector	GE F7EA	2	75	225	5	DLN + SCR	27
82426	1100	69	7/19/2007	Pending	EXTEX LaPorte Limited Partnership	Dallas	Dallas	S GT6-5000F	2	194	640	2.5	DLN + SCR +CO	8

CODES: NC = No Controls, W = Water Injection, S = Steam Injection, D or DLN = Dry Low NOx, LPM = Lean Pre-mix, SCR = Selective Catalytic Reduction, CO = CO Catalyst, FO = Fuel Oil, NA Permits - N = NOx, V = VOC.

Updated 10/29/2007

Permit No.			Appl.	Issue	Company	Location		Turbine	Number	MW	Project	BACT (ppmvd @ 15% O2)		
TNRCC	PSD	NA	Rec'd.	Date	Name	City	County	Model	of Units	per Unit	MW	NOx	Control Method	CO
PROJECTS VOIDED, WITHDRAWN, EXPIRED														
23962	837		12/3/1993	5/2/1994	West Campus Cogeneration (EXP)	College Stn.	Brazos	GE F6	2	37	75	9-14	D	
33166	870		7/22/1996	12/20/1996	Longview Generating, LP (EXP)	Longview	Gregg	GE F7FA	1	180	180	9	D	8
37227	894	5	12/12/1997	9/22/1998	Air Liquide America Corp (V)	La Porte	Harris	GE F7EA	3	81	243	9/5	SCR	25
37302	895		12/29/1997	8/18/1998	Edinburg Energy (EXP)	Edinburg	Hidalgo	ABB GT-24	4	180	815	15	D	10
38484	911	13	5/29/1998	WD	Air Products, Inc (V)	La Porte	Harris	W 501F	1	168	240	9/5	SCR	20
9241A	493M4		3/4/1999	11/5/1999	Cogen Lyondell (Turbine #7) (EXP)	Channelview	Harris	W 501F (Pkng)	1	160	160	25	D	25
40619	933		2/11/1999	3/11/2002	Mirant Parker LLC (SEI) (EXP)	Weatherford	Parker	GE F7FA/F7EA	2/2	170/82	650	9/9	D	9/25
40699	932		2/23/1999	3/14/2000	ExxonMobil (Cons into 19566)	Beaumont	Jefferson	GE F7FA	3	170	740	5	SCR	10/25
41013	937		4/5/1999	1/13/2000	Archer Power Partners LP (EXP)	Lakeside City	Archer	GE F7FA	4	170	1000	5	SCR	9
41472	942		5/27/1999	1/31/2000	Kaufman Cogen, LP (EXP)	Mesquite	Kaufman	GE F7FA	2	170	620	5	SCR	20
41606	944		6/14/1999	2/4/2000	Duke Energy Bell LP (EXP)	Temple	Bell	GE F7FA	2	170	520	5	SCR	20
41774	945		7/6/1999	3/20/2000	Gateway Power Project, LP (EXP)	Gilman	Upshur	GE F7FA	3	170	800	5	SCR	7.4
41802	947	19	7/12/1999	8/31/2000	Chambers Energy Facility (V)	Houston	Harris	ABB GT24 OTC	8	180	2200	3.5	D + SCR + CO	20
42086	952		8/16/1999	8/18/2000	Palestine Generation LLC (EXP)	Palestine	Anderson	GE F7FA	6	170	1600	5	SCR	15
42169	954		8/25/1999	3/14/2000	Duke Energy Jack, LP (EXP)	Jacksboro	Jack	GE F7FA	2	170	620	5	SCR	20
42179	955	21	11/16/2000	WD	Channel Energy (Add 4th Cogen) (V)	Pasadena	Harris	W 501F	1	180	180	3.5	SCR	25
42774	960		11/10/1999	7/28/2000	West Texas Energy Ltd Part (EXP)	El Paso	El Paso	ABB-GT24	2	180	500	3.5	SCR	5
42905	961	23	11/24/1999	WD	Texas Industrial Power (WD)	Mt. Belvieu	Chambers	W 501FD	1	177	193	5	SCR	25
43965	966	026	11/6/2000	12/31/2002	Steag (Brazos Valley)(Add 2 CCTs()EXP)	Thompsons	Fort Bend	GE F7FA	2	170	660	3.5	SCR	25
44174	968	028	4/13/2000	6/20/2001	MC Energy Partners, LP (V)	Montgomery	Montgomery	GE F7FA	2	170	660	3	SCR	25
44175	969	029	4/13/2000	12/21/2000	Cedar Power Partners, LP(EXP)	Dayton	Liberty	GE F7FA	2	175	800	3	SCR	25
45642	979M1	036M1	3/30/2004	WD	Calpine-Deer Park Energy (add 2 units)	Deer Park	Harris	W 501F	2	180	360	2.5	SCR	24
45843	982	037	10/2/2000	3/26/2002	Calpine-Amelia Energy Center(EXP)	Amelia	Jefferson	W 501F	3	180	1030	3.5	SCR	22
46306	986	039	11/2/2000	4/12/2002	Dow Chemical(Turbines Deleted)(V)	Freeport	Brazoria	W 501F	6	180	1440	3.5	SCR	23
46470	990		11/17/2000	AV &V	STEAG Power LLC(AV & V)	Ferris	Ellis	GE F7FA	4	175	1200	3.5	SCR	20
46532			11/21/2000	No Turbines	Celanese, Ltd (Turbines Deleted)	Pasadena	Harris	GE LM6000	6	47	284	5	SCR + CO	5
46536			11/22/2000	WD	Texas Bayou Energy Center (WD-PBR)	Texas City	Galveston	GE LM2500	1	25	25	4.2	SCR	25
46603			4/26/2001	5/15/2002	Ridge Energy Storage & Grid Services	Clemville	Matagorda	DR T6-EA 418 (Pkg	4	134	538	9	SCR	25
46665	1003		12/14/2000	3/24/2003	Ennis Tractebel II LP (V 05/19/04)	Ennis	Ellis	W 501G	2	230	815	5	SCR	9
47318	1009		3/7/2001	7/5/2002	Hartburg Power LP (EXP)	Deweyville	Newton	GE F7FA	3	277	800	5	SCR	15
48500	1013		7/16/2001	WD	STEAG Power LLC (WD)	Ennis	Ellis	W 501G	4	200	1400	5	SCR	35
49293	1015		9/21/2001	12/6/2002	Steag - Sterne Elec Gen Fac (EXP)	Sacul	Nacogdoches	SW 501F	3	190	1000	5	SCR	21
55629			6/26/2003	9/12/2003	Brownsville PUB (Std Permit)(Void)	Brownsville	Cameron	GE LM6000	1	50	50	5	SCR	32
79133			6/6/2006	7/6/2006	Golden Spread Elect Coop, Inc.(Std Permit Unit 5)(Void 08/27/07 - rolled into 72579)	Denver City	Yoakum	GE 7FA (PKg)	1	168	168	9	DLN	9

CODES: V = Void, AV = Admin Void, EXP = Expired, WD = Withdrawn, DEL = Deleted, Cons = Consolidated, PBR = Permit by Rule

ATTACHMENT F

WELCOME

PUBLIC MEETING

for the proposed

Jacinto Peaking Power Facility

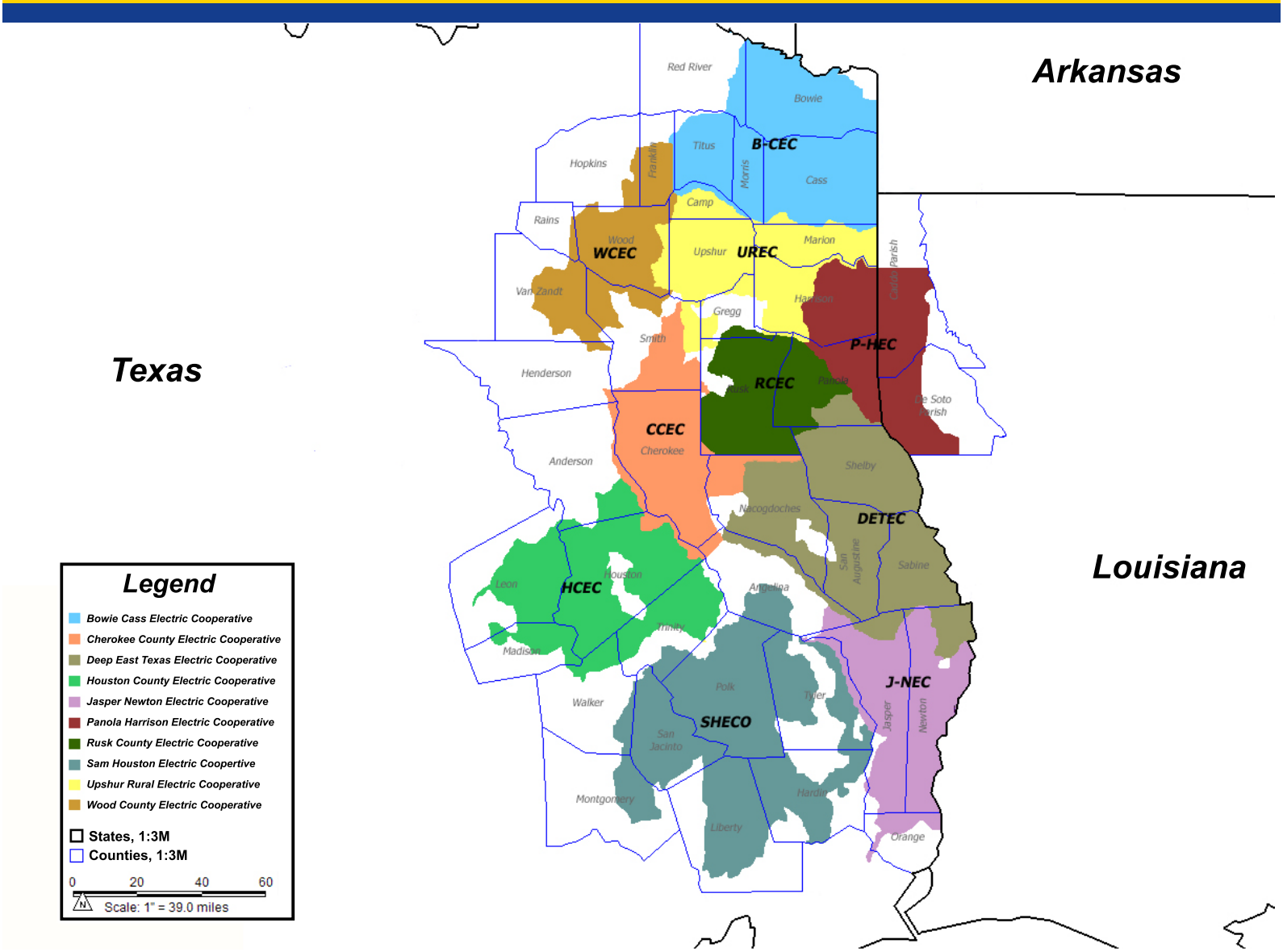
hosted by

East Texas Electric Cooperative, Inc.

and

Rural Utilities Service

East Texas Electric Cooperative, Inc.



Membership: Northeast Texas Electric Cooperative, Inc.
Tex-La Electric Cooperative of Texas, Inc.
Sam Rayburn G&T Electric Cooperative, Inc.

Customers: 315,000 retail customers in east Texas

Energy: 6,100,000,000 kilowatt-hours (kWh) in 2006

Peak Demand: 1,500,000 kilowatts (kW) in 2006

Jacinto Peaking Power Facility

Location: 42 acre site, 5 miles south of Shepherd and 2 miles east of U.S. Highway 59, in San Jacinto County

Description: 168,000 kW generation station with GE 7EA simple cycle combustion turbines with dry LO-NOx burners

Construction: June 2008 through May 2009

Fuel Supply: Natural gas

Transmission: 500 ft transmission tap

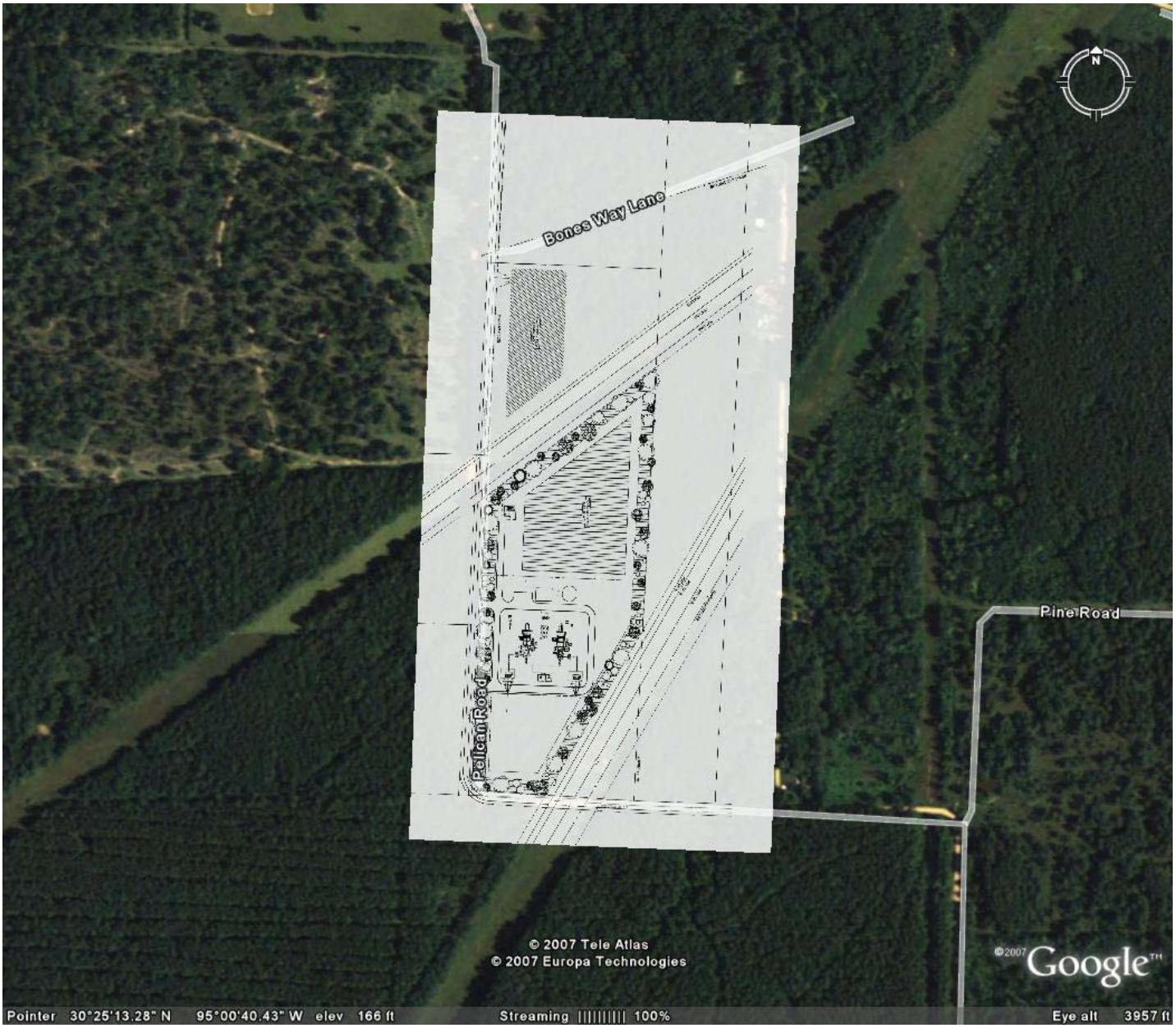
Benefit: (1) Helps meet power and energy requirements in east Texas

(2) Provides added reliability and stability to the region's power and transmission system

Jacinto Location

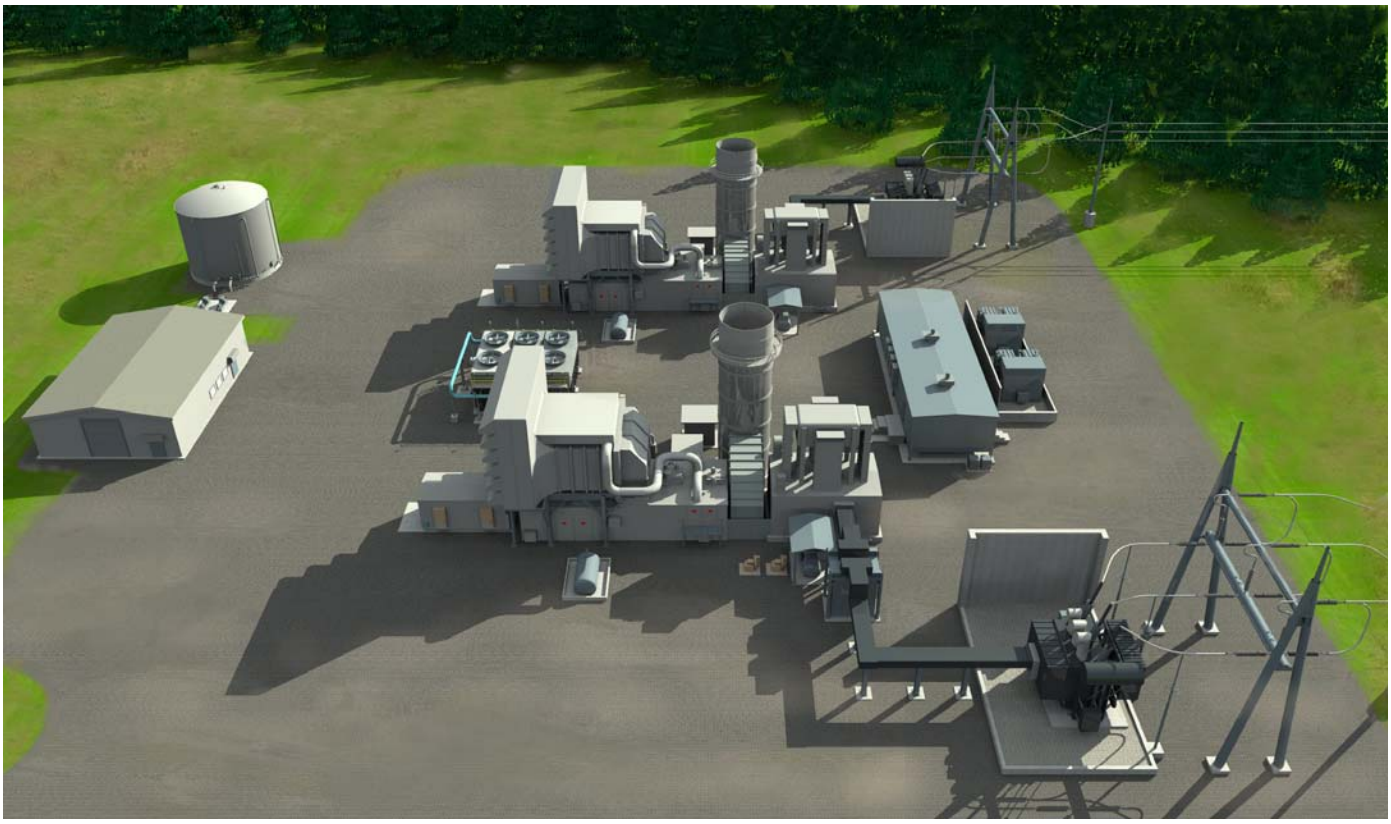
aerial view from Google Earth

Jacinto Site Plan Layout



Jacinto Site Plan superimposed on aerial view

Site Renderings



bird's eye view

ground level view

Siting & Environmental Considerations

- Transmission
- Fuel Supply
- Wetlands
- Land Use & Availability
- Floodplains
- Soils
- Vegetation
- Fisheries & Wildlife
- Threatened, Endangered,or Rare Species
- Cultural Resources
- Transportation
- Noise
- Health & Safety
- Socioeconomics
- Environmental Justice
- Visual Resources
- Recreation
- Radio, Television, and Cellular Phone Interference

Rural Utilities Service/National Environmental Policy Act Process

Analyze Alternatives

- Alternative Analysis
- Site Studies
- Screening Process

Notice of Intent

- RUS Federal Register Notice
- Announcement of Public Scoping Meetings

Scoping Coordination

- Review Project Area
- Scoping
- Coordination with Agencies
- Hold Public Meetings

Data Collection & Surveys

- Wetland
- Cultural Resources
- Threatened/Endangered Species
- Land Use
- Socioeconomic

Data & Survey Analysis

- Detailed Environmental Evaluation
- Prepare Environmental Report

Environmental Assessment & Notice of Availability

- Draft Environmental Assessment
- Publish Notice of Availability
- Finding of No Significant Impact

Public Review

- 30-day Public Review of Draft Environmental Assessment

Record of Decision

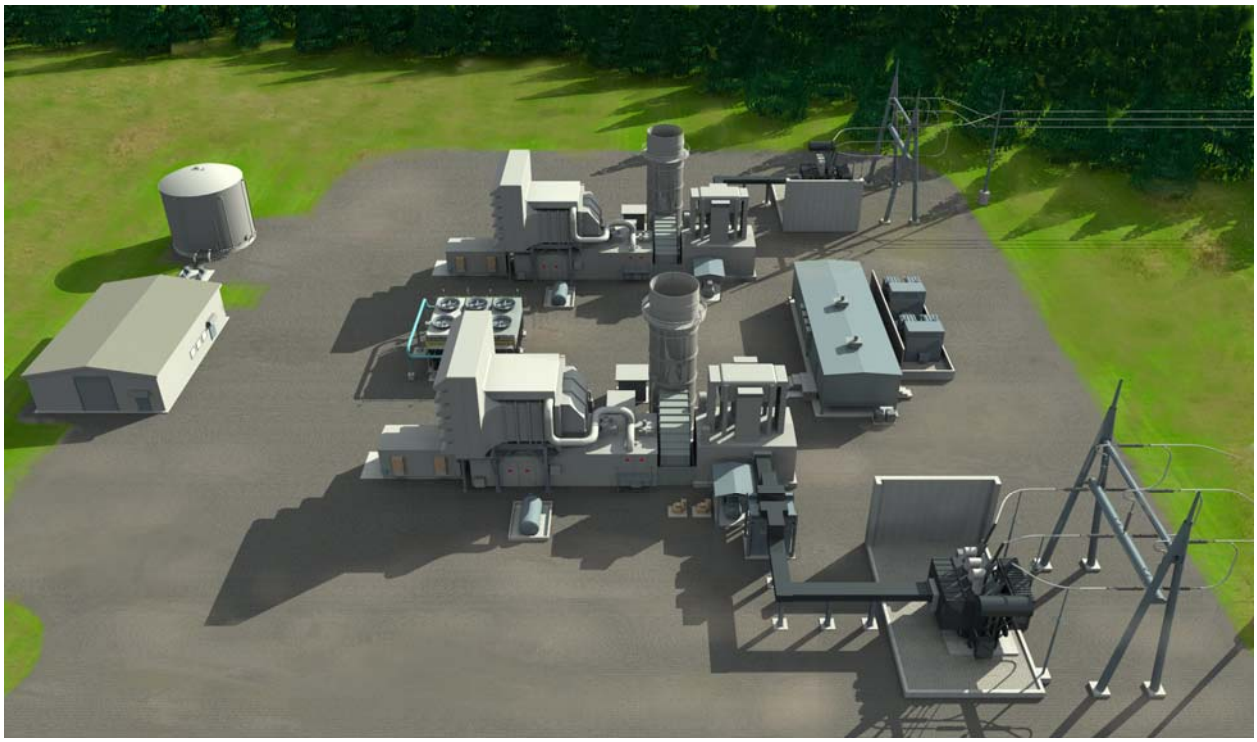
- Publish Record of Decision

ATTACHMENT G

EAST TEXAS ELECTRIC COOPERATIVE, INC.

JACINTO PEAKING POWER FACILITY

PROJECT FACT SHEET



Project Description

East Texas Electric Cooperative, Inc. (ETEC) proposes to construct and operate two simple-cycle natural gas-fired turbine-generators in San Jacinto County, Texas. The combustion turbines (CTs) will be used for electric generation and will consist of two GE 7EA units with nominal ratings of 84 megawatts each. The total generating capacity provided by the two CTs will be 168 megawatts.

The Jacinto site was selected from among several sites in east Texas to locate the two simple-cycle CTs. The site is a new, undeveloped “greenfield” site and offers nearby access to several existing natural gas pipelines and an electric transmission line.

The CTs will operate in simple-cycle mode (i.e., there will be no steam generation cycle). The absence of a steam generation cycle minimizes water requirements. The only water needs will include fire protection water and potable water. Employee sanitary facilities and storm run-off will be the only sources that generate wastewater. These water requirements will be met either by on-site wells or through a local water supplier.

Construction of the Project is expected to begin in the summer of 2008 and will be completed by the summer of 2009. The Project is expected to operate only during peak hours when needed to meet power and energy requirements in the region.

IMPACT SUMMARY TABLE

Fuel	The Project will use only clean-burning natural gas for operations. Natural gas will be supplied through interconnections with a major interstate gas pipeline located close to the Project site. No backup fuel oil will be used for operations, which will result in lower emissions and no need for fuel oil storage facilities or deliveries to the site.
Emissions	Power generation using natural gas fuel is the cleanest practical method of generating electrical power. The Project will utilize state-of-the-art technology to minimize air emissions.
Noise	The Project will be designed and operated to meet federal, state, and local noise regulations.
Permits	ETEC will secure all federal and state environmental permits required to ensure the Project does not have an adverse impact on the local environment. The Project will be constructed and operated in accordance with all applicable environmental and safety regulations at all times.
Water Usage	The Project requires only nominal amounts of water for drinking, sanitation and fire control. Water will be supplied from groundwater wells or by a local water supplier.
Land Use & Aesthetics	The Project will be designed and constructed to minimize impact on the surrounding area, and painted in neutral colors to decrease visibility. Low visibility, shielded, non-glare lighting fixtures will be used for site security.
Dust & Odors	During operations, the Project will generate no dust or odors. Dust from construction activities will be controlled with periodic water sprinkling.
Elevation	A power plant using combustion turbines is a low-profile facility compared to coal generating stations that can have stacks that reach a height of 400 feet or more. The anticipated stack height for this project is 53 feet.
Traffic	There will be a period of heightened traffic around the site during the construction period. Due to the rural nature of the surrounding area, traffic impacts are not expected. Once completed, the Project will require a small operating staff – generally only two personnel. The impact of traffic during operations will be minimal, and limited to employees, maintenance contractors, and occasional delivery trucks for parts and supplies.
Safety	The Project will be constructed, operated and maintained in accordance with applicable safety regulations and industry standards. The power plant personnel will be extensively trained to operate the Project in a safe and reliable manner.
Security	A security fence will be installed around the perimeter of the power plant to prevent access by children or other unauthorized persons.

<u>Contacts</u>

Edd Hargett	General Manager	East Texas Electric Cooperative, Inc. 2905 Westward Drive Nacogdoches, TX 75963 www.etec.coop	(936) 560-9532

ATTACHMENT H

East Texas Elec(Cooperative, Inc.
Public Meeting
Jacinto Peaking Power Facility

September 25, 2007
Shepherd, Texas

Sign-In Sheet

No.	Name	Address	Phone No. (optional)	Email Address (optional)
41	RONALD L. ENARD	229 S. Houston AVE Livingston TX	9363281230	rjenard@samhouston.net
42	DENNIS RANKIN	RUS. Washington	(202) 720-1953	dennis.rankin@wdc.usda.gov
43	WORLEY R. YOST	RUS GENERAL FIELD REP.	(501) 366-4268	worley.yost@wdc.usda.gov
44	Sam Gourley	RUS – Washington	202-720-2500	Sam.Gourley@wdc.usda.gov
45	EDD HALBERT	ETEC	936 560-9532	eddh@gtpower.com
46	Aaron Wagner	CPCE	817-249-1547	aaron@c-pce.com
47	L. A. WILLIAMS	GDS/ETEC		
48	BRUCE WALTER	GDS/ETEC		
49	KEITH STAPLETON	SAM HOUSTON EC	936-328-1290	kstapleton@samhouston.net
50	J.T. CARLILE	ETEC William J. Lyon & Assoc Inc		
51	DAN WITTLIFF	GDS	512 494 0369	dwittliff@austin.rr.com
52	Jake Lyon	Wm. J. Lyon + Assoc. Inc	936 632 7763	lyonappr@consolidated.net
53	Emily Streett	BBRS		es@bbrslaw.com
54	Kyle Kuntz	Sam Houston E.C.	936.328.1204	Kyle@SamHouston.NET
55				
56				
57				
58				
59				
60				

East Texas Elect(Cooperative, Inc.
Public Meeting
Jacinto Peaking Power Facility

September 25, 2007
Shepherd, Texas

Sign-In Sheet

No.	Name	Address	Phone No. (optional)	Email Address (optional)
1	Truitt Thomas			
2	Fred Manhart	10055 Grogans Mill Rd. The Woodlands TX	281-297-3304	fmanhar@entergy.com
3	Bobby Loesner	PO Box 397 Coldspring	936 767 4535	
4	Lula M. Fox	911 Ragsdale Springs Rd	936 628-3430	Shepherd TX
5	Fred E. Fox	" " " "	936 628-3430	
6	Jerry L. Wade	151 Pine Shadows Dr Shepherd	936-628-3270	JLW@crednet.com
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

ATTACHMENT I

TEXAS
PARKS &
WILDLIFE

COMMISSIONERS

JOSEPH B.C. FITZSIMONS
CHAIRMAN
SAN ANTONIO

DONATO D. RAMOS
VICE-CHAIRMAN
LAREDO

MARK E. BIVINS
AMARILLO

J. ROBERT BROWN
EL PASO

T. DAN FRIEDKIN
HOUSTON

NED S. HOLMES
HOUSTON

PETER M. HOLT
SAN ANTONIO

PHILIP MONTGOMERY
DALLAS

JOHN D. PARKER
LUFKIN

LEE M. BASS
CHAIRMAN-EMERITUS
FORT WORTH

ROBERT L. COOK
EXECUTIVE DIRECTOR

October 26, 2007

Dennis Rankin
Rural Development Utilities Programs
Engineering and Environmental Staff
1400 Independence Avenue, S.W.
Mail Stop 571
Washington, DC 20250

RE: Proposed construction of two separate 168 MW simple cycle combustion turbine generating stations, San Jacinto and Hardin Counties.

Dear Mr. Rankin:

The Texas Parks and Wildlife Department (TPWD) has received your request for information regarding potential impacts to threatened and endangered species and for information on other issues of concern relating to the project referenced above. Under section 12.0011 of the Texas Parks and Wildlife Code, TPWD is charged with "providing recommendations that will protect fish and wildlife resources to local, state, and federal agencies that approve, permit, license, or construct developmental projects" and "providing information on fish and wildlife resources to any local, state, and federal agencies or private organizations that make decisions affecting those resources."

The East Texas Electric Cooperative of Nacogdoches proposes to construct two separate 168 MW simple cycle combustion turbine generating stations in San Jacinto and Hardin Counties. The proposed San Jacinto County project is located approximately 5 miles south of Sheperd and 2 miles east of US Highway 59. The project will require the construction of less than 500 feet of transmission line to interconnect with Entergy's existing 138kV Jacinto-Poco transmission line. The proposed Hardin County project would be located approximately 6 miles southeast of Kountze and one-half mile west of US Highway 69/287 and will be adjacent to an existing Entergy electrical substation. The project will require the construction of a 1,200 foot 230 kV transmission line to interconnect with Entergy's existing Cypress substation.

ENJOY THE TEXAS OUTDOORS!

Take a kid hunting or fishing

• ● •

Visit a state park or historic site

Project Information

Due to the lack of information regarding the fish and wildlife impacts of the proposed project, it is not possible to adequately assess the potential impacts of this project upon fish and wildlife resources.

Recommendations: In general, an inventory of existing natural resources should be made of the project area. Specific evaluations should be designed to predict project impacts upon these natural resources. Sufficient documentation should be supplied to accurately interpret the value of the natural resources involved and the extent to which the project will impact these resources.

- This can often be accomplished best with aerial and ground photography, terrain maps, charts and tables, and narrative descriptions of these data.

More detailed information outlining the requirements and expectations of this Department concerning environmental assessments are attached in a document entitled, "***Texas Parks and Wildlife Suggested Guidelines for Preparation of Environmental Assessment Documents.***"

Vegetation Impacts

The project description does not include a summary of potentially impacted vegetation.

Recommendations: TPWD recommends that clearing of mature, native trees along the route be avoided. Loss of vegetation should be minimized by using site planning and construction techniques designed to avoid and preserve existing trees, shrubs, grasses, and forbs. *For impacts that are unavoidable, TPWD recommends transplanting the existing trees or replacing them at a ratio of 3 saplings for every tree lost.* Whether transplanted or replaced, a survival of 85% should be achieved. TPWD recommends that native plant and forage species that are beneficial to wildlife endemic to the area be used in mitigation and landscaped areas.

Rare Resources

According to records in the Texas Natural Diversity Database (TXNDD), occurrences of the following species have been documented possibly within the proposed Hardin County project area:

Federal and State Listed Endangered
Texas trailing phlox (*Phlox nivalis spp. texensis*)

Species of Concern
White firewheel (*Gaillardia aestivalis var. winkleri*)

Natural Communities and Special Features
Bluejack Oak-Longleaf Pine Series (*Quercus incana-Pinus plaustris series*)

The TXNDD is intended to assist users in avoiding harm to rare species or significant ecological features. Absence of information in an area does not imply that a species is absent from that area. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Although it is based on the best data available to TPWD regarding rare species, ***the data from the TXNDD do not provide a definitive statement as to the presences, absence or condition of special species, natural communities, or other significant features within your project area.*** These data are not inclusive and **cannot be used as presence/absence data**. They represent species that could potentially be in your project area. This information cannot be substituted for on-the-ground surveys.

The TXNDD is updated continuously. As your project progresses and for future projects, please contact Dorinda Scott at (512) 912-7023 or Dorinda.Scott@tpwd.state.tx.us for the most current and accurate information.

> **Recommendations:** The U.S. Fish and Wildlife Service (FWS) should be contacted for additional species occurrence data, guidance, permitting, survey protocols, and mitigation for federally listed species. Please review the most current TPWD county list, as rare species could be present depending upon habitat availability. These lists are now available on-line at http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species.phtml. If during construction, the project area is found to contain rare species, natural plant communities, or special features, TPWD recommends that precautions be taken to avoid impacts to them.

Migratory Birds

America's bird population has declined by over half since the 1960's. Many of these migratory species rely on riparian corridors as feeding, breeding and nesting areas. The Migratory Bird Treaty Act (MBTA) provides for a year round closed season for non-game birds and prohibits the taking of migratory bird nests and eggs, except as permitted by the FWS.

Recommendations: In order to protect migratory birds construction activities should occur outside the March – August migratory bird nesting season of each year the project is authorized and lasting for the life of the project. Construction activities include (but are not limited to) removal of nests or nest structures, tree felling as well as vegetation clearing, trampling, or maintenance.

Please contact the FWS Southwest Regional Office (Region 2) at (505) 248-6879 for further information.

Revegetation

Recommendations: TPWD recommends that the East Texas Electric Cooperative of Nacogdoches reseed disturbed soils with a mixture of grasses and forbs native to Hardin and San Jacinto Counties. To enhance native grasses available to wildlife in the project area, TPWD recommends that Bermuda grass be avoided to the extent possible in reseeding efforts, though TPWD understands that slopes may require certain grasses to control erosion.

For assistance in determining the best native seed mix for the project area, please contact our staff. Runoff control measures should be maintained until native plants have been reestablished on disturbed areas.

I appreciate the opportunity to provide preliminary input on potential impacts related to this project. Please provide a copy of the Environmental Assessment (EA) to TPWD for review and comment prior to application to the Public Utilities Commission for a Certificate of Convenience and Necessity.

TPWD strives to respond to requests for project review within the 45 day comment period. Responses may be delayed due to workload and lack of staff. Failure to meet the 45 day review timeframe does not constitute a concurrence from TPWD that the proposed project will not adversely impact fish and wildlife resources.

TPWD advises review and implementation of these recommendations. If you have any questions, please contact me at (361) 576-0022.

Sincerely,

Amy Hanna

Amy Hanna
Wildlife Habitat Assessment Program
Wildlife Division

/ajh:12167

Attachment

Element Occurrence Record

Scientific Name: *Gaillardia aestivalis var. winkleri* **Occurrence #:** 27 **Eo Id:** 8426

Common Name: white firewheel **TX Protection Status:**

Global Rank: G5T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

Go east on Highway 327 from Mill Creek ca. 0.25 mile to road, turn north and go ca. 1 mile, then west on Honey Grove Cemetery R ca. 0.8 mile; plants throughout sandhill pine forests west of Mill Creek and east of Village Creek.

Survey Information:

First Observation: 1994-07-25 **Survey Date:** 1994-07-25 **Last Observation:** 1994-07-25

Eo Type: **EO Rank:** A - Excellent estimated viability **EO Rank Date:** 1994-

Observed Area (acres):

Comments:

General Description: Sandy upland, restoration site for longleaf, young stands of Slash Pine plantation.

Comments:

Protection Comments:

Management Comments: The Nature Conservancy - Texas has a cooperative management agreement with Temple Inland for this site.

Data:

EO Data: Thousands of individuals in full sun.

Managed Area:

Managed Area Name:	Managed Area Ty
ROY E. LARSEN SANDYLAND SANCTUARY	PNCPR

Element Occurrence Record

Reference:

Full Citation:

SINGHURST, JASON RAY. 1996. MASTER'S THESIS. THE STATUS OF NINE ENDANGERED PLANTS OF EAST TEXAS: HISTORICAL, ECOLOGICAL, AND PHYTOGEOGRAPHICAL NOTES. STEPHEN F. AUSTIN STATE UNIVERSITY, AUGU 1996.

Specimen:

Stephen F. Austin State University Herbarium, Nacogdoches. 1994. Jason Singhurst #3476, Specimen # ? ASTC. 25 July 1994.

Element Occurrence Record

Scientific Name: *Gaillardia aestivalis var. winkleri* **Occurrence #:** 25 **Eo Id:** 8424

Common Name: white firewheel **TX Protection Status:**

Global Rank: G5T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

From junction of Highway 327 and Village Creek, go east ca. 0.2 mile from center of Village Creek bridge, turn south on sandy roa across from Sandylands Preserve entrance; both east and west of sandy road extending from Highway 327 southeasterly ca. 0.75-1.0 along east side of Village Creek.

Survey Information:

First Observation: 1994-06-22 **Survey Date:** 1994-06-22 **Last Observation:** 1994-06-22

Eo Type: **EO Rank:** A - Excellent estimated viability **EO Rank Date:** 1994-

Observed Area (acres):

Comments:

General Description: Plants in full sun on disturbed slash pine plantation on sandy upland with scattered longleaf pine; Pinus palustris, Q incana, Quercus stellata, Carya texana, Rhus copallina, and Quercus marilandica.

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: Several thousand individuals in flower and fruit.

Managed Area:

Element Occurrence Record

Managed Area Name:

Managed Area Ty

Reference:

Full Citation:

SINGHURST, JASON RAY. 1996. MASTER'S THESIS. THE STATUS OF NINE ENDANGERED PLANTS OF EAST TEXAS: HISTORICAL, ECOLOGICAL, AND PHYTOGEOGRAPHICAL NOTES. STEPHEN F. AUSTIN STATE UNIVERSITY, AUGU 1996.

Specimen:

Stephen F. Austin State University Herbarium, Nacogdoches. 1994. Jason Singhurst #3471, Specimen # ? ASTC. 22 June 1994.

Element Occurrence Record

Scientific Name: *Gaillardia aestivalis var. winkleri* **Occurrence #:** 24 **Eo Id:** 8423

Common Name: white firewheel **TX Protection Status:**

Global Rank: G5T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

Ca. 0.2 mile east of Mill Creek on Highway 327, then south 0.2-0.3 mile on unnamed road, plants east of road.

Survey Information:

First Observation: 1994-07-23 **Survey Date:** 1994-07-23 **Last Observation:** 1994-07-23

Eo Type: **EO Rank:** A - Excellent estimated viability **EO Rank Date:** 1994-

Observed Area (acres):

Comments:

General Description: Disturbed sandy upland longleaf pine savanna, clear cut.

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: Several hundred individuals in full sun.

Managed Area:

Managed Area Name: **Managed Area Ty**

Element Occurrence Record

Reference:

Full Citation:

SINGHURST, JASON RAY. 1996. MASTER'S THESIS. THE STATUS OF NINE ENDANGERED PLANTS OF EAST TEXAS: HISTORICAL, ECOLOGICAL, AND PHYTOGEOGRAPHICAL NOTES. STEPHEN F. AUSTIN STATE UNIVERSITY, AUGU 1996.

Specimen:

Stephen F. Austin State University Herbarium, Nacogdoches. 1994. Jason Singhurst #3467, Specimen # ? ASTC. 23 July 1994.

Element Occurrence Record

Scientific Name: *Gaillardia aestivalis var. winkleri* **Occurrence #:** 22 **Eo Id:** 8421

Common Name: white firewheel **TX Protection Status:**

Global Rank: G5T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

From junction of Highway 327 and Clear Lake Road west of Silsbee, go south on Clear Lake Road ca. 2.8 miles to where road splits three directions, take the sandy road that curves to the right (south). Plants occur along this sandy road from this three-way corner g south for ca. 0.7 miles on both the east and west sides of the sandy road.

Survey Information:

First Observation: 1994-06-22 **Survey Date:** 1994-06-22 **Last Observation:** 1994-06-22

Eo Type: **EO Rank:** A - Excellent estimated viability **EO Rank Date:** 1994-

Observed Area (acres):

Comments:

General Description: Sandy upland longleaf pine savanna; open with slash and longleaf pine mix forest, Pinus palustris, Pinus elliottii, Q incana, Quercus stellata, Rhus copallina, Carya texana, and Quercus marilandica. Plants in full sun on disturbed roa with periodic mowing and road grading.

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: Thousands of individuals in flower and fruit.

Managed Area:

Element Occurrence Record

Managed Area Name:

Managed Area Ty

Reference:

Full Citation:

SINGHURST, JASON RAY. 1996. MASTER'S THESIS. THE STATUS OF NINE ENDANGERED PLANTS OF EAST TEXAS: HISTORICAL, ECOLOGICAL, AND PHYTOGEOGRAPHICAL NOTES. STEPHEN F. AUSTIN STATE UNIVERSITY, AUGU 1996.

Specimen:

Stephen F. Austin State University Herbarium, Nacogdoches. 1994. Jason Singhurst #3469, Specimen # ? ASTC. 22 June 1994.

Element Occurrence Record

Scientific Name: *Phlox nivalis ssp. texensis* **Occurrence #:** 15 **Eo Id:** 2204

Common Name: Texas trailing phlox **TX Protection Status:** E

Global Rank: G4T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

SOUTH OF HIGHWAY 327 AND EAST OF VILLAGE CREEK

Survey Information:

First Observation: **Survey Date:** **Last Observation:**

Eo Type: **EO Rank:** **EO Rank Date:**

Observed Area (acres):

Comments:

General Description:

Comments:

Protection Comments:

Management Comments:

Data:

EO Data:

Managed Area:

Managed Area Name: **Managed Area Ty**

Element Occurrence Record

Reference:

Full Citation:

AJILVSGI, G. 1980. UNPUBLISHED NOTES AND MAPS ON PHLOX NIVALIS SSP. TEXENSIS

Specimen:

Element Occurrence Record

Scientific Name: *Gaillardia aestivalis var. winkleri* **Occurrence #:** 2 **Eo Id:** 8029

Common Name: white firewheel **TX Protection Status:**

Global Rank: G5T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

TRIBUTARY OF VILLAGE CREEK, 2.5 MILES WEST OF SILSBEE

Survey Information:

First Observation: 1945-10-02 **Survey Date:** **Last Observation:** 1949-07-09

Eo Type: **EO Rank:** **EO Rank Date:**

Observed Area (acres):

Comments:

General Description:

Comments:

Protection Comments:

Management Comments:

Data:

EO Data:

Managed Area:

Managed Area Name: **Managed Area Ty**

Element Occurrence Record

Reference:

Full Citation:

CORY, V.L. 1946. A WHITE GAILLARDIA IN TEXAS. MADRONO 8(8):263-264.

TURNER, B.L. 1979. GAILLARDIA AESTIVALIS VAR. WINKLERI (ASTERACEAE), A WHITE-FLOWERED TETRAPLOID TAXON ENDEMIC TO SOUTHEASTERN TEXAS. SOUTHWESTERN NATURALIST 24(4):621-624.

Specimen:

Southern Methodist University Herbarium. 1945. V.L. Cory #49885, 49895a, 49879, Specimen # ? SMU. 2 October 1945.

Southern Methodist University Herbarium. 1949. V.L. Cory #56669, Specimen # none SMU. 9 July 1949. Type Locality.

Element Occurrence Record

Scientific Name: *Gaillardia aestivalis var. winkleri* **Occurrence #:** 7 **Eo Id:** 7391

Common Name: white firewheel **TX Protection Status:**

Global Rank: G5T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

SANDHILLS NEAR CLEAR LAKE, BETWEEN KOUNTZE AND SILSBEE

Survey Information:

First Observation: **Survey Date:** **Last Observation:** 1970-08-26

Eo Type: **EO Rank:** **EO Rank Date:**

Observed Area (acres):

Comments:

General Description: SANDHILLS

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: "FLOWERS CREAMY WHITE"

Managed Area:

Managed Area Name: **Managed Area Ty**

Element Occurrence Record

Reference:

Full Citation:

Specimen:

SOUTHERN METHODIST UNIVERSITY HERBARIUM. 1970. P. AMERSON #239 AND G. WATSON, SPECIMEN # ? SMU. AUGUST 1970.

Element Occurrence Record

Scientific Name: *Phlox nivalis ssp. texensis* **Occurrence #:** 3 **Eo Id:** 6835

Common Name: Texas trailing phlox **TX Protection Status:** E

Global Rank: G4T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020003	Lower Neches

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

3.4 MILES WEST OF THE JUNCTION OF HIGHWAYS 327 AND 96 IN SILSBEE, NORTH OF HIGHWAY 327 IN THE ROY E LARSEN SANDYLAND SANCTUARY

Survey Information:

First Observation: 1931-04-04 **Survey Date:** **Last Observation:** 198?

Eo Type: **EO Rank:** **EO Rank Date:**

Observed Area (acres): 3

Comments:

General Description: MOIST, OPEN, PINE-OAK WOODLANDS; SANDY SOIL

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: FREQUENT

Managed Area:

Managed Area Name:	Managed Area Ty
ROY E. LARSEN SANDYLAND SANCTUARY	PNCPR

Element Occurrence Record

Reference:

Full Citation:

MCWHORTER, IKE. BIORESERVE DIRECTOR, PINEYWOODS CONSERVATION INITIATIVE, P.O. BOX 909, SILSBEE, TEXAS 77656-0909. PHONE (409) 385-0445.

MCWHORTER, IKE. 1991. MAP OF PHLOX NIVALIS SSP TEXENSIS LOCALITIES IN AND NEAR ROY E. LARSEN SANDYLANDS PRESERVE.

Specimen:

University of Texas at Austin Herbarium. 1931. Eula Whitehouse (s.n.), Specimen # 117113 TEX. 4 April 1931.

Texas A & M University, Tracy Herbarium. 1947. V.L. Cory #52790, Specimen # 54992 TAES. 9 April 1947.

Southern Methodist University Herbarium. 1947. V.L. Cory #52790, Specimen # none SMU. 9 April 1947.

Element Occurrence Record

Scientific Name: *Quercus incana-pinus palustris series* **Occurrence #:** 1 **Eo Id:** 5083

Common Name: Bluejack Oak-longleaf Pine Series **TX Protection Status:**

Global Rank: G4 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-D2	Deserter Baygall	TX
		30094-C2	Silsbee	TX
		30094-C3	Kountze South	TX
		30094-D3	Kountze North	TX

Directions:

FROM TX327 UPSTREAM ALONG EAST SIDE OF VILLAGE CREEK TO TX418 CROSSING, WEST OF SILSBEE

Survey Information:

First Observation: 1986 **Survey Date:** 1986-04-10 **Last Observation:** 1986-04

Eo Type: **EO Rank:** B - Good estimated viability **EO Rank Date:**

Observed Area (acres): 1,000

Comments:

General Description: MATURING BLUEJACK OAK-LONGLEAF PINE COMMUNITY ON DEEP SAND ADJACENT TO FLOODPL FOREST; MANY ENDEMIC, RARE, AND DISJUNCT SANDHILL PLANTS

Comments:

Protection Comments: ACTIVE MANAGEMENT FOR CONSERVATION IS UNDERWAY

Management Comments:

Data:

EO Data:

Element Occurrence Record

Managed Area:

Managed Area Name:	Managed Area Ty
ROY E. LARSEN SANDYLAND SANCTUARY	PNCPR

Reference:

Full Citation:

MCWHORTER, IKE. BIORESERVE DIRECTOR, PINEYWOODS CONSERVATION INITIATIVE, P.O. BOX 909, SILSBEE, TEXAS 77656-0909. PHONE (409) 385-0445.

DIAMOND, D.D., I. BUTLER, N.J. CRAIG, AND T. FOTI. 1986. A SURVEY OF THE POTENTIAL NATIONAL NATURAL LANDMARKS OF THE WEST GULF COASTAL PLAIN: BIOTIC THEMES. USDOI, NPS, WASHINGTON, D.C.

Specimen:

Element Occurrence Record

Scientific Name: *Gaillardia aestivalis var. winkleri* **Occurrence #:** 11 **Eo Id:** 4878

Common Name: white firewheel **TX Protection Status:**

Global Rank: G5T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

FROM JUNCTION OF KIWANIS ROAD AND HIGHWAY 327, GO 0.6 MILE SOUTH ON KIWANIS ROAD, THEN WEST ON UNNAMED ROAD; FROM 0.0-0.2 MILE ON UNNAMED ROAD, ON NORTH SIDE OF ROAD; CA. 1.8 AIR MILES EAST-SOUTHEAST OF JUNCTION OF VILLAGE CREEK AND HIGHWAY 327

Survey Information:

First Observation: 1994-07-23 **Survey Date:** 1994-07-23 **Last Observation:** 1994-07-23

Eo Type: **EO Rank:** A - Excellent estimated viability **EO Rank Date:** 1994-

Observed Area (acres): 20

Comments:

General Description: CLEAR CUT; UPLAND SANDHILL, SANDY DISTURBED LONGLEAF PINE SAVANNA

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: SEVERAL HUNDRED INDIVIDUALS IN FULL SUN

Managed Area:

Element Occurrence Record

Managed Area Name:

Managed Area Ty

Reference:

Full Citation:

SINGHURST, JASON RAY. 1996. MASTER'S THESIS. THE STATUS OF NINE ENDANGERED PLANTS OF EAST TEXAS: HISTORICAL, ECOLOGICAL, AND PHYTOGEOGRAPHICAL NOTES. STEPHEN F. AUSTIN STATE UNIVERSITY, AUGU 1996.

Specimen:

STEPHEN F. AUSTIN STATE UNIVERSITY HERBARIUM, NACOGDOCHES. 1994. JASON SINGHURST #3468, SPECIEN # NONE ASTC. 23 JULY 1994.

Element Occurrence Record

Scientific Name: *Gaillardia aestivalis var. winkleri* **Occurrence #:** 4 **Eo Id:** 2509

Common Name: white firewheel **TX Protection Status:**

Global Rank: G5T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C2	Silsbee	TX

Directions:

UPLANDS ALONG HIKING TRAIL AND ALONG SAND ROAD, SOUTHERN QUARTER OF ROY E. LARSEN SANDYLANI PRESERVE; JUNCTION OF VILLAGE CREEK AND HIGHWAY 327, EAST OF VILLAGE CREEK 0.2 MILE ON HIGHWAY : NORTH INTO ROY E. LARSEN SANDYLANDS PRESERVE

Survey Information:

First Observation: 1990-09-21 **Survey Date:** 1994-07-25 **Last Observation:** 1994-07-25

Eo Type: **EO Rank:** **EO Rank Date:**

Observed Area (acres):

Comments:

General Description: OPENINGS IN SANDHILL PINE UPLAND

Comments: MAPPED AT ONE SITE, (WITHIN PRESERVE) BUT TO BE EXPECTED THROUGHOUT UPLANDS IN DEEI LOOSE SAND

Protection Comments:

Management Comments:

Data:

EO Data:

Managed Area:

Element Occurrence Record

Managed Area Name:
ROY E. LARSEN SANDYLAND SANCTUARY

Managed Area Ty
PNCPR

Reference:

Full Citation:

CARR, W.R. 1990. FIELD SURVEY OF ROY E. LARSEN SANDYLAND PRESERVE FOR SILENE SUBCILIATA ON 21 SEPTEMBER 1990.

SINGHURST, JASON RAY. 1996. MASTER'S THESIS. THE STATUS OF NINE ENDANGERED PLANTS OF EAST TEXAS: HISTORICAL, ECOLOGICAL, AND PHYTOGEOGRAPHICAL NOTES. STEPHEN F. AUSTIN STATE UNIVERSITY, AUGU 1996.

Specimen:

Element Occurrence Record

Scientific Name: *Phlox nivalis ssp. texensis* **Occurrence #:** 7 **Eo Id:** 1916

Common Name: Texas trailing phlox **TX Protection Status:** E

Global Rank: G4T2 **State Rank:** S2

Location Information:

Watershed Code:	Watershed Description:
12020006	Village

County Code:	County Name:	Mapsheet Code:	Mapsheet Name:	State
TXHRDN	Hardin	30094-C3	Kountze South	TX

Directions:

5 MILES SOUTHEAST OF KOUNTZE

Survey Information:

First Observation: **Survey Date:** **Last Observation:**

Eo Type: **EO Rank:** **EO Rank Date:**

Observed Area (acres):

Comments:

General Description:

Comments:

Protection Comments:

Management Comments:

Data:

EO Data:

Managed Area:

Managed Area Name: **Managed Area Ty**

Element Occurrence Record

Reference:

Full Citation:

WHERRY, E. T. 1955. THE GENUS PHLOX. MORRIS ARBORETUM MONOGRAPHS III. 1-174

Specimen:

Code Key for Printouts from Texas Parks and Wildlife Department Natural Diversity Database (NDD)

This information is for your assistance only; due to continuing data updates, vulnerability of private land to trespass and of species to disturbance or collection, **please do not publish in public documents or otherwise reprint or redistribute the information, instead refer all requesters to our office to obtain the most current information available.** Also, please note, identification of a species in a given area does not necessarily mean the species currently exists at the point or area indicated.

LEGAL STATUS AND CONSERVATION RANKS

FEDERAL STATUS (as determined by the US Fish and Wildlife Service)

LE	Listed Endangered
LT	Listed Threatened
PE	Proposed to be listed Endangered
PT	Proposed to be listed Threatened
PDL	Proposed to be Delisted (Note: Listing status retained while proposed)
E/SA, T/SA	Listed Endangered on basis of Similarity of Appearance, Listed Threatened on basis of Similarity of Appearance
DL	Delisted Endangered/Threatened
C1	Candidate, Category 1. USFWS has substantial information on biological vulnerability and threats to support proposing to list as threatened or endangered. Data are being gathered on habitat needs and/or critical habitat designations.
C1*	C1, but lacking known occurrences
C1**	C1, but lacking known occurrences, except in captivity/cultivation
XE	Essential Experimental Population
XN	Non-essential Experimental Population
Blank	Species is not federally listed

TX PROTECTION (as determined by the Texas Parks and Wildlife Department)

E	Listed Endangered
T	Listed Threatened
Blank	Species not state-listed

GLOBAL RANK (as determined by NatureServe)

G1	Critically imperiled globally, extremely rare, typically 5 or fewer viable occurrences
G2	Imperiled globally, very rare, typically 6 to 20 viable occurrences
G3	Very rare and local throughout range or found locally in restricted range, typically 21 to 100 viable occurrences
G4	Apparently secure globally
G5	Demonstrably secure globally
GH	Of historical occurrence through its range
GU	Possibly in peril range-wide, but status uncertain
G#G#	Ranked within a range as status uncertain
GX	Apparently extinct throughout range
Q	Rank qualifier denoting taxonomic assignment is questionable
#?	Rank qualifier denoting uncertain rank
C	In captivity or cultivation only
G#T#	"G" refers to species rank; "T" refers to variety or subspecies rank

STATE (SUBNATIONAL) RANK (as determined by the Texas Parks and Wildlife Department)

S1	Critically imperiled in state, extremely rare, vulnerable to extirpation, typically 5 or fewer viable occurrences
S2	Imperiled in state, very rare, vulnerable to extirpation, typically 6 to 20 viable occurrences
S3	Rare or uncommon in state, typically 21 to 100 viable occurrences
S4	Apparently secure in State
S5	Demonstrably secure in State
S#S#	Ranked within a range as status uncertain
SH	Of historical occurrence in state and may be rediscovered
SU	Unrankable – due to lack of information or substantially conflicting information
SX	Apparently extirpated from State
SNR	Unranked – State status not yet assessed
SNA	Not applicable – species id not a suitable target for conservation activities
?	Rank qualifier denoting uncertain rank in State

Revised 15 Feb 2006

ELEMENT OCCURRENCE RECORD

Element Occurrence Record (EOR) Spatial and tabular record of an area of land and/or water in which a species, natural community, or other significant feature of natural diversity is, or was, present and associated information; may be a single contiguous area or may be comprised of discrete patches or subpopulations

Occurrence # Unique number assigned to each occurrence of each element when added to the NDD

LOCATION INFORMATION

Watershed Code Eight digit numerical code determined by US Geological Survey (USGS)

Watershed Name of watershed as determined by USGS

Quadrangle Name of USGS topographical map

Directions Directions to geographic location where occurrence was observed, as described by observer or in source

SURVEY INFORMATION

First/Last Observation Date a particular occurrence was first/last observed; refers only to species occurrence as noted in source and does not imply the first/last date the species was present

Survey Date If conducted, date of survey

EO Type State rank qualifiers:

- **M** Migrant – species occurring regularly on migration at staging areas, or concentration along particular corridors; status refers to the transient population in the State
- **B** Qualifier indicating basic rank refers to the breeding population in State
- **N** Qualifier indicating basic rank refers to the non-breeding population in State

EO Rank

A	Excellent	**AI**	Excellent, Introduced
B	Good	**BI**	Good, Introduced
C	Marginal	**CI**	Marginal, Introduced
D	Poor	**DI**	Poor, Introduced
E	Extant/Present	**EI**	Extant, Introduced
H	Historical/No Field Information	**HI**	Historical, Introduced
X	Destroyed/Extirpated	**XI**	Destroyed, Introduced
O	Obscure	**OI**	Obscure, Introduced

EO Rank Date Latest date EO rank was determined or revised

Observed Area Acres, unless indicated otherwise

COMMENTS

Description General physical description of area and habitat where occurrence is located, including associated species, soils, geology, and surrounding land use

Comments Comments concerning the quality or condition of the element occurrence at time of survey

Protection Comments Observer comments concerning legal protection of the occurrence

Management Comments Observer comments concerning management recommendations appropriate for occurrence conservation

DATA

EO Data Biological data; may include number of individuals, vigor, flowering/fruiting data, nest success, behaviors observed, or unusual characteristic, etc.

SITE

Site Name Title given to site by surveyor

MANAGED AREA INFORMATION

Managed Area Name Place name or (on EOR printout) name of area when the EO is located within or partially within an area identified for conservation, such as State or Federal lands, nature preserves, parks, etc.

Alias Additional names the property is known by

Acres Total acreage of property, including non-contiguous tracts

Manager Contact name, address, and telephone number for area or nearest area land steward

Please use the following citation to credit the source for the printout information:

Texas Parks and Wildlife Department, Wildlife Division Diversity Program, Natural Diversity Database [date(s) posted on printouts].

Texas Parks and Wildlife Department Suggested Guidelines for Preparation of Environmental Assessment Documents

Following is an outline of categories of information needed to evaluate a proposed project or action. Every effort should be made to supply quantified data. If subjective data is all that can be supplied, documentation verifying the credentials of the data collector should be provided.

An asterisk notes categories considered essential for adequate biological review by this agency (*). Depending on the complexity and scope of the proposed project or action, or requirements by other agencies, all the items listed below may be required.

Whenever practical, environmental documents should be supported by aerial photography, topographic maps, schematics, charts, tables, etc. with minimum narrative sufficient to describe, quantify, and qualify the data.

A. Project Description

* • Identify who is proposing the project.

* • Identify who is conducting the assessments and provide credentials of this person(s).

* • Describe the purpose of the project.

* • Define the scope of work.

* • Identify the project area and study area (total acres, miles of ROW)

* • Identify the timetable projected for the entire project

* • Describe any required coordination and review for the project.

* • List or describe any required public input.

• Provide historical information significant to the project.

B. Description of the Affected Environment

1. Natural Resources

• Describe the geology within the study area.

* • Describe the soils present and their characteristics.

* • Describe the landform (topography) and the natural processes impacting the present landform.

• Describe the climatic factors affecting the study area.

* • Describe the supply and quality of surface water resources in the study area.

* • Describe the supply and quality of groundwater resources including aquifer recharge zones occurring within the study area.

* • Describe natural hazards affecting the study area, i.e. tidal influences, flood activity, etc.).

• Describe the quality of the air in the study area.

* • Describe the vegetation communities (cover type) specifically impacted by the project to include: dominant plant species, estimated

height of trees, woody shrubs or brush; and estimated canopy coverage of woody vegetation. Total acreage of each cover type disturbed by the project should also be listed.

* • Describe the fauna that would be associated with the dominant vegetation cover types identified above.

* • Identify "sensitive" ecosystems which occur in the study area such as: springs, streams, rivers, floodplains, vegetation corridors, bottomland hardwoods, wetlands, bays, estuaries, native grasslands, etc.

* • Describe the occurrence of threatened/endangered species (or their habitats) and unique or rare natural communities which occur in the study area.

a. On site inspection of the study area for permanent or seasonal occurrence.

b. On site inspection of the study area for occurrence of habitat.

c. Interviews with recognized experts on all species with a potential of occurrence.

d. Literature review of data applicable to a potential occurring species concerning species distribution, habitat needs, and biological requirements.

2. Cultural Resources

* • Identify public use and open space areas in the vicinity of the proposed project such as parks, natural areas, wildlife preserves and management areas.

• Identify previous, present, and proposed land uses within the study area.

• Identify significant archeological features within the study area.

• Identify significant historical features in the study area with special consideration of "National Register of Historic Places" properties.

• Identify rights-of-ways, easements, public utilities, and transportation features within the study area.

• Identify noise pollution sources and current noise levels within the study area.

• Identify existing and proposed public health and hazardous waste facilities that exist in the study area such as land fills, hazardous waste sites, wastewater treatment facilities, septic tanks, etc.

• Identify socioeconomic factors, if applicable.

*C. Project Alternatives

List and describe project alternatives (including "no action") and associated impacts (direct and indirect) to described resources. If the project is potentially large in scope, cumulative effects with other similar projects may be required.

*D. Mitigation

A major responsibility of TPWD is to conserve and protect the state's fish, wildlife, and plant resources. Certain categories of these biotic resources warrant special consideration. These include habitats that are locally and regionally scarce, habitats supporting unique species or communities, stream and river ecosystems, bays, estuaries, wetlands, bottomland hardwoods, and native grasslands. All projects that could adversely affect these resources should be fully evaluated, and where possible, implementation of less damaging alternatives undertaken. If it is determined that a project or action will potentially affect fish, wildlife or plant resources, a process for adverse impact reduction should be initiated. Mitigation measures should be developed and implemented sequentially as follows:

1. AVOIDANCE: Avoiding adverse impacts through changes in project location, design, operation, or maintenance procedures, or through selection of other less damaging alternatives to the project or action.

2. MINIMIZATION: Minimizing impacts and by project modification or rectification to restore or improve impacted habitat to pre-project condition; or through reducing the impacts over time by preservation and maintenance operations during the life of the project or action.

3. COMPENSATION: Compensating for unavoidable impacts by providing replacement or substitute resources (including appropriate management) for losses caused by project construction, operation, or maintenance.

Mitigation should be an integral part of any action or project that adversely affects fish, wildlife, and habitats upon which they depend. Failure to adequately avoid or minimize adverse impacts or to adequately compensate for unavoidable losses of natural resources is a serious deficiency in any project plan and may cause delays in this Department's review and assessment of the adverse impacts upon fish & wildlife resources. In assessing project impacts, reasonable foreseeable secondary and cumulative impacts should be included.

*E. Coordination

Provide copies of pertinent coordination correspondence.

*F. Document Preparers and Their Qualifications

*G. Bibliography

(References: 40 CFR Parts 1500-1508 and various EPA handouts concerning Environmental Assessment documentation.)