Sound Environmental Solutions, Inc.

BIOLOGICAL ASSESSMENT

FOR

THE PROPOSED EXPANSION OF THE RAMSEY GAS PLANT
LOCATED IN REEVES COUNTY, TEXAS

PREPARED FOR

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BY

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EXECUTIVE SUMMARY

Nuevo Midstream, LLC (Nuevo) is proposing to expand the Ramsey Gas Plant (Ramsey), which is a natural gas processing plant, located on an approximately 50 acre piece of property near Orla in Reeves County, Texas. The expansion is designed to process up to 200 million standard cubic feet per day (MMscf/d) of rich natural gas in each of three additional trains. Amongst other authorizations, Nuevo is seeking a permit under the Environmental Protection Agency's (EPA) Greenhouse Gas (GHG) Prevention of Significant Deterioration (PSD) Program to construct the expansion of the Ramsey Plant.

Pursuant to Section 7 of the Endangered Species Act (ESA), EPA will review the project's potential effects on listed threatened and endangered species under the Federal Endangered Species Act (ESA) of 1973, as amended, as part of the PSD permitting process. Sound Environmental Solutions, Inc. (SES) was retained by Nuevo to prepare this Biological Assessment (BA). SES consulted with Endangered Species Act Consulting Services, LLC (ESACS) during the preparation of this assessment.

The objective of this BA was to determine the potential effects of the proposed expansion on animal and plant species that are protected under the ESA and listed by the US Fish and Wildlife Service (FWS) and the Texas Parks and Wildlife Department (TPWD) in Reeves County, Texas. This BA provides the necessary information to describe how construction and operation of the proposed expansion of the Ramsey Gas Plant will fully comply with requirements in section 7(a)(2) of ESA and 50 C.F.R. Part 402 (Interagency Cooperation – Endangered Species Act of 1973, as amended).

The currently permitted Ramsey Plant occupies about 21.6 acres on the north half of the 50-acre property. The expansion (Ramsey IV through VI) will be collocated on the same property, occupying approximately 28.5 acres immediately to the south of the existing Plant. This area has already been cleared and graded, as it was used as laydown and temporary work space during the construction of Ramsey II and III. The expansion will take place on an existing site adjacent to existing facilities, and so there are no additional linear features associated with the expansion, as the access roads and pipelines are already in place and the existing site is large enough to accommodate any temporary workspaces and laydown areas. Atmospheric dispersion modeling has shown that all concentrations of pollutants are at or below EPA significant impact levels (SIL) at the facility's boundaries. Therefore, the "Action Area" for this report includes everything within the expansion boundary.

The BA was based on a literature review and field observations. The first step was to conduct a literature review to locate published research concerning potential effects on wildlife species considered for evaluation in this BA. Information and literature reviewed regarding the life histories and habitat requirements of the species under consideration included state and federal agency reports, management documents, peer-reviewed scientific literature, and online data provided by NatureServe, the U.S. Fish and Wildlife Service (FWS or Service) and the Texas Parks and Wildlife Department (TPWD). This BA was also based on the on-site field survey and the direct observations made of the project and surrounding areas. This BA was prepared in

accordance with guidelines provided in 50 C.F.R. Part 402.12 (Consultation Procedures, Biological Assessments).

The federal and state listed species that were reviewed and the results of the assessment are summarized in the Table below:

Determination of Effect Summary

Common Name	USFWS List Status	TPWD List Status	Determination of Effect	Comments
Northern Aplomado Falcon	E	LE	No Effect	Previously extirpated in Texas. Reintroduced in limited areas. The closest known community is 90 miles away from the Action Area.
Mexican Spotted Owl	T		No Effect	Live in old growth forests – none in area. The closest known community is 45 miles away from the Action Area
Interior Least Tern		LE	No Effect	No habitat in area. The closest known community is approximately 200 miles from the Action Area.
Diminutive Amphipod	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.
Comanche Springs Pupfish	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.
Pecos Gambusia	E		No Effect	No habitat in

Common Name	USFWS List Status	TPWD List Status	Determination of Effect	Comments
				area. The nearest potential habitat is 70 miles from the Action Area.
Black-Footed Ferret		LE	No Effect	Extirpated in Texas. The species is dependant upon Prairie Dogs. No prairie dogs in area, so also no Black-Footed Ferrets in area. The nearest known community is 275 miles from the Action Area.
Gray Wolf		LE	No Effect	Extirpated in Texas. None in area. The nearest known community is over 675 miles from the Action Area.
Phantom Springsnail	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.
Phantom Tryonia	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.
Pecos Assiminea Snail	E		No Effect	No habitat in area. The nearest potential habitat is 70

Common Name	USFWS List Status	TPWD List Status	Determination of Effect	Comments
				miles from the Action Area.
Pecos/Puzzle Sunflower	T	LT	No Effect	Not in area. The nearest potential habitat is 70 miles from the Action Area.

.As can be seen from the Table, of the 12 species reviewed, the habitat for 7 of them is at least 70 miles from the Action Area. The Mexican Spotted Owl's closest known community is at least 45 miles away, and the remaining species have communities that are from 90 to 675 miles from the Action Area. Accordingly, there will be no effect on any threatened or endangered species as a result of the proposed expansion.

1.0 INTRODUCTION

Nuevo Midstream, LLC (Nuevo) owns and operates the Ramsey Gas Plant, which is a natural gas processing facility near Orla in Reeves County, Texas. The Plant currently has three trains with a capacity of 300 million standard cubic feet/day (MMscf/d). The continued development of shale plays in the area has resulted in the need for additional processing and treating capacity. Consequently, Nuevo is proposing to add an additional three trains to increase the total plant capacity to 900 MMscf/d.

The project is subject to Prevention of Significant Deterioration (PSD) review for carbon monoxide (CO), nitric oxides (NO_X), volatile organic compounds (VOCs) including Hazardous Air Pollutants (HAPs), particulate matter (PM) and sulfur dioxide (SO_2) by the Texas Commission on Environmental Quality (TCEQ) and review of greenhouse gases (GHG) by the United States (US) Environmental Protection Agency (EPA). The requirements for these permits include emission controls and standards that meet the TCEQ and US EPA Best Available Control Technology (BACT) guidelines. The proposed facilities will use emission controls that satisfy all requirements of the PSD as described in the permit applications.

1.1 Scope of Work

The objective of this BA was to research, evaluate, analyze, and document the potential for direct and indirect effects, interdependent and interrelated actions and cumulative effects on federally protected species as a result of the proposed project. This Biological Assessment (BA) was designed to be an evaluation of the potential environmental impacts the proposed project may have on federally protected species and/or their potential habitats. Protected species evaluated in this document include federally listed threatened and endangered birds, fish, reptiles, mollusks, snails, mammals, and plant species. The assessment included a complete walkthrough of the entire facility site, along with a drive through of the surrounding area, supplemented by walking some of that area.

The conclusion of this BA includes a recommended determination of effect on federally protected species and their habitat. There are three possible determinations offered by the US Fish and Wildlife Service (USFWS) for the purpose of BA and Biological Evaluations are described (verbatim) below:[1]

1. **No effect** – A "no effect" determination means that there are absolutely no effects from the proposed action, positive or negative, to listed species. A "no effect" determination does not include effects that are insignificant (small in size), discountable (extremely unlikely to occur), or beneficial. "No effect" determinations do not require written concurrence from the Service. However, the Service may request copies of 'no effect' assessments for our files.

2. **May affect, not likely to adversely affect** – A "may affect, not likely to adversely affect" determination may be reached for a proposed action where all effects are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without any adverse effects to the species or habitat (i.e., there cannot be a "balancing,"

where the benefits of the proposed action would be expected to outweigh the adverse effects - see below). Insignificant effects relate to the size of the effects and should not reach the scale where take occurs. Discountable effects are those that are extremely unlikely to occur. This conclusion is usually reached through the informal consultation process, and written concurrence from the Service exempts the proposed action from formal consultation. The federal action agency's written request for Service concurrence should accompany the biological assessment/biological evaluation.

3. **May affect, likely to adversely affect** – A "may affect, likely to adversely affect" determination means that all adverse effects cannot be avoided. A combination of beneficial and adverse effects is still "likely to adversely affect" even if the net effect is neutral or positive. Section 7 of the Endangered Species Act requires that the federal action agency request initiation of formal consultation with the Service when a "may affect, likely to adversely affect" determination is made. A written request for formal consultation should accompany the biological assessment/biological evaluation.

2.0 AGENCY REGULTIONS

2.1 Regulations and Standards

The Clean Air Act requires development and implementation of air quality standards to protect public health and the environment. These standards are called the National Ambient Air Quality Standards (NAAQS) and are regulated in Texas by a combination of the US EPA and TCEQ. The NAAQS are concentration limits of pollutants in ambient air over specific averaging times. The averaging time is the time period over which the air pollutant concentrations must be met to comply with the NAAQS. The NAAQS are classified into two categories: primary and secondary standards. Primary standards are set to protect public health, including "sensitive" populations. Secondary standards are set to protect public welfare, including the environment.[2]

The US EPA sets NAAQS for six principle air pollutants, which are also often referred to as criteria air pollutants. These six criteria air pollutants are nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), particulate matter (PM), carbon monoxide (CO) and lead (Pb).[2] A geographic area whose ambient air concentration for a criteria pollutant is equal to or less than the primary standard is an attainment area. A geographic area with an ambient air concentration greater than the primary standard is a nonattainment area. A geographic area will have a separate designation for each criteria pollutant.[3]

To demonstrate compliance with NAAQS and other applicable air quality standards and guidelines, an air quality analysis is performed using computer models to stimulate the dispersion of the emitted pollutants into the atmosphere and to predict ground level concentrations at specific receptor locations in the area around the source of the emissions. If the modeled concentration for a given pollutant and averaging period is less than the US EPA-specific significant impact level (SIL), the project is determined to have no significant impact on ambient air quality, and no further analysis is required for that pollutant and averaging period. If the SIL is predicted by the model to be exceeded for a given pollutant, further analysis of the project emissions combined with existing conditions in the area is required to estimate total ambient concentrations. This analysis must demonstrate that the total concentration does not exceed the applicable NAAQS.

2.2 Endangered Species Act

The USFWS and the National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NOAA – NMFS) are responsible for implementing the Endangered Species Act (ESA) of 1973. "The purpose of the ESA is to protect and recover imperiled species and the ecosystems on which they depend."[4] Imperiled species for the purposes of this BA, were defined specifically to include those defined by the USFWS as threatened and endangered.[4] The Wildlife Diversity Program of the Texas Parks and Wildlife Department website was also consulted for federally listed threatened and endangered species.[5]

Section 9 of the ESA prohibits the "take" of threatened and endangered species. The "Take" definition includes: "harassment, harm, pursue, hunt, shoot, wound, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" is defined as "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it

actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."[6]

3.0 PROJECT DESCRIPTION

3.1 Project Overview and Action Area

3.1.1 Project Overview

The purpose of the project is to construct and operate three new trains (Plants IV through VI) at the existing Ramsey Gas Plant, which is a natural gas processing facility located in Reeves County, Texas. This expansion is proposed because continued development of shale gas plays in the area has resulted in the need for additional processing and treating capacity. The expansion of the Ramsey Plant will be designed to process up to an additional 200 MMscf/d of natural gas per train.

The currently permitted Ramsey Plant occupies about 21.6 acres on the north half of the 50-acre property. The expansion (Ramsey IV through VI) will be collocated on the same property, occupying approximately 28.5 acres immediately to the south of the existing Plant. This area has already been cleared and graded as it was used as laydown and temporary work space during the construction of Ramsey II and III.

The expansion will take place on an existing site adjacent to existing facilities, and so there are no additional linear features associated with the expansion, as the access roads and pipelines are already in place and the existing site is large enough to accommodate any temporary workspaces and laydown areas.The site is approximately 8.25 miles north of Orla, Texas, and approximately 2.4 miles west of Highway 285. The project is located in the Screw Bean Draw NE USGS 7.5' Quadrangle (Quad). Specifically, the coordinate for the front gate of the Ramsey Plant is latitude 31.927337° and longitude -104.021693 (NAD 83). Figure 1 in Appendix A depicts the Vicinity Map and the USGS Quadrangle Map is provided as Figure 2.

3.1.2 Action Area

By definition, the assessment's Action Area, is the area that is directly or indirectly affected by the proposed expansion. As explained above, the expansion will be located on the southern half of the existing Ramsey Plant property, in an area that has already been cleared and graded, as it was used as laydown and work areas during the construction of Ramsey II and III. The property is large enough to provide adequate temporary work space during the construction of the expansion facilities. In addition, there will be no additional linear facilities, such as access roads and pipelines, associated with the proposed construction, as they already exist. Atmospheric dispersion modeling has shown that all concentrations of pollutants are at or below EPA significant impact levels (SIL) at the facility's boundaries. Therefore, the "Action Area" for this report includes everything within the expansion boundary (see Figure 1, Appendix A).

Figure 1
Ramsey Gas Plant Vicinity Map

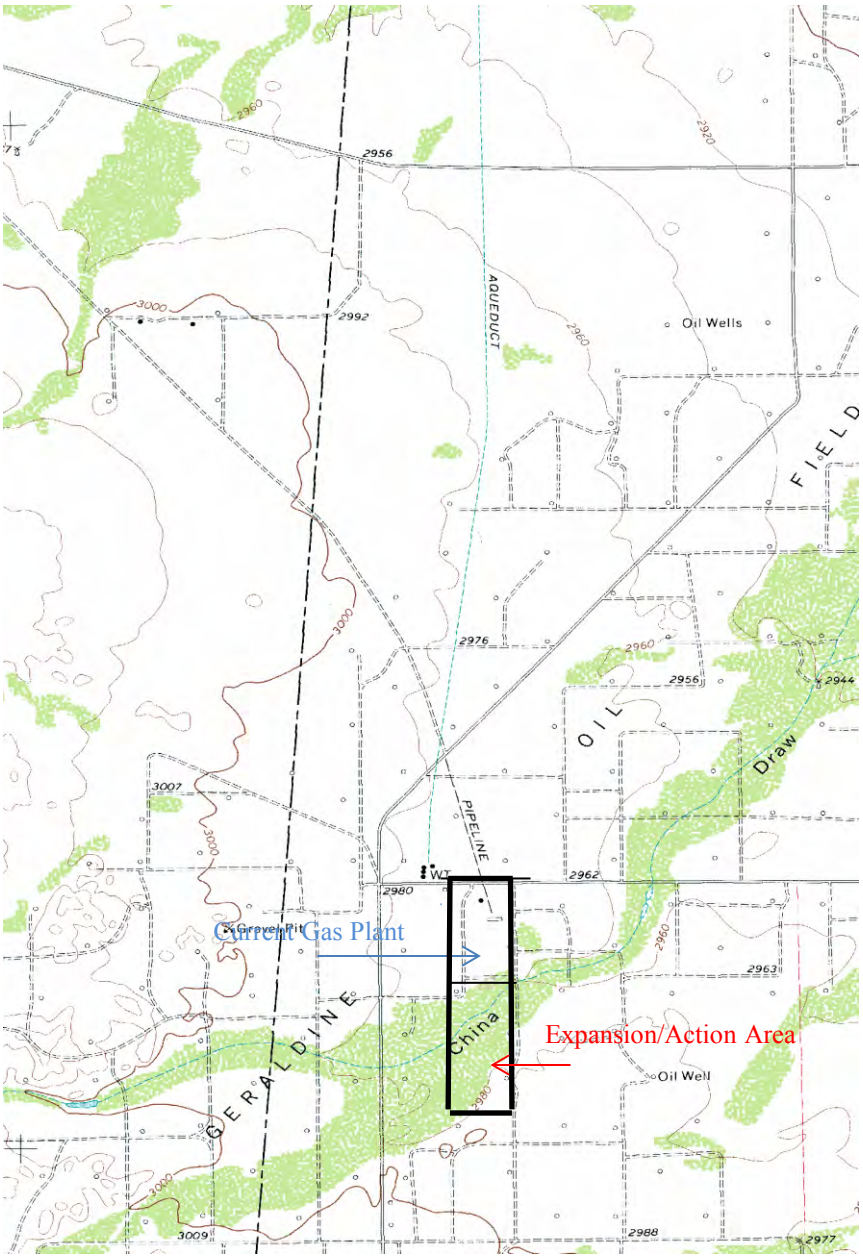


Figure 2
USGS Quadrangle Map
United States Geologic Survey
Screw Bean Draw NE Quadrangle
Ramsey Gas Plant Vicinity Map
1:24,000
Contour Interval: 20’
National Geodetic Vertical Datum 1929

3.2 Construction Information

3.2.1 Construction Description

A phased approach will be undertaken for construction activities, the phases being Ramsey Plant IV, which will include the addition of a 1,000 gpm amine plant (Plant I), Ramsey Plant V and Ramsey Plant VI, which will also include the addition of a 1,000 gpm amine plant (Plant II). Construction activities will include the installation of non-piled foundations on which to place equipment, installation of new pipe racks and supports, installation of major equipment and the building of a new control center. There are currently no outfalls and no new outfall structures will be required for this project.

Each Plant will consist of the following emission sources:

- A 200 MMscf/d cryogenic plant,
- A 36 MMBtu/hr regen gas heater,
- 5 residual compressors and engines, and
- Associated fugitive components.

Each Amine Plant will consist of the following emission sources:

- An amine still vent routed to a regenerative thermal oxidizer (RTO), and
- A 60 MMBtu/hr amine heater

3.2.2 Construction Activities and Schedule

Construction will generally be continuous, although there may be short periods of inactivity between construction phases to allow the newly installed equipment to be commissioned, brought on line and then filled to capacity. It is not expected that there will ever be more than 60 days between construction phases, but if there is, the proper authorities will be notified and, where needed, authorization for the pause in construction will be obtained.

During construction the work schedule will be approximately 10 hours per day, six days per week. Expected construction start dates are late 2015 for Ramsey Plant IV, late 2017 for Ramsey Plant V and 2019 for Ramsey Plant VI. The exact dates of construction will be determined by the lead time required to secure the proper equipment and the market conditions. The following general construction activities are envisaged:

- Installation of non-piled foundations,
- Setting of major equipment,
- Installation of Control Center,
- Installation of instrumentation devices and associated wiring,
- Pressure testing of various piping systems,
- Insulation installation,
- Plant start-up and commissioning.

The estimated number of personnel required for construction of the Ramsey Plants is an average of 75 and a maximum of 140. Any emissions resulting from the additional construction personnel would be insignificant and temporary.

4.0 BACKGROUND INFORMATION

4.1 General Environmental Information

This section discusses the general environmental characteristics for the area where the project is located.

4.1.1 General Region Information

The project is located within the Trans-Pecos eco-region of Texas.[7] The survey area is located in the Southern High Plains physiographic province of North America.[8]

The Trans-Pecos region is possibly the most complex of all the regions in Texas. It occupies the extreme western part of the state, eastward of the Pecos River (see Figure 3, Appendix A). This is a region of diverse habitats and vegetation, varying from desert valleys and plateaus to wooded mountain slopes. The area in the vicinity of the facility is a desert valley with an elevation of approximately 2,970 feet above sea level. Over most of the area the average annual rainfall is less than 12 inches, but can vary greatly from year to year and from lower to higher elevations. July and August are usually the wettest months.[7]

Due to the diversity of soils and elevations, many vegetation types exist in the region. Typically the area is treeless.[8] The regional principal plant communities are creosote-tarbrush dessert scrub, desert grassland, yucca and juniper savannahs, and mountain forests of pinion and oak. The facility is located in the desert scrub subregion, with low rainfall and rapid drainage. Creosote bush flats with yucca, lechuguilla and various small-leafed plants are common.[7]

On the High Plains, widespread small, intermittent streams dominate the drainage. The Canadian River cuts across the province, creating the Canadian Breaks and separating the Central High Plains from the Southern High Plains. Pecos River drainage erodes the west-facing escarpment of the Southern High Plains, which terminates against the Edwards Plateau on the south.[9]

The entire county is drained by the Pecos River[10] Two lakes provide for recreation and irrigation in Reeves County: Red Bluff Reservoir 4.5 miles from the Project, in the northwestern portion of the County, east of the Project and Balmorhea Lake approximately 70 miles south from the Project in the extreme southwest of the county (see Figure 4 in Appendix A).

4.1.2 Land Use

The proposed project is located in Reeves County approximately 8.6 miles northwest from the ghost town of Orla, Texas.[11] Less than 1% of the land in Reeves County is considered prime farmland[12] and more than 90% of the land in the county is rangeland.[13] There is very little additional information in the literature about land uses in Reeves County, Texas. However, based on visual observations, the land use within the survey area is oil and gas exploration and production, ranching and hunting.

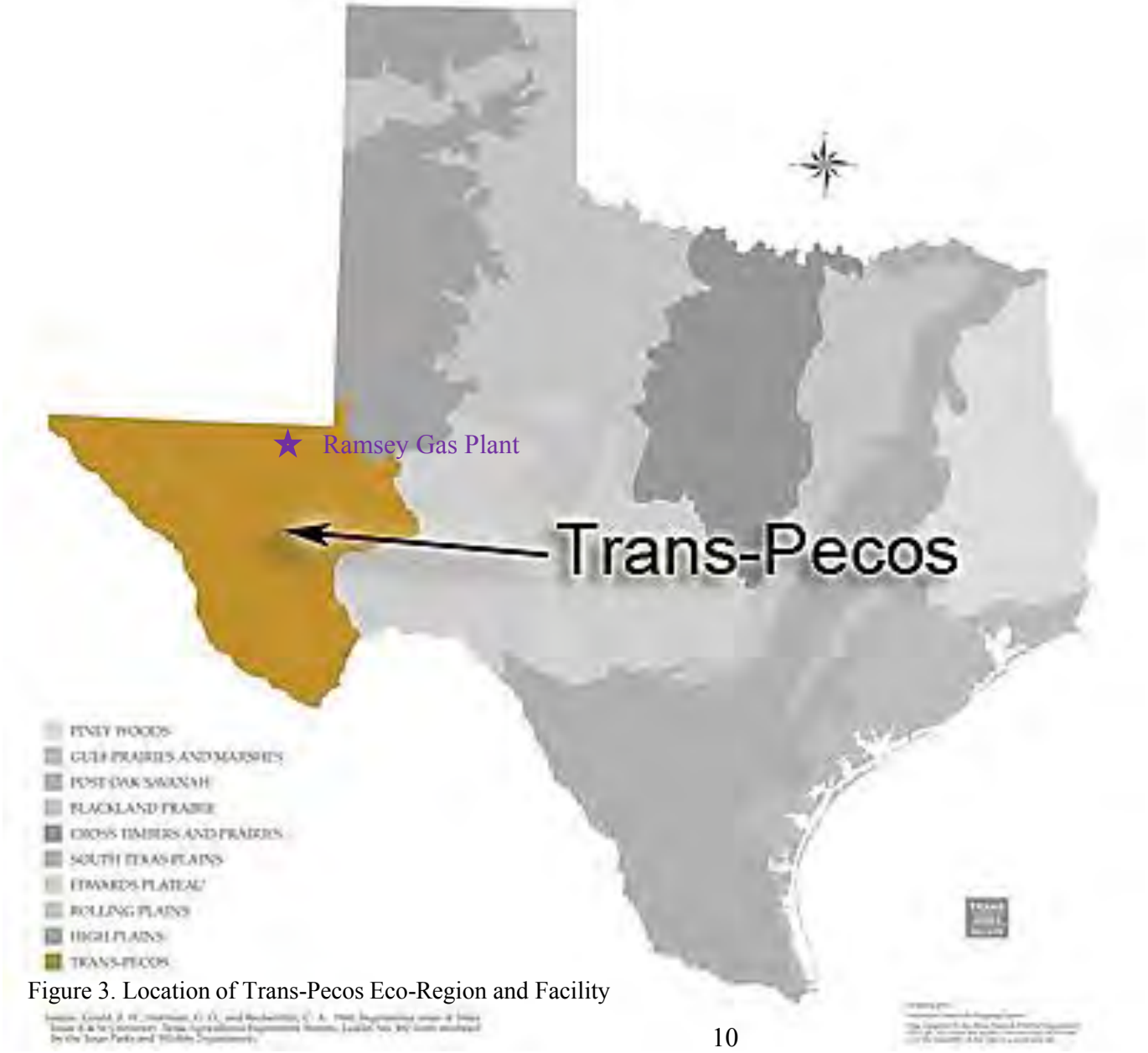


Figure 3. Location of Trans-Pecos Eco-Region and Facility

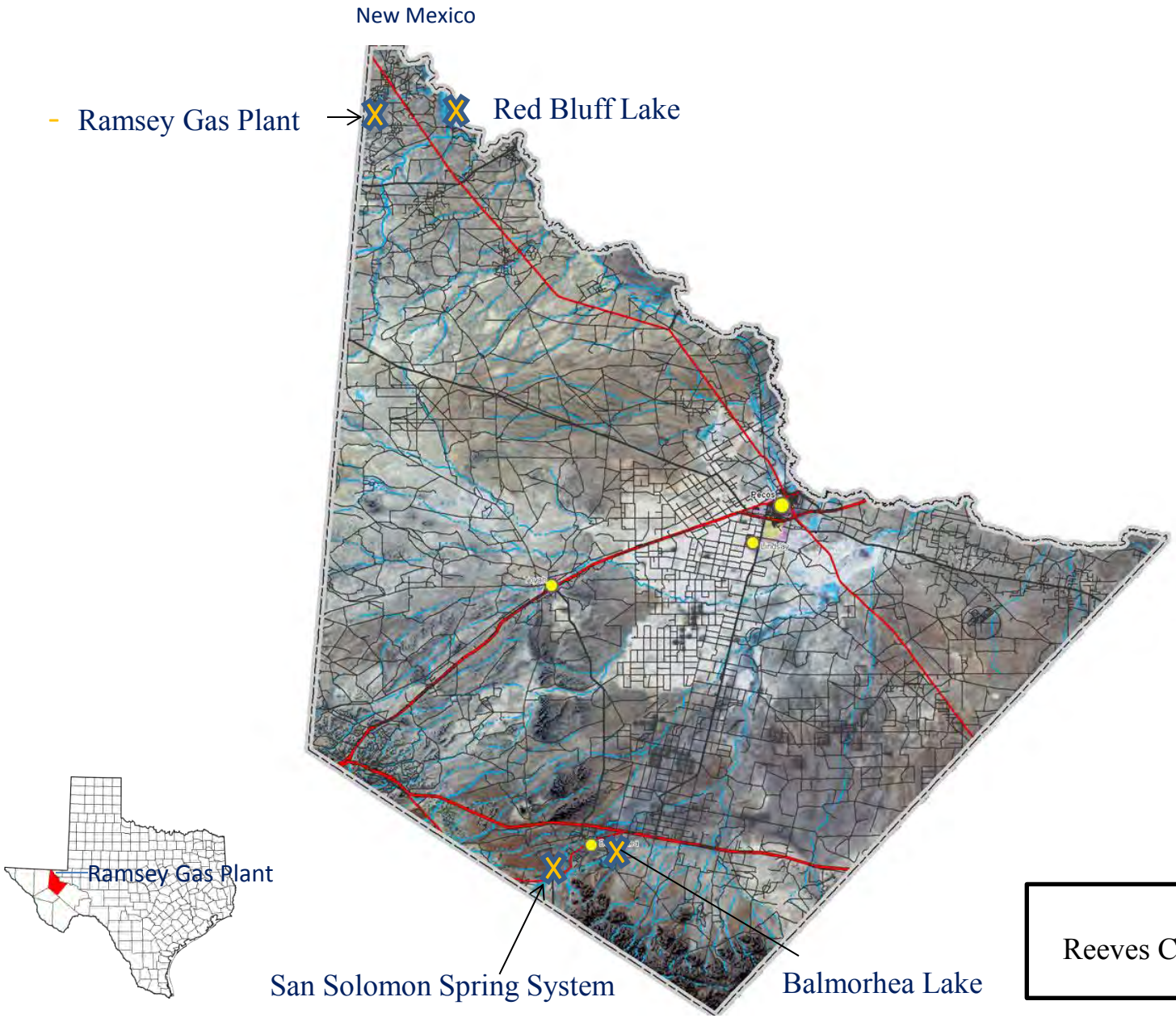


Figure 4
Reeves County Vicinity Map

4.1.3 Climate

The growing season in Reeves County is 226 days with an annual rainfall of 13.1 inches.[14] Rainfall runs into several intermittent lakes in the west central portion of the county. These shallow playas fill with water after downpours, but shrink and sometimes disappear through evaporation between rains.

The average annual temperature is 64°F.[12] In the winter the average temperature is 46°F, and the average daily low is 29°. In summer the average temperature is 83°, with an average daily high of 99°.[13]

As of February 25, 2014, the US Drought Monitor indicated that the survey area is not in a drought, unlike most of the rest of Texas.[15]

4.1.4 Topography

Reeves County is flat and undulating terrain in its northern portion and mountainous in the extreme south[12]. The Project area is located in the north of the County, in a flat area with an approximate elevation of 2,970 feet above sea level.[16]

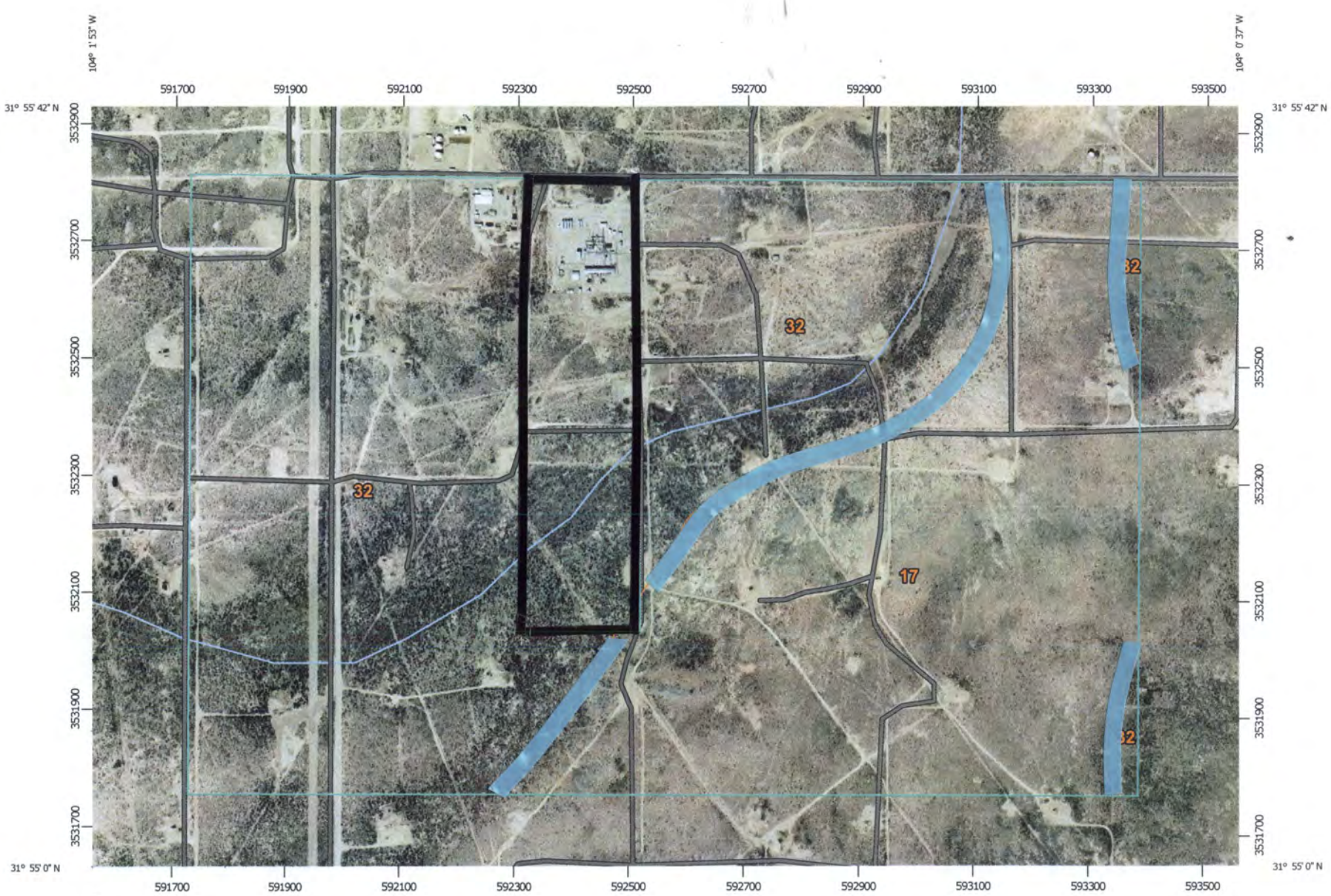
The area is not mapped on Federal Emergency Management Agency (FEMA) flood insurance maps.[17] The National Wetlands Inventory (NWI) maps show no wetlands data in the project area.[18] In addition, no wetlands were observed during the field survey.

4.1.5 Geology

Alluvial deposits of various ages from the Pleistocene and Holocene composed of gravel, sand, silt and clay and mud comprise 80 % of the geologic formations in Reeves County, Texas.[19]

4.1.6 Soils

The entire Ramsey Gas plant, including the expansion area, is composed of two different soil types. The majority of the subject site, about 25.5 acres (84%) is within the Reakor soil component, which consists mainly of loam. The Reakor has moderate infiltration rates. It is deep and moderately deep, moderately well and well drained with a non-hydric characteristic that has a high corrosion potential for uncoated steel. About 5 acres (16%) of the southeast corner of the property, is composed of the Hoban-Reeves-Holloman soil components, which is made up of approximately 35% Hoban, 25% Reeves, 15% Holloman and 25% other components. The Hoban-Reeves-Holloman basically consists of clay loam. These soils are well drained with a non-hydric characteristic that has a high corrosion potential for uncoated steel. (See Figure 5 Appendix A).[13]



USDA **Natural Resources Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

Figure 5
Soils Map
Ramsey Gas Plant Vicinity Map

Map Unit Symbol	Map Unit Name
17	Hoban-Reeves-Holloman association, nearly level
32	Reakor association, nearly level

4.1.7 Water Resources

There are few water resources in Reeves County. Red Bluff Lake, a man-made reservoir created by damming the Pecos River, is located approximately 4.5 miles east of the site. The Lake covers 11,700 acres when it is full.[20]

Balmorhea Lake in the southwest of the county is approximately 70 miles south a of the site. Balmorhea Lake is also a man-made reservoir of approximately 600 acres, which is used for irrigation and recreation. The lake is near the San Solomon Springs System, a group of artesian and gravity springs that produce 80 million gallons of water daily. The adjacent state park contains a 1.75-acre swimming pool that is fed by springs at the rate of 22 to 26 million gallons daily.[21]

There are no public water supply (PWS) systems within a 1-mile radius of the site. There are however, 20 water wells within a one-mile radius of the site. All 20 wells were drilled by Kinder Morgan, Inc. to a depth of 30 to 35 feet.[22] Based on the company drilling the wells, their depths and the number of oil wells in the area, it is anticipated that the wells were not actual water wells, but ratholes, which are used when drilling oil and gas wells. The annual average precipitation in Reeves County is 13.1 inches.[14]

4.2 Protected Species

Threatened and endangered species listed by the USFWS and the TPWD as having the potential to occur in Reeves County are provided in Table 1.

Table 1. Threatened and Endangered Species Identified for Reeves County

Common Name	Scientific Name	Species Group	USFWS List Status[23]	TPWD List Status[24]
Northern Aplomado Falcon	*Falco femoralis septentrionalis*	bird	E	LE
Mexican Spotted Owl	*Strix occidentalis lucida*	bird	T	
Interior Least Tern	*Sterna antillarum athalassos*	bird		LE
Diminutive Amphipod	*Gammarus hyalleloides*	crustacean	E	
Comanche Springs Pupfish	*Cyprinodon elegans*	fish	E	
Pecos Gambusia	*Gambusia nobilis*	fish	E	
Black-Footed Ferret	*Mustela nigripes*	mammal		LE
Gray Wolf	*Canis lupus*	mammal		LE
Phantom	*Pyrgulopsis*	snail	E	

Common Name	Scientific Name	Species Group	USFWS List Status[23]	TPWD List Status[24]
Springsnail	*texana*			
Phantom Tryonia	*Tryonia cheatumi*	snail	E	
Pecos Assiminea Snail	*Assiminea pecos*	snail	E	
Pecos/Puzzle Sunflower	*Helianthus paradoxus*	plant	T	LT

Note: USFWS List Status symbols: "E" stands for Endangered and "T" stands for Threatened. TPWD List Status symbols: "LE" stand for Federally Listed Endangered and "LT" stands for Federally Listed Threatened.

A brief description of the threatened or endangered species and their habitats are presented below.

4.2.1 Northern Aplomado Falcon

Northern Aplomado Falcons are slender, long-tailed birds measuring about 14-18 inches long with a 3-foot wingspan and have plumage that is very distinct in pattern and coloration. The underparts are much darker in color (blue-black) than all other falcons found in the US. The tail is banded with white and black or gray stripes. A distinctive white line is located below the black cap on its head.[25]

Northern Aplomado Falcons eat insects, small birds (e.g. pigeons and doves), rodents, lizards, and small snakes. They are powerful fliers. They can hunt co-operatively with the males flying higher, while the female flies low flushing other birds from the vegetation. They are also attracted to fires that flush out insects and other prey.[25]

The Northern Aplomado Falcon's habitat generally consists of open areas including savannah, scrubland, grassland, cactus desert & marshland; from low lands to high-altitude areas.[26]

Northern Aplomado Falcons nest in trees or tall shrubs where they use the nests of other birds. They have also been known to use nests located on utility poles. The Falcons lay 3-4 whitish eggs with small brown spots[25]. The eggs are incubated for about 1 month, fledging 30-35 days later.[26]

Northern Aplomado Falcons were extirpated in the US by the 1930s. They were reintroduced in Texas along the coastal areas in 1985[25]. The loss of viable habitat was possibly the cause of their decline.

4.2.2 Mexican Spotted Owl

The Mexican Spotted Owl is one of three subspecies. Spotted owls are one of the largest owls in North America, although the Mexican Spotted Owl is the smallest of the group.[27] It is 16-19 inches tall and 17 inches long, with a wingspan of 42-45 inches. It weighs 1.2-1.4 pounds with the males being smaller than females. The Mexican Spotted Owl's lifespan in the wild is 16-17 years.[28]

The Mexican Spotted Owl is an exclusively nocturnal hunter that lives in old-growth forests and eats wood rats, mice, voles, rabbits, gopher, and bats. The high, closed canopies of old- growth forests make good nesting areas for the owls. They tend to stay in one spot unless forced to move due to harsh winters/heavy snow. They may sometimes expand winter ranges to increase prey availability. The owls are "perch and pounce" predators.[27]

The Mexican Spotted Owl has the largest geographic distribution of all spotted owls; living in forest mountains and canyons from southern Utah and Colorado to mountains in Arizona, New Mexico, west Texas and even into mountains in northern and central Mexico. In the US there are an estimated 2,106 individuals and in Mexico their numbers are dangerously low.[27]

Mating season is February and March, with gestation being 2 months with 2 - 4 eggs. The young leave the nest in 32-36 days to perch on surrounding branches and fly short distances in 40-45 days. The survival rate for young is low.[27]

The Mexican Spotted Owl is threatened by[27]:

- Loss of preferred old-growth forest habitat,
- Starvation,
- Fire,
- Barred Owl encroachment,
- Great Horned Owl predation,
- Low reproductive success, and
- Low juvenile survival rates.

4.2.3 Interior Least Tern

Interior Least Terns are small birds measuring about 8-10 inches long with a 20 inch wingspan. Sexes appear similar, with a black-capped crown, white forehead, greyish back and dorsal wing surface, and white undersurface; legs are a variation of orange and yellow colors depending on the sex, and a black-tipped bill whose color also varies depending on the sex.[29]

The Interior Least Tern is piscivorous, feeding in shallow waters of rivers, streams and lakes. Interior Least Terns also feed on crustaceans, insects, mollusks and annelids. The terns usually feed close to their nesting sites with fishing occuring close to the riverine colony. Terns nesting in sand and gravel pits and other artificial habitats may fly up to 3.2 km to fish.[30]

Breeding colonies or terneries are usually small (up to 20 nests) with nests spaced far apart. Egg-laying and incubation occur in late May to early August, depending on the geographical location and the availability of habitat.[29]

The Interior Least Tern is migratory and breeds along the Mississippi, Red and Rio Grande River systems and other rivers of central Texas. Distribution is generally restricted to less altered river segments. Wintering grounds are located along the Gulf Coast.[30]

The riverine nesting areas of Interior Least Terns are sparsely vegetated sand and gravel bars within a wide unobstructed river channel, or salt flats along lake shorelines. Nesting locations are

usually at the higher elevations away from the water's edge because nesting starts when the river flows are high and only small amounts of sand are exposed. The size of nesting areas depends on water levels and the extent of associated sandbars.[29]

4.2.4 Diminutive Amphipod

The Diminutive Amphipod is the smallest known North American freshwater *Gammarus* amphipod or crustacean at 0.2 to 0.24 inches. There is very little known on the life history of the Diminutive Amphipod. However, it is known to be common in a very restrictive range of the San Solomon Spring System consisting of four springs: San Solomon Spring, Giffin Spring, Phantom Lake Spring and East Sandia Spring located near Balmorhea in southern Reeves and northern Jeff Davis Counties.[31]

4.2.5 Comanche Springs Pupfish

The Comanche Springs Pupfish also inhabits the freshwater San Solomon Spring System, consisting of the San Solomon Spring, the Giffin Spring, the Phantom Lake Spring and the East Sandia Spring.[32]

The Comanche Springs Pupfish lives for approximately one (1) year. It eats filamentous algae and some snails. It prefers water temperatures between 68-86 ºF (20-30 ºC), and the critical thermal maximum (temperature at which death is likely) is about 105 ºF (40.5 ºC).[33]

4.2.6 Pecos Gambusia

The Pecos Gambusia is a two-inch long fish that inhabits the San Solomon Spring System located near Balmorhea in southern Reeves and northern Jeff Davis Counties[34]. Not much is known on the life history of the Pecos Gambusia. However, it typically inhabits shallow margins of clear vegetated spring waters high in calcium carbonate, although it has also been found in more adverse sinkhole habitats.[35]

4.2.7 Black-Footed Ferret

The Black-Footed Ferret is the only ferret native to North America.[36] It is a slender wiry animal with black feet, black face mask and black tipped tail. Its short, sleek fur is a yellow-buff color; lighter on the belly and nearly white on the forehead, muzzle, and throat. They are considered medium sized members of the weasel family, typically weighing 1.4 to 2.5 pounds, and measuring 19- to 24-inches long, including a 5- to 6-inch tail. They have short legs with large front paws and claws developed for digging. Their large skull has a strong jaw and teeth that are adapted for eating meat.[37]

Ninety percent of the Black-Footed Ferret's diet consists of prairie dogs, along with squirrels, mice, ground squirrel, rabbits and other rodents and birds. The Black-Footed Ferret can hunt during the day, or at night.[38] The Black-Footed Ferret uses prairie dog burrows to raise their young and escape from predators (e.g., golden eagles, owls, coyotes) and harsh weather.[37]

Mating season is from March to April. Kits are born from May to June, after a 41- to 43-day gestational period. The average litter contains 3-4 kits. The kits are born blind and helpless and therefore stay below ground until they are about two (2) months old. At 90 days, the kits are 90% of their adult size and able to kill prairie dogs.[37]

Black-Footed Ferrets are endangered due to loss of habitat and prey, and only exist in the wild at 16 reintroduction sites across 8 states, Canada and Mexico. None of the reintroduction sites are in Texas[39]. Three of the original 19 reintroduction sites no longer support ferret populations due to sylvatic plague.[37]

4.2.8 Gray Wolf

The Gray Wolves are the largest wolf species and a close relative of the domesticated dog. The Gray Wolf weighs 50 to 90 pounds and is 4 to 5 feet long, with thick fur that ranges in color from creamy-white, reddish-brown, to shades of gray and black. Adult males are larger than adult females.[40]

They are carnivores which prey on large herbivores such as deer, antelope, elk, moose, rabbits, ground squirrels, and mice[39]. They live and hunt in packs of 6 (six) to ten (10) and, like domestic dogs, they do not eat in moderation. They can roam large distances per day (i.e., up to 12 miles)[41].

The wolf pack lives in a strict hierarchy; usually dominated by a male and female top wolf. Gray Wolves can live up to 15 years[40]. They breed once a year; mating in late winter with an average litter of five (5) pups being born in the spring. There is a strong bond between mates and they often mate for life. Dens are usually ground burrows. Both parents and other pack members are involved in parenting and bring food to pups.

Currently the gray wolf is extirpated from Texas[40]. Due to the success of intervention programs and the associated increasing numbers of Gray Wolves, there is a proposal to delist the species[42].

4.2.9 Phantom Springsnail

The Phantom Springsnail is an endemic aquatic snail found in the San Solomon Spring System which consists of four springs (San Solomon Spring, Giffin Spring, Phantom Lake Spring and East Sandia Spring) located near Balmorhea in southern Reeves and northern Jeff Davis Counties. It is very rare and exists in a very restrictive range.[43]

The Phantom Springsnail reproduces several times during its spring through fall breeding season. It is sexually dimorphic with the females being bigger than the males. The Phantom Springsnail lays a single small egg capsule on a hard surface.[44]

The Phantom Springsnail's life span is 9 to 15 months with the females living longer than males. Phantom Springsnails are fine-particle feeders eating detritus and other submerged material attached to aquatic surfaces.[44]

4.2.10 Phantom Tryonia

The Phantom Tryonia is very similar to the Phatom Springsnail. It is a small endemic aquatic snail found in the San Solomon Spring System which consists of four springs (San Solomon Spring, Giffin Spring, Phantom Lake Spring and East Sandia Spring) located near Balmorhea in southern Reeves and northern Jeff Davis Counties[45].

The Phantom Tryonia reproduces several times during its spring through fall breeding season. It is sexually dimorphic with the females being bigger than the males. The Phantom Tryonia lays a single small egg capsule on a hard surface[46].

The Phantom Tryonia's life span is 9 to 15 months with the females living longer than males.

Phantom Tryonia are fine-particle feeders eating detritus and other submerged material attached to aquatic surfaces[45].

4.2.11 Pecos Assiminea Snail

The Pecos Assiminea Snail is a small, 0.04-0.08 inch, rare, freshwater snail. Little is known about its life history. However, it lives in mud and mats of saturated vegetation with small amounts of running water[47]. It is currently found at only six (6) sites; four (4) at Bitter Lake Natural Wildlife Refuge in NM, one (1) at Diamond Y Spring and its drainage in Pecos County and one (1) site at East Sandia Spring in Reeves County, Texas[48].

4.2.12 Pecos/Puzzle Sunflower

The Pecos/Puzzle Sunflower looks like a typical sunflower. It differs from common sunflower in having narrower leaves, fewer hairs on its stem and the leaves and flower heads are slightly smaller[49]. Pecos/Puzzle Sunflower can grow to a height of 6 feet[50].

The Pecos/Puzzle Sunflower blooms only in autumn (September to November) and grows only in salt water. Its habitat is limited to approximately two (2) dozen known location in desert wetlands (cienegas) of New Mexico and Texas[51]. The Pecos/Puzzle Sunflower survives in Texas at the natural springs found at Diamond Y Spring and Sandia Springs Preserve, and desert oases owned and protected by the Nature Conservancy of Texas[50].

The plant is vulnerable to groundwater depletion, diversion of surface water, filling of wetlands, unmanaged livestock grazing and competition with non-native, invasive trees. Seed dispersal is restricted by the distance from one wetland to another[50].

5.0 PROTECTED SPECIES HABITAT EVALUATION

A request covering flora and fauna that occur in Reeves County was submitted to the Texas Natural Diversity Database (TXNDD), which is maintained by NatureServe, to help determine the probability of any of the protected species (described in the previous section) being present in the Action Area. In addition, a protected species habitat evaluation of the area was undertaken on August 8, 2013 to determine if habitat within the Action Area was likely to support any of the federally protected species potentially occurring in Reeves County. The field survey included a pedestrian survey of the proposed Action Area. The field survey also included a drive through survey of all terrestrially accessible habitats within an approximately 1-mile radius of the project area. Data were collected to describe resident vegetation communities and assess the potential for the occurrence of protected species. The results of the TXNDD review and a description of any dominant habitats observed within a 1-mile radius of the construction area are described below.

5.1 Texas Natural Diversity Database Results

The TXNDD maintains information on over 700 natural resource "Elements". An Element can be a species, a native plant community, or an animal aggregation, such as a colonial water bird rookery or a bat roost.

The TXNDD record for any Element is known as an Element Occurrence (EO). An EO is an area of land or water where an Element is or was present and has practical conservation value. Each EO is based on at least one observation, and potentially up to hundreds of observations, of an Element in a specified location. The EO can be thought of as a representation of the "known" population of an Element in a particular area. The TXNDD currently has over 8,500 EO records.

The observations that comprise each EO are submitted to the TXNDD from a variety of different sources, including TPWD personnel, conservation organizations, and consulting firms. In addition, TXNDD and Wildlife Diversity Program staff search published articles, project reports, museums, and herbaria for additional information. Each source of information is documented in a TXNDD Reference record and then archived. Each EO record includes a reference list documenting what information was used to create the record.

Each EO consists of two parts: the geographic location of the observation and the data that goes along with the observation. The basic data needed to create an EO includes: who observed the element, when the element was observed, where the element was observed, and how many elements were observed. In addition to the basic data, a TXNDD EO record may contain information about the surrounding habitat, the condition of the habitat, the condition of the element, any possible threats to the long term survival of the element in that location, and much more[52].

A response was received from the TXNDD indicating that they are "showing that we **do not** have available information in the requested quads..."

5.2 Plant Communities Observed

Many vegetation types exist in the region. Although on first glance the area appears treeless, the *creosote-tarbush* association is the primary plant community that was noted during the field investigation and consists of range ratany, cholla, fourwing saltbush, sotol, mesquite, whitethorn acacia, catclaw acacia, lechuguilla, chino grama, gyp grama, alkali sacaton, false nightshade, false broomweed, and jimmyweed. In addition, some texas prickly pear cacti were noted. The trees that do exist in the area are stunted.

5.3 Protected Species Habitat Analysis

The following habitat analysis is based on the field investigation, the background review and general protected species habitat evaluation data.

The Diminutive Amphipod, Comanche Springs Pupfish, Pecos Gambusia, Phantom Springsnail, Phantom Tryonia and Pecos Assiminea Snail are all restricted to flowing spring areas, which are approximately 70 miles from the Ramsey Plant. There are no spring areas within the vicinity of the Ramsey Gas Plant, and so there is no habitat for these species within the Action Area.

The Pecos/Puzzle Sunflower's habitat is wetlands. No wetlands were observed during the site investigation. here are no wetlands in the vicinity of the Ramsey Gas Plant, and so there is no Pecos/Puzzle Sunflower habitat. The closest known occurrence is 70 miles from the Action Area.

Black-Footed Ferrets and Gray Wolves are extirpated in Texas. Therefore there are no habitats within the vicinity of the facility.

Northern Aplomado Falcons were extirpated in Texas, but were reintroduced in 1985. Currently there are some communities along the Texas Gulf Coast and in grasslands in Presidio and Brewster Counties, approximately 90 miles south of the Action Area.

Mexican Spotted Owls need old growth forests. There are no large trees within approximately 45 miles of the Ramsey Gas Plant. Interior Least Terns depend on specific riverine environments. The closest of these is about 200 miles away, along the Rio Grande River. Therefore there is no suitable habitat for the Mexican Spotted Owl and Interior Least Tern in the Action Area.

The proposed Project will be located adjacent to an existing facility. Land use and habitat types outside the proposed project area include oil and gas exploration and development and minor amounts of grazing. As explained above, there is no potential habitat within the Action Area and surrounding area that has the potential to support any of the threatened or endangered species listed for Reeves County.

6.0 AIR QUALITY ANALYSIS RESULTS

6.1 Estimated Total Annual Emissions Rate Overview

Sound Environmental Solutions, Inc. (SES) completed detailed pollutant emission calculations for all six (6) phases of the Ramsey Gas Plant for the TCEQ Prevention of Significant Deterioration (PSD) permit application for criteria pollutants and for the EPA PSD permit application for greenhouse gases. Based on the above documents the total annual emissions tabulated below in tons per year (TPY).

Table 2. Annual Emissions in Tons per Year (TPY) for all 6 Phases of the Ramsey Gas Plant

Parameter	TPY
CO	279.38
NO_X	510.96
VOC	116.01
SO_2	190.62
$PM_{10/2.5}$	12.54
H_2S	1.03
HCHO (Formaldehyde)	18.62
Total HAPs	20.30
GHG (Greenhouse Gases)	595,337.00

Emission calculation methods are available in the PSD permit applications or upon request.

6.2 Area of Impact Dispersion Modeling Results

TCEQ has developed Oil and Gas Standard Permit and Permit By Rule Refined-Screening Modeling Guidelines that explains the protocol that must be followed. Since this is a PSD permit application, TCEQ and EPA typically like to have input into the model that is used. Therefore, SES performed a screening of the dispersion modeling using ISC3P model of the proposed emissions of air pollutants from the proposed expansion project to support the BA. This section provides the methods and results of the dispersion screening.

6.2.1 Dispersion Modeling Methods

Screening using ISC3P was performed for NO_2 and CO. The model setup used flat terrain. Plume depletion and deposition options were not used. A land use analysis was performed to determine the majority land use within 3 km of the Ramsey Gas Plant. As can be seen from Figure 1 in Appendix A, the entire area around the facility is 100% rural. There are no urban areas within 3 km of the site. As the land use is clearly >70% rural, no further refinement was required and the model was run with the rural option.

The emissions were represented as point sources.

The ADMT prepared meteorological data set for Reeves County that is available on the TCEQ website[54] was used in the modeling analysis. The data was collected at Midland Airport. All five years of data were used. The actual anemometer height of 10 m was used in the modeling.[55]

The model was run using five years of meteorological data and so the *high*, second high was used for comparison with the NO_2 annual NAAQS. The EPA annual default Ambient Ratio Method (ARM) of 0.75 was used to convert the NO_X results to NO_2.

NO_2
The modeling form of the standard for the 1-hour NO_2 NAAQS was used, as the model was run using 5 years of meteorological data. The standard represents worst-case 98th percentile value of daily maximum 1-hour concentrations averaged over the 5-year modeling period. The *high* second high value was used and the EPA default 1-hour ARM ratio of 0.80 applied to convert the NO_X results to NO_2.

The screening background NO_2 concentration of 70 $\mu g/m^3$ for Reeves County was obtained from the TCEQ website[56]. This background is a default value that was developed to be very conservative.

CO
The modeling form of the standard for the 1-hour NO_2 NAAQS was used, as the model was run using 5 years of meteorological data. The standard represents worst-case 98th percentile value of daily maximum 1-hour concentrations averaged over the 5-year modeling period.

6.2.2 Dispersion Modeling Results

NO_2
Both 1-hour and annual NO_2 impacts predicted by ISC3P were compared to the respective NAAQS and are presented in Table 3.

For the 1-hour NO_2 NAAQS modeling, the *high* sixth high result was multiplied by the EPA default 1-hour ARM factor of 0.80 and added to NO_2 background concentration for comparison with the 1-hour NAAQS of 188 $\mu g/m^3$. The maximum predicted 1-hour impact is 186.41 $\mu g/m^3$ (including the background of 70 $\mu g/m^3$).

For the annual NO_2 NAAQS modeling, the second highest annual concentration was multiplied by the EPA default annual ARM factor of 0.75 and added to the NO_2 background concentration for comparison with the annual NAAQS of 100 $\mu g/m^3$. The maximum predicted annual impact is 77.90 $\mu g/m^3$ (including the background of 70 $\mu g/m^3$).

CO
Both 1-hour and 8-hour CO impacts predicted by ISC3P were compared to the respective NAAQS and are presented in Table 3.

For the 1-hour CO NAAQS modeling, the high result was added to CO background concentration

for comparison with the 1-hour NAAQS of 40,000 µg/m^3. The maximum predicted 1-hour impact is 4,101.86 µg/m^3 (including the background of 4,000 µg/m^3).

For the 8-hour CO NAAQS modeling, the highest annual concentration added to the CO background concentration for comparison with the annual NAAQS of 10,000 µg/m^3. The maximum predicted annual impact is 1,066.86 µg/m^3 (including the background of 1,000 µg/m^3).

TABLE 3

SUMMARY OF MODELED IMPACTS

1-Hour NO_2 Impacts

High Sixth High Value (µg/m^3)	Background (µg/m^3)	Combined Impact (µg/m^3)	NAAQS (µg/m^3)	Exceed NAAQS (Yes/No)
116.41	70.00	186.41	188	NO

Annual NO_2 Impacts

Second Highest Value (µg/m^3)	Background (µg/m^3)	Combined Impact (µg/m^3)	NAAQS (µg/m^3)	Exceed NAAQS (Yes/No)
12.16	70.00	82.16	100	NO

1-Hour CO Impacts

High Value (µg/m^3)	Background (µg/m^3)	Combined Impact (µg/m^3)	NAAQS (µg/m^3)	Exceed NAAQS (Yes/No)
101.86	4,000	4,101.86	40,000	NO

8-Hour CO Impacts

Highest Value (µg/m^3)	Background (µg/m^3)	Combined Impact (µg/m^3)	NAAQS (µg/m^3)	Exceed NAAQS (Yes/No)
66.86	1,000	1,066.86	10,000	NO

As can be seen from the above, the predicted results are all below the standards for all receptors at the property boundary and beyond.

7.0 EFFECTS OF THE PROPOSED ACTION ON PROTECTED SPECIES

7.1 Northern Aplomada Falcon

7.1.1 Potential to Occur in the Action Area

Northern Aplomado Falcons were extirpated in the US by the 1930s. They were reintroduced in Texas along the coastal areas (approximately 475 miles from the Ramsey Plant) in 1985.[25] In 1990, a federal recovery plan was prepared, the most important part of which was the reintroduction of captive bred Aplomado's into the historic US range. The initial release was made on the King Ranch in Kleberg County (> 455 miles from the Ramsey Plant). In 1995, there were some releases of captive-reared Aplomados along the Texas Gulf Coast, focusing on Laguna Atascosa National Wildlife Refuge and Matagorada Island. Approximately 100 captive reared young are being released annually along the Texas Gulf Coast. In 2003, reintroduction were expanded to desert grasslands in western Texas, near Marfa and Marathon, Texas (~90 miles south)[57].

Northern Aplomado Falcons nest in trees or tall shrubs where they use the nests of other birds. They have also been known to use nests located on top of utility poles. There are no trees or tall shrubs within the Action Area or within the vicinity of the plant. Nor were any large bird nests observed on any utility poles during the onsite field survey. Therefore, potential nesting habitat was excluded from this analysis.

As there is no nesting habitat, the only potential habitat within the Action Area would be limited to foraging and hunting. The Northern Aplomado Falcon's foraging habitat is generally open areas including savannah, scrubland, grassland, cactus desert & marshland; from low lands to high-altitude areas.[58] However, currently there is no indication that the Northern Aplomado Falcon has returned to Reeves County in the interior of the state.

7.1.2 Potential Effects

Currently there is no potential nesting habitat and no indication that the Northern Aplomado Falcon has returned to the area. In addition, the reintroduced communities are more than 90 miles from the Action Area. So this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.1.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant and the surrounding Action Area will have "no effect" on the Northern Aplomado Facon.

7.2 Mexican Spotted Owl

7.2.1 Potential to Occur in the Action Area

Mexican Spotted Owls live and nest in old-growth forests because of the presence of big trees.

They tend to stay in one area and do not migrate. Although they have been known to move out of an area if forced to by naturally occurring events, such as snow storms. They may also expand their hunting range during the winter if they cannot find enough to eat. The US FWS has designated Mexican Spotted Owl critical habitat on federal lands in Arizona, Colorado, New Mexico and Utah. The closest recovery unit is 45 miles away in the Basin and Range East Physiographic Province in New Mexico (BR-E-1b)[59]

There are no recovery units within the vicinity of the Ramsey Gas Plant, with the closest being approximately 45 miles away. Therefore, the Mexican Spotted Owl does not occur within the Action Area, or the vicinity of the Plant.

7.2.2 Potential Effects

Since no habitat with the potential to support the Mexican Spotted Owl was identified within the Action Area, or the vicinity of the Plant, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.2.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the Mexican Spotted Owl.

7.3 Interior Least Tern

7.3.1 Potential to Occur in the Action Area

USFWS critical habitat is not yet designated for this species[60]. Interior Least Terns are migratory birds and their breeding habitat in Texas is known to be the major river systems Canadian, Red and Rio Grande Rivers. Specifically they are found in three (3) reservoirs along the Rio Grande River (> 200 miles from the Action Area), on the Canadian River in the Northern panhandle (> 300 miles from the Action Area), on the Prairie Dog Town Fork of the Red River in the eastern Panhandle (> 300 miles from the Action Area) and along the Red River on the Texas-Oklahoma boundary (> 335 miles from the Action Area)[30]. Therefore, the consideration of potential nesting habitat was excluded from this analysis. If present, potential habitat within the Action Area would be limited to wintering habitat (foraging and roosting). Preferred foraging habitat includes sparsely vegetated sand and gravel bars within a wide unobstructed river channel or salt flats along lake shores. Feeding habitat includes shallow water of rivers, streams and lakes[29]. However, according the Texas Parks and Wildlife Department, Reeves County is not in the breeding or wintering range of the Interior Least Tern[30].

No habitat with the potential to support the Interior Least Tern was observed within the Action Area. In addition, no habitat with the potential to support the Interior Least Tern was located within approximately 200 miles of the site.

7.3.2 Potential Effects

Since the closest known community of Interior Least Terns is located 200 miles away from the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.3.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the interior least tern.

7.4 Diminutive Amphipod

7.4.1 Potential to Occur in the Action Area

The Diminutive Amphipod is only known to live in the San Solomon Spring System, which is approximately 70 miles from the Action Area. Specific critical habitats have been defined at the San Solomon Spring, Griffin Spring, East Sandia Spring and Phantom Lake Spring units[61].

7.4.2 Potential Effects

Since no habitat with the potential to support the Diminutive Amphipod was identified within 70 miles of the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.4.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the Diminutive Amphipod.

7.5 Comanche Springs Pupfish

7.5.1 Potential to Occur in the Action Area

The Comanche Springs Pupfish inhabits the freshwater San Solomon Spring System located near Balmorhea in southern Reeves and northern Jeff Davis Counties[35] (approximately 70 miles from the Ramsey Plant).

7.5.2 Potential Effects

Since no habitat with the potential to support the Comanche Springs Pupfish was identified within 70 miles of the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.5.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the Comanche Springs Pupfish.

7.6 Pecos Gumbusia

7.6.1 Potential to Occur in the Action Area

The Pecos Gumbusia inhabits the San Solomon Spring System located near Balmorhea in southern Reeves and northern Jeff Davis Counties[35] (approximately 70 miles from the Action Area).

7.6.2 Potential Effects

Since no habitat with the potential to support the Pecos Gumbusia was identified within 70 miles of the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.6.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the Pecos Gumbusia.

7.7 Black-Footed Ferret

7.7.1 Potential to Occur in the Action Area

The Black-Footed Ferret depends on prairie dogs, which make up ninety percent of their prey, [38] as well as the use of prairie dog burrows to raise their young and escape from predators[37].

The species only exist in the wild at 16 reintroduction sites across eight (8) states, Canada and Mexico. Black-Footed Ferrets have not been reintroduced into Texas[39]. The nearest reintroduction site is in Janos, Mexico, which is over 275 miles from the Ramsey Plant[39].

7.7.2 Potential Effects

Since the closest known community of Black-Footed Ferrets is located more than 275 miles from the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.7.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the Black-Footed Ferret.

7.8 Gray Wolf

7.8.1 Potential to Occur in the Action Area

Currently the Gray Wolf is extirpated from Texas[40]. Wolves are only found in Canada and portions of Alaska, Idaho, Michigan, Minnesota, Montana, Wisconsin and Wyoming. The closest Gray Wolf community is therefore over 675 miles away[62].

7.8.2 Potential Effects

Since no Gray Wolves are located within 675 miles of the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.8.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the Gray Wolf.

7.9 Phantom Springsnail

7.9.1 Potential to Occur in the Action Area

The Phantom Springsnail is known to live in the San Solomon Spring System located near Balmorhea in southern Reeves and northern Jeff Davis Counties. Specific critical habitats have been defined at the San Solomon, Griffin Spring, East Sandia Spring and Phantom Lake Spring units[63] (approximately 70 miles from the Ramsey Plant).

7.9.2 Potential Effects

Since no habitat with the potential to support the Phantom Springsnail was identified within 70 miles of the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.9.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the Phantom Springsnail.

7.10 Phantom Tryonia

7.10.1 Potential to Occur in the Action Area

The Phantom Tryonia is known to live in the San Solomon Spring System located near Balmorhea in southern Reeves and northern Jeff Davis Counties. Specific critical habitats have been defined at the San Solomon, Griffin Spring, East Sandia Spring and Phantom Lake Spring units[45]

(approximately 70 miles from the Ramsey Plant).

7.10.2 Potential Effects

Since no habitat with the potential to support the Phantom Tryonia was identified within 70 miles of the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.10.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have "no effect" on the Phantom Tryonia.

7.11 Pecos Assiminea Snail

7.11.1 Potential to Occur in the Action Area

The Pecos Assiminea Snail is currently found at only six (6) sites; four (4) at Bitter Lake Natural Wildlife Refuge in NM, one (1) at Diamond Y Spring and its drainage in Pecos County and one (1) site at East Sandia Spring in Reeves County, Texas[47](approximately 70 miles from the Ramsey Plant)

7.11.2 Potential Effects

Since no habitat with the potential to support the Pecos Assiminea Snail was identified within 70 miles of the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.11.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the sAction Area will have "no effect" on the Pecos Assiminea Snail.

7.12 Pecos/Puzzle Sunflower

7.12.1 Potential to Occur in the Action Area

The Pecos/Puzzle Sunflower's habitat is limited to approximately two (2) dozen known locations in desert wetlands (cienegas) of New Mexico and Texas[50]. Pecos/Puzzle Sunflower survives in Texas at the natural springs found at Diamond Y Spring (over 75 miles from the Action Area) and Sandia Springs Preserve (approximately 70 miles from the Action Area), desert oases owned and protected by the Nature Conservancy of Texas[49].

There are no desert wetland habitats for the Pecos/Puzzle Sunflower within 70 miles of the Ramsey Gas Plant. In addition, no Pecos/Puzzle Sunflower was observed in the Action Area during the onsite field survey.

7.12.2 Potential Effects

Since no habitat with the potential to support the Pecos/Puzzle Sunflower was identified within 70 miles of the Action Area, this species will not be directly or indirectly impacted by the construction and operation of the proposed expansion of the facility.

7.12.3 Determination of Effect

The proposed construction and operation of the additional trains at the Ramsey Gas Plant within the Action Area will have “no effect” on the Pecos/Puzzle Sunflower.

8.0 CONCLUSIONS

8.1 Determination of Effect

The recommended determination of effect for all federally protected species with the potential to occur within habitat located within the Action Area are summarized in Table 4

Table 4. Determination of Effect Summary

Common Name	USFWS List Status	TPWD List Status	Determination of Effect	Comments
Northern Aplomado Falcon	E	LE	No Effect	Previously extirpated in Texas. Reintroduced in limited areas. The closest known community is 90 miles away from the Action Area.
Mexican Spotted Owl	T		No Effect	Live in old growth forests – none in area. The closest known community is 45 miles away from the Action Area.
Interior Least Tern		LE	No Effect	No habitat in area. The closest known community is approximately 200 miles from the Action Area.
Diminutive Amphipod	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.
Comanche Springs Pupfish	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.

Common Name	USFWS List Status	TPWD List Status	Determination of Effect	Comments
Pecos Gambusia	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.
Black-Footed Ferret		LE	No Effect	Extirpated in Texas. The species is dependant upon Prairie Dogs. No prairie dogs in area, so also no Black-Footed Ferrets in area. The nearest known community is 275 miles from the Action Area.
Gray Wolf		LE	No Effect	Extirpated in Texas. None in area. The nearest known community is over 675 miles from the Action Area.
Phantom Springsnail	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.
Phantom Tryonia	E		No Effect	No habitat in area. The nearest potential habitat is 70 miles from the Action Area.
Pecos Assiminea Snail	E		No Effect	No habitat in area. The nearest potential

Common Name	USFWS List Status	TPWD List Status	Determination of Effect	Comments
				habitat is 70 miles from the Action Area.
Pecos/Puzzle Sunflower	T	LT	No Effect	Not in area. The nearest potential habitat is 70 miles from the Action Area.

8.2 Interdependent and Interrelated Actions

An interdependent activity is an activity that has no independent utility apart from the action under consultation. The proposed expansion only includes the addition of three process trains to the gas plant as outlined in Section 4.0. The currently permitted and operating trains occupy about 21.6 acres on the north half of an approximately 50-acre property. The expansion (Ramsey IV through VI) will be located on the same property, occupying approximately 28.5 acres immediately to the south of the existing Plant. This area has already been cleared and graded as it was used as laydown and temporary work space during the construction of Ramsey II and III. Therefore, there are no interdependent actions proposed at this time.

An interrelated activity is defined by the FWS as an activity that is part of the proposed action and depends on the proposed action for its justification. As the expansion will take place on an existing site adjacent to existing facilities, there are no additional linear features associated with the expansion as the access roads and pipelines are already in place and the existing site is large enough to accommodate any temporary workspaces and laydown areas. Therefore, there are no interrelated actions proposed at this time.

8.3 Cumulative Effects

Cumulative effects are, by definition, those effects of future state or private activities, not involving federally activities, which are reasonably certain to occur within the Action Area. The project site is located in a rural, ranching area with extensive oil and gas exploration and production. Multiple well sites exist in the area, which is currently a hub for petroleum products coming from the Avalon, Wolfcamp and Bone Spring formations. The area is likely to experience additional oil and gas development over time.

Any new proposed developments may have the potential to impact federally protected species. However, although there are other projects in the region, there are none within the Action Area of the Ramsey Gas Plant expansion.

No additional actions with the potential to impact federally protected species are planned for the Ramsey Gas Plant at this time.

8.4 Conservation Measures

The construction and operation of the proposed expansion at the Ramsey Gas Plant will likely have no direct or indirect impact on federally protected species habitat.

Nuevo plans to utilize Best Available Control Technology, economically available (BACT) to control the project emissions and thus minimize impacts to the surrounding environment to the maximum extent practicable. The proposed emission controls of each pollutant subject to review are consistent with TCEQ/EPA guidelines and are considered to be the top level of control available.

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APPENDIX A

PRIINCIPAL INVESTIGATOR'S RESUME

WENDELL A. NEAL

316 REMINGTON DRIVE BRANDON, MS 39042 TEL/FAX: (601) 825-7799

CONSULTING BIOLOGIST - SPECIALIZING IN SECTIONS 7, 9, AND 10 OF THE ENDANGERED SPECIES ACT (ESA).

EDUCATION

B.S. Field Biology Dept. of Biology Northwestern State College, 1965

M.S. Wildlife Ecology School of Forestry and Wildlife Louisiana State University, 1967

EMPLOYMENT

U.S. FISH & WILDLIFE SERVICE-FISH & WILDLIFE BIOLOGIST 1978 -1995 (Rtd)

Selected Recovery Responsibilities: Supervision and personnel training of Section 10 habitat conservation planning for issuance of incidental take permits in AR, AL, LA, and MS. Negotiated development of and processed incidental take permits for a variety of federally listed species. Section 9 assessment and referral for law enforcement/solicitor action. Prepared recovery plans for gopher tortoise and Alabama canebrake pitcher plant; assisted in preparing black bear and green pitcher plant recovery plans. Developed habitat conservation plans for Red Hills salamander, Perdido Key beach mouse, Alabama beach mouse, red-cockaded woodpecker, gopher tortoise, and Louisiana black bear. Processed incidental take permits; authored associated environmental assessments, FONSI's, and biological opinions for same. Selected Consultation Responsibilities: Supervised and trained a team of biologists who conducted Section 7 Endangered Species Act (ESA) consultations in Arkansas, Alabama, Louisiana, and Mississippi. Chaired Region-wide consultation team for U.S. Forest Service Red-Cockaded woodpecker Management Guidelines, Southern Region. Author of Biological Opinion on U. S. Forest Service Gopher Tortoise Management Guidelines, DeSoto National Forest, Mississippi. Chairman, Mt. Graham Red Squirrel Task Force. Provided expert testimony in ESA litigation. Selected Listing Responsibilities: Carried out rangewide surveys, data analysis, assessments, proposed, final rules, and public hearings involving three reclassifications of the American alligator to its current status throughout its historical range. Conducted status assessment of Mer Rouge Pocket Gopher. Coordinated listing and surveys regarding listing of the green pitcher plant, and public hearings. Participated in settlement agreements from litigation with Alabama Power Company. Handled petition, response to Notice of Intent to Sue, data analysis, proposed and final rules, public hearings for listing the Louisiana black bear, and proposed rule and public hearings for critical habitat designation, public outreach program, including coordination of economic analyses associated with final rule.

DEPARTMENT OF NAVY, DIRECTOR OF ENVIRONMENTAL AFFAIRS, MARINE CORPS AIR STATION, CHERRY POINT, N.C. 1974-78

Supervised forestry/soils/wildlife management, and water/air quality monitoring through ten civilian and military billets for air station and outlying landing fields.

DIRECTOR OF NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS, CAMP LE JEUNE, N.C.
Supervised forestry/soils/wildlife management/air and water quality monitoring through 28 civilian and 15 military billets on 150,000 acres of coastal pinelands primarily devoted to military training. Won Dept. of Defense Conservation award two consecutive years based on development and implementation of integrated multiple use land management plan for resolving conflicts among competing uses including amphibious training, forestry, water quality and ESA compliance. Awarded Secretary of Navy's Departmental Training Program for the Environment and Conservation.

MISSISSIPPI GAME AND FISH COMMISSION-WILDLIFE BIOLOGIST 1967-1974
Deer Study Leader/District Biologist-7 years. Established original either-sex deer seasons in 12 counties. Conducted annual state-wide deer health checks. Coordinated statewide deer browse surveys, weight/age/sex ratio data analyses, and state-wide season recommendations. Collection of and fetal age determinations to estimate breeding period for Mississippi deer herd. Conducted habitat surveys for turkey releases. Trapped turkeys. Provided technical assistance to timber companies and hunting clubs. Supervised public hunting/wildlife management areas.

Private Consulting Biologist 1995-to present
Prepared habitat conservation plans, environmental assessments and incidental take permit applications for timber companies and private real estate developers. Carried out trapping of federally listed beach mice as a prerequisite for conservation planning. Performed Wetland delineations. Performed environmental assessments for oil and gas exploration activity on National Wildlife Refuges. Performed surveys for federally listed species (beach mice, gopher tortoise, red-cockaded woodpecker, endangered species of pitcher plants and Louisiana quillwort) for coastal developers, Oil/ Gas and pipeline companies, County and State road Departments. Conducted review and analysis of biological opinions affecting City of San Diego's environmental operations on Navy lands. Performed biological assessments for private action sponsors for compliance with Section 7(c) as imposed by various federal agencies.

WORKSHOPS AND SPECIALIZED TRAINING
Attended and taught numerous workshops involving Section 7 consultation, Section 10 habitat conservation planning, role, designation of critical habitat, and ESA administration. National Science Foundation Grant and Tenure at the American Museum of Natural History, New York, New York. Mississippi Law Enforcement Training Academy Graduate. NEPA Training. Supervision and Management Training. Expert Testimony/Depositions/Federal Court RE: ESA Compliance Litigation. Negotiation Training. Economic Analysis Training. Wildlife Disease Training. Extensive Section 7, 9, 10 ESA Training. Beta Beta Beta Biological Honor Society. Recipient of Louisiana Land Grant Wildlife Student of the Year Award. Graduate Study in Philosophy and Religion.

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