FINAL

DOE/EA-1533

U.S. DEPARTMENT OF ENERGY

National Nuclear Security Administration

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED GAS MAIN AND DISTRIBUTION SYSTEM UPGRADE

PANTEX PLANT * AMARILLO, TEXAS * AUGUST 2005

BWXT Pantex

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CONTENTS

ACRONYMS

BMP – Best Management Practices

CFR – Code of Federal Regulations

CRP – Conservation Reserve Program

DOE – Department of Energy

EA – Environmental Assessment

ESL – Effect Screening Levels

FIRP – Facilities and Infrastructure Recapitalization Program

FSA – Farm Services Agency

HDPE – High-density Polyethylene

NAAQS – National Ambient Air Quality Standards

NNSA – National Nuclear Security Administration

NRC – Natural Resources Coordinator

NRCS – Natural Resources Conservation Service

RCD – Regulatory Compliance Department

SHPO – State Historic Preservation Officer

TTU – Texas Tech University

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1.0 PURPOSE AND NEED

This chapter presents background information on a proposal to upgrade the gas main and gas distribution system, including the purpose and need for agency action and a statement of public involvement activities. This chapter also addresses relevant Department of Energy (DOE), National Nuclear Security Administration (NNSA) requirements under the National Environmental Policy Act of 1969 (NEPA).

1.1 Introduction

NEPA requires federal agency officials to consider the environmental consequences of their proposed actions before decisions are made. In complying with NEPA, NNSA follows the Council on Environmental Quality regulations (40 Code of Federal Regulations {CFR} 1500-1508) and DOE's NEPA-implementing procedures (10 CFR 1021). The purpose of an environmental assessment (EA) is to provide federal decision makers with sufficient evidence and analysis to determine whether to prepare an environmental impact statement or issue a Finding of No Significant Impact.

The objectives of this EA are to (1) describe the underlying purpose and need for DOE action; (2) describe the Proposed Action and identify and describe any reasonable alternatives that satisfy the purpose and need for Agency Action; (3) describe baseline environmental conditions at Pantex, (4) analyze the potential indirect, direct, and cumulative effects to the existing environment from implementation of the Proposed Action, and (5) compare the effects of the Proposed Action with the No Action Alternative and other reasonable alternatives. For the purposes of compliance with NEPA, reasonable alternatives are identified as those that meet DOE's purpose and need for action. The EA process provides DOE with environmental information that can be used in developing mitigation actions, if necessary, to minimize or avoid adverse effects to the quality of the human environment.

1.2 Background

The 10-inch gas main and part of the distribution piping system were installed in the early 1950s. *The DOE Accounting Handbook*, Chapter 10, Attachment 10-1, "Standard Service Lives," describes the design life of this system as 25 years; therefore, the older portions of the system have been operational for twice the design life. Natural gas is a required utility service that supports essential Plant operations and facilities at Pantex.

The United States Government owns two offsite pipelines within its easement. One is the current 10-inch pipeline and the other is the original 8-inch pipeline that was capped and left in place during installation of the 10-inch pipeline in the early 1950's. Easement documents state that the U. S. Government has the right to add pipelines in all parcels of land on the easement except for Southwest Section 26 and Northwest Section 27. The original eight-inch pipe in place on the southwest side of Section 26 and on the northwest side of Section 27, and north of the Burlington Northern Santa Fe railroad tracks, would be removed and replaced with 10-inch line. Valves, casings, and cathodic protection devices would also be placed along this line.

The estimated offsite piping length was based on easement lengths purchased by the United States Government when the pipeline was originally constructed. The length of pipe on Texas Tech property and onsite was based on Pantex Plant utility maps and existing Plant surveys. United States Geological Survey maps provided an estimate for the length to bypass a man-made pond.

The existing system is as follows:

- 45,446 linear feet (8.6 miles) of carbon steel pipe offsite (to the meter just inside Pantex Plant property on the east side of the Texas Tech fence)

- 27,367 linear feet (5.2 miles) of carbon steel pipe onsite

- 41,000 feet (7.8 miles) of high-density polyethylene (HDPE) pipe onsite.

- The existing system is capable of operating up to 60 psi off of the Pantex reservation. Atmos Energy, the local gas distributor, has confirmed that these pressures are more than adequate to meet industry standards, and would easily meet the natural gas demand of the landowners that depend on this line.

While the offsite gas main is a 10-inch diameter pipe, the onsite distribution system pipe ranges in size from ½ inch to 12 inches in diameter. The onsite steel piping is cathodically protected, using three deep-well anode beds or point-specific anodes. Portions of newer steel pipeline are coated with plastic to provide corrosion protection. Atmos Energy maintains cathodic protection for the offsite portion.

The following processes are directly influenced by the functionality of the gas main and distribution system:

- Steam for environmental controls for essential bays and cells
- Steam for process equipment and weapons aging chambers
- Steam for heat in buildings and ramps
- Direct gas-fired heating and water heating
- Plant water well pump operations
- Emergency generator for medical facility
- Sanitization of classified materials by incineration
- Metal treating for tooling operations.

The gas main distribution system upgrade is integrated with the *Pantex Ten-Year Comprehensive Site Plan* and supports DOE/NNSA's objectives within the Facilities and Infrastructure Recapitalization Program (FIRP). The goals of the gas main and distribution system upgrade are to extend facility lifetimes, reduce maintenance and increase the reliability of essential facilities and infrastructure. The Future Needs Analysis developed for this project would be used to design a system that can satisfy future natural gas capacity demands.

1.3 Statement of Purpose and Need for Agency Action

For a more effective and efficient use of natural gas, for industrial purposes, the Pantex Plant needs to have natural gas supplied at 60 psi to 100 psi to get the volume needed for their distribution system. The Plant also has a need to ensure the overall reliability of the gas distribution system by reducing the system failures and reducing distribution system maintenance for essential operations.

Current pipeline pressures are held below original design criteria because of the advanced age of the pipeline. Concern for overall reliability of the gas distribution system necessitates reducing the possibility of system failures.

1.4 Scope of this EA

Scoping for this Environmental Assessment (EA) began with internal project evaluation and environmental checklist preparation conducted in conformance with DOE/NNSA NEPA procedures and Plant Standard 3062, "Preparation of Documentation for Compliance with the National Environmental Policy Act." A sliding–scale approach was used for analyzing potential environmental and socioeconomic effects. Certain aspects of the Proposed Action have a greater potential for creating environmental effects than others; therefore, they are discussed in greater detail in this EA than those aspects of the action that have little potential for effect. For example, implementation of the Proposed Action would include trenching in cultivated land, shortgrass prairie, and Conservation Reserve Program (CRP) land. It would be necessary to restore this land. Reseeding would be required on non-cultivated land, and cultivated land would be brought back to its original grade. Therefore, land use is analyzed in greater detail than those topics that are not significantly impacted, such as the following:

- Socioeconomic Resources: There would be no direct effects on the continued operations at Pantex. Offsite areas would experience temporary impacts on cropland or CRP land. There would be no permanent changes in offsite land uses. Construction materials and temporary construction workers may be drawn from the local community, resulting in an ephemeral increase of economic activity that would subside with project completion.

- Environmental Justice: No low-income or minority populations would be affected by this project.

- Human Health: The health of Pantex workers is routinely monitored, depending on the type of work performed. Health monitoring programs for Pantex workers consider a wide range of potential concerns, including exposures to radioactive materials, hazardous chemicals, and routine workplace hazards. In addition, Pantex workers involved in hazardous operations are protected by administrative and engineered controls and required to wear appropriate personal protective equipment. Training is required to identify and avoid or correct potential hazards typically found in the work environment, and to respond to emergency situations. Pantex contractors must submit a Construction Health and Safety Plan and a Waste Management Plan that follow plant guidelines, and work must be performed according to these plans.

- Wetlands/floodplains: No playa lakes would be within ¼ mile of the pipeline route. One man-made pond, on private land, overlies the existing 10-inch pipeline. Impacts to this pond would be avoided by routing the pipeline around it. If the configuration were to change, additional analysis from environmental compliance reviewers would be required.

- Explosive materials would not be used during construction activities. The Explosives Safety Contact has confirmed that the proposed pipeline route would not take the construction activity through an area of the Plant that could have explosive residue from explosives processing. A Construction Waiver would be requested by the contractor and approved and issued by the Explosives Safety contact for work within intra-line quantity distance of facilities containing explosives at rest.

The *Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components*, (SWEIS), dated November, 1996, evaluated alternatives related to continued operations of Pantex Plant. Utility usage was evaluated for water, wastewater treatment, steam, electricity and natural gas. The *Supplement Analysis for the Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components*, February, 2003, stated that utility usage during 2002-2006

would remain within the range evaluated in the SWEIS and within the capacities of the current utility system. The upgraded system would be within the criteria evaluated for utility usage.

1.5 Public Involvement

Prior to release of this EA, DOE contacted private landowners within the proposed project area by letter dated May 25, 2005 to inform them of possible activities. DOE also issued a Notice of Intent to Prepare an Environmental Assessment on June 9, 2005 announcing that an EA was being prepared for the proposed project and soliciting public comment. A Notice of Availability for this EA was issued to the public on June 30, 2005. Review of the pre-decisional EA by the public and other agencies did not elicit comments or concerns.

2.0 DESCRIPTION OF ALTERNATIVES

Chapter 2.0 discusses the Proposed Action and the No Action Alternative. Section 2.1 describes the EA Proposed Action that would allow NNSA to meet its purpose. The No Action Alternative is presented in Section 2.2 as a baseline for comparison with the consequences of implementing the Proposed Action. An alternative that was considered, but dismissed from further analysis in this EA, is discussed in Section 2.3.

2.1 Proposed Action: Construction of New Gas Main and Distribution System

The proposed action includes installing a new system (10-inch gas main, distribution piping, valves, cathodic protection, etc.) in parallel with the existing onsite and offsite government-owned gas main and distribution system.

The project would upgrade the distribution system in portions of Zone 12 North, and in outlying areas of Pantex. It would also install approximately 47,000 linear feet of 10-inch gas main offsite, from the western boundary of the Pantex Plant to the north side of Highway 60. The difference between the measurements for the proposed system and the existing system is the additional piping required by the proposed system to circumvent the man-made pond.

Existing high-density polyethylene (HDPE) portions of the natural gas system would not be replaced. The total length of piping disturbance area for offsite and onsite would be 74,113 linear feet. The estimated ground disturbance area is based on government easement maps and would be calculated by the length of the pipeline, multiplied by the disturbance area, plus 15 percent variance for lay down areas, equipment, pipe racks, and highway crossings. The width of excavation would vary, depending on the size of the pipe, but could be up to 40 feet wide. Estimated piping disturbance for most of the area would be 30 feet wide. On Texas Tech land that is only 20 feet wide, construction would still be manageable within the 20-foot easement. Disturbance-area widths were based on easement width, vehicle traffic width, and Occupational Safety and Health Administration requirements. Also considered were trench size requirements to place new pipe beside existing pipe, except in Southwest Section 26 and Northwest Section 27, where existing 8-inch pipe would be replaced with 10-inch pipe. Following the conceptual design, official surveys would be made for all the pipeline disturbance area and new drawings would be generated.

DOE/NNSA has the option to transfer ownership of the old line to the gas distributor, thus eliminating maintenance of the line. DOE/NNSA would negotiate with landowners for construction activities. DOE/NNSA is responsible for all notifications and negotiations with landowners regarding all aspects of this project including, but not limited to, excavation of land, disturbance of CRP, cropland, easements, and entering and exiting landowner property.

2.1.1 Construction

The pipe used for offsite construction is high-density polyethylene (HDPE) 3408, type III, grade IV, standard dimension ratio 11. The pipe used for onsite construction is HDPE 3408, type III, grade IV, standard dimension ratio 11.5 to 17 (depending on the size of pipe). The duration of the project is estimated as 250 days.

Offsite: Since DOE/NNSA has the right to construct a new pipeline along the entire length of its easements, a new 10-inch pipeline would be laid parallel to the existing 10-inch gas main except where trenching would skirt a man-made pond offsite, and in Sections 26/27. The original eight-inch pipe in place on the southwest side of Section 26 and on the northwest side of Section 27, and north

of the Burlington Northern Santa Fe railroad tracks, would be removed and replaced with 10-inch line. Valves, casings, and cathodic protection devices would also be placed along this line.

Onsite: A new 10-inch line would be laid parallel to the existing piping. The existing piping would be capped and left in place where possible (the large majority) and replaced where it is not possible.

Construction Work for Both Offsite and Onsite: Construction work would be planned, managed, and performed to ensure that standard worker safety goals were met and work was performed in accordance with good management practices. All contractors and subcontractors would be required to submit and adhere to a Construction Health and Safety Plan approved by Pantex and in accord with DOE orders involving worker and site safety practices, environmental regulations, and other laws that apply.

Appropriate administrative and engineering controls and design features would be installed during the construction of the gas pipeline project. Engineering best management practices (BMPs) would also be implemented for the construction site as part of the site Storm Water Pollution Prevention Plan (SWPPP). These BMPs could include using silt fencing or rock dams for erosion control. The designated easements would have temporary fencing for safety and to assure that construction remains within the easement.

Construction is estimated to begin during calendar year 2006. An estimate has not been reached for the number of workers and construction hours required for this proposed project. Types of equipment that may be used are shown in the table below:

Equipment	Fuel Type
Bulldozer	Diesel
Front-end loader	Diesel
Excavator	Diesel
Backhoe loader	Diesel
Side Boom	Diesel
Tamper Compactor	Gasoline
Trencher	Diesel
3/4-ton pickup	Gasoline
1 ton welding truck	Diesel
Arc welder	Diesel
Water truck	Diesel
Graders	Diesel
Boring machine	Diesel
Dump trucks	Diesel

Not all equipment would be operating at the same time. Typically, the bulldozer would clear the easement and would not be used again until it was needed to backfill the trench. The trencher and backhoe could be operating at the same time as, or at different times from, the operation of the truck-mounted side boom and the welding trucks. The arc welders would only be operating during the welding process. The 3/4-ton pickups would be used for workers commuting to and from the construction site.

Construction materials would be procured primarily from Texas suppliers. Pipe and other supplies would be delivered to, and stored in, a fenced staging area, with location determined after the conceptual design.

Generally, three lengths of 40-foot pipe would be placed along the trench and butt-fused together, then laid in the trench by side booms (truck-mounted cranes). Once in the trench, the newly fused section would then be fused to the previous section.

In Sections 26/27, where pipe can only be replaced and not paralleled, laying new pipe along the established pipeline route would require excavation and removal of the existing and currently abandoned 8-inch line. The proposed line would be hot-tapped into the existing line at the connection point.

Before placing the new pipeline into service, hydrostatic tests would be conducted with an amount of water based on the final design length of the pipe. The water would be pumped into the new pipeline, and a pressure-recording chart would automatically take readings to discover any leaks within the pipeline. If leaks were found, they would be repaired. The Plant Agronomist and Surface Water Compliance contact would determine both the location for discharge and any required water quality testing to be performed before discharge. The test water would be released on stabilized ground to avoid soil erosion.

Upon completion of the new pipeline installation and successful testing, the trench would be backfilled using front-end loaders and graders. The soil would be compacted using a hand tamper, and the easement would be graded and restored by appropriate measures, including seeding. Signs designating a buried gas pipeline would be placed along the easement directly above the pipeline at designated intervals.

The old offsite gas line, left in place up to the DOE/NNSA/TTU property line, would be transferred to the local gas distributor. This would place all responsibility, liability, and control of the old offsite line with Atmos Energy.

No roads or pathways are planned for the construction or for maintenance of the upgraded gas main distribution system. If roads or pathways are needed, coordination would be required with appropriate environmental contacts for environmental requirements.

2.2 No Action

2.2.1 Construction

Construction activities would only involve those necessary to maintain the system. The aging system would not meet the required pressures needed for the distribution system to approach original design criteria. It is expected that the Plant would encounter additional system maintenance. The reliability of the system to meet essential operations requirements would not be met.

2.3 Alternative Considered but Dismissed from Further Consideration

Re-routing of the existing main supply point was considered. In this scenario, DOE/NNSA would obtain a new easement for any offsite path that differs from the current path, and the existing gas main would be left in place and capped at the Pantex property line. Three alternative transmission lines were researched for their ability to supply natural gas to Pantex Plant and were rejected because they could not meet the current demand. Those three alternative transmission lines were:

- A 24-inch line owned by Transwestern Pipe Line Company at the southeast corner of the Plant on the opposite side of Highway 60.

- A 12.75-inch line owned by Oneoke Westex Transmission, also at the SE corner of the Plant on the opposite side of Highway 60.

- A 12.75-inch line owned by Oneoke Westex Transmission located about 800 feet from the west-northwest side of the Plant.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Regional Setting

The Proposed Action would be located in portions of Zone 12 North, in outlying areas of the Pantex Plant, and from the western boundary of the Plant to the north side of Highway 60. Approximately 47,000 linear feet of 10-inch gas main would be installed offsite, while 27,367 feet of pipe would be laid onsite.

The Pantex Plant is centered on approximately 15,977 acres in Carson County of the Texas Panhandle, north of U. S. Highway 60 and 17 miles northeast of downtown Amarillo. The Plant consists of land that is owned and leased by the DOE/NNSA. In addition, 5,800 acres of land south of the main Plant are leased from Texas Tech University for a security buffer zone.

Pantex Plant is on the Llano Estacado (staked plains) portion of the Great Plains, at an elevation of approximately 3,500 feet. Plant topography is relatively flat, characterized by rolling grassy plains and numerous natural playa basins. The region is a semi-arid farming and ranching area. Pantex Plant is surrounded by agricultural land, but several industrial facilities are also located nearby.

The primary surface deposits at Pantex are the Pullman and Randall soil series, which grade downward to the Blackwater Draw Formation. This formation consists of about 15 meters (50 feet) of interbedded silty clays with caliche and very fine sands with caliche.

Underlying the Blackwater Draw Formation, the Ogallala Formation consists of interbedded sands, silts, clays, and gravels. The base of the Ogallala Formation is an irregular surface that represents the pre-Ogallala topography. As a result, depths to the base of the Ogallala vary. At Pantex Plant, the vertical distance to the base of the Ogallala varies from 90 meters (300 feet) at the southwest corner to 220 meters (720 feet) at the northeast corner of the Plant.

Underlying the Ogallala Formation is sedimentary rock of the Dockum Group, consisting of shale, clayey siltstone, and sandstone.

The principal surface water feature on the Southern High Plains is the Canadian River, which flows southwest to northeast approximately 27 kilometers (17 miles) north of the Plant. Plant surface waters do not drain into this system, but for the most part, discharge into onsite playas. Storm water from agricultural areas at the periphery of the Plant drains into offsite playas. From the various playas, water either evaporates or infiltrates the soil. Two principal subsurface water-bearing units exist beneath Pantex Plant and adjacent areas: The Ogallala Aquifer and the underlying Dockum Group Aquifer. The vadose, or unsaturated zone, above the Ogallala Aquifer consists of as much as 140 meters (460 feet) of sediments that lie between the land surface and the Ogallala Aquifer.

3.2 Potential Environmental Issues and Effects Discussions

3.2.1 Land Use and Soil

3.2.1.1 Affected Environment

Pantex Plant contains several soil types that, according to the Natural Resources Conservation Service (NRCS), have been classified as prime farmland. Prime farmland, as defined in 7 CFR 657, contains the best combination of physical and chemical characteristics for producing crops. This includes cropland, pasture land, rangeland, and forestland. Prime croplands must have a dependable and adequate water supply from precipitation or irrigation; must be within a favorable climatic zone; have an adequate growing season; a fairly rockless location; and contain an acceptable acidity, alkalinity, and salt and sodium content. These lands usually are protected from flooding and are only moderately erodable, with temporary water saturation. Soil types classified as prime farmland cover the majority of Pantex Plant.

The Plant is located within the Southern High Plains region. Vegetation is characterized as shortgrass prairie. The land at Pantex ranges from unvegetated in the south-central industrial area to a variety of shortgrass prairie species elsewhere onsite.

The project area, both onsite and offsite, cuts across three different land uses: cultivated ground, native grass or pastureland, and land in the CRP. Cultivated ground consists of both dry land and irrigated properties. The dry land areas are typically planted to winter wheat or grain sorghum. Irrigated land may be planted to winter wheat, grain sorghum, corn, or alfalfa. The native grass areas primarily consist of blue grama (*Bouteloua gracilis)* and buffalograss (*Buchloe dactyloides*). Established cover on the CRP is blue grama (*Bouteloua gracilis*), buffalograss (*Buchloe dactyloides*), and side oats grama (*Bouteloua curtipendula*). Land in the CRP on TTU property has old world blue stem (*Bothriochloa ischaemum*) established as the required cover.

3.2.1.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

Approximate impacted acres associated with the offsite easement for these three land types are: 16.03 acres of cultivated ground, 9.02 acres of native grass land, and 1.15 acres of CRP land. Approximate impacted acres associated with the onsite TTU easements are: 3.54 acres of native grassland, and 1.16 acres of CRP land. There is no cultivated land on TTU property. The total acres involved in the project, for CRP land offsite, CRP land on TTU property, offsite cultivated land, offsite grassland, and TTU grassland, is 30.909 acres.

Onsite DOE property habitat type and acres disturbed include 3.86 acres of cultivated ground, 3.65 acres of industrial land in Zone 4 and Zone 12 North, 3.83 acres of mowed shortgrass prairie which is primarily buffalograss and blue grama in the Firing Site area, 0.80 acres of restored prairie with sideoats grama, and 7.00 additional acres of restored prairie. The 7.00 acres of restored prairie are primarily buffalograss and blue grama grass species planted in 1996 on formerly cultivated areas with .8 acres having sideoats added to the grass mix. Trenching would cross agricultural terraces on the cultivated ground. These terraces would be restored to the original design.

Offsite and onsite, the disturbed land would be restored. Noncultivated land would be reseeded and cultivated land would be brought back to the original grade. DOE/NNSA would be responsible for the reestablishment of native grasses in the impacted areas, which would require approximately two years. The grasses are best planted between February and April. Wheat can be planted to prevent

erosion in the fall, and native grasses can be planted the following spring. If project construction were completed in May or June, the native grasses could still be planted, though that is not the ideal time for establishment.

The Farm Services Agency (FSA) has confirmed that CRP payments to landowners in Carson and Potter counties would not be impacted as long as ground cover is reestablished on the easement. The FSA of Potter and Carson counties would be notified of the impacted landowners by DOE/NNSA. Payments to landowners would continue during the 2-year window of opportunity when reestablishment activities are occurring.

3.2.1.3 Effects of No Action

No construction would take place for upgrading the gas main and distribution system. There would be an increased risk of unscheduled emergency maintenance with land disturbance during the growing season.

3.2.2 Infrastructure/Utilities

3.2.2.1 Affected Environment

Utilities at the Pantex Plant include steam, electricity, natural gas, water, and wastewater treatment.

The Plant natural gas main and distribution system is a piping network that supplies natural gas from a commercial supplier to buildings in Zone 12 North and the outlying areas of the Plant. The gas main is considered to be all the pipe and appurtenances from the connection at the commercial supplier's line offsite to the turbine meter located just inside Pantex Plant property. The distribution system is the network of pipes and appurtenances from the turbine meter to the different zones and buildings located inside the Pantex Plant boundary.

The United States (U. S.) Government owns two offsite pipelines. One is the currently used 10-inch pipeline, and the other is the original 8-inch pipeline that was left in place, and has no planned use for the future.

3.2.2.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

Installation of the new onsite and offsite system would improve the efficiency and reliability of natural gas delivery in portions of Zone 12 North and outlying areas of the Pantex Plant.

Replacing the existing pipelines in Sections 26 and 27 with new pipe would require excavation and removal of the existing and currently abandoned 8-inch line. The proposed line would be hot-tapped into the existing line at the connection point.

After installation and testing are completed, the trench would be backfilled, using front-end loaders and graders. The soil would be compacted with a hand tamper, and the easement would be graded and restored by appropriate measures, including seeding. Signs designating a buried gas pipeline would be placed along the easement, directly above the pipeline at designated intervals.

3.2.2.3 Effects of No Action

If the entire system remains unchanged, there is an increased risk of unscheduled emergency maintenance, a corresponding loss of infrastructure function, and decreased Plant production. This would be a result of the ineffective and inefficient use of natural gas, and the inability to have it supplied at pressures nearer the design criteria for optimum performance.

3.2.3 Biotics

3.2.3.1 Affected Environment

Shortgrass prairie, consisting of buffalograss, blue grama, and western wheatgrass (*Agrophyron smithii*), in drainage ditches and low lying areas, represents the primary habitat for species of concern in the area, for example, Texas Horned Lizard (*Phrynosoma cornutum*), Ferruginous Hawk (*Buteo regalis*), Western Burrowing Owl (*Athene cunicularia hypugaea*), and song birds. Within the portion of the project to occur offsite, approximately 14,724.36 linear feet of pipeline would be in shortgrass prairie habitat. On Pantex proper, 4,524.11 linear feet would be in shortgrass prairie habitat.

Trapping and spotlight surveys have been conducted on Pantex and TTU property to document the presence or absence of Swift Fox (*Vulpes velox*) and Plains Spotted Skunk (*Spilogate putorius interrupta*), rare species without regulatory status. Data suggests that these two species do not occur on these sites, and thus it is believed that they do not occur in the vicinity of the project.

Black-tailed prairie dog (*Cynomys ludovicianus*) colonies are found in the project area, one offsite and one onsite. They provide habitat for some special status species - Feruginous Hawk, Bald Eagle (*Haliaeetus leucocephalus*), Golden Eagle (*Aquila chrysaetos*), Western Burrowing Owl, and some songbirds.

The Texas horned lizard is the only threatened or endangered species that is a year-round resident in the project area. The American and Artic Peregrine falcons (*Valco peregrinus anatum* and *Falso peregrinus tundruis*), as well as the Bald Eagle and Whooping Crane (*Grus America*), are migratory, and may be observed along the project route during the fall through spring migrational and wintering periods.

3.2.3.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

Offsite - This alternative would result in minor, short-term impacts to approximately 9.02 acres of shortgrass prairie habitat offsite. In addition, the new pipe would transverse 0.41 acres within one prairie dog colony, disturbing some burrows, runs, and food sources.

Onsite - This alternative would result in minor, short-term impacts to approximately 3.54 acres of shortgrass prairie habitat onsite. In addition, the new pipe would transverse 1.59 acres within one prairie dog colony, disturbing some burrows, runs, and food sources.

Offsite and Onsite
If fieldwork is conducted during March through August, the primary concern is potential for physical harm to nests, or nests and satellite burrows, of western burrowing owls in the prairie dog towns. It is recommended that work in prairie dog towns be considered outside of this period. If work were conducted during this period, the Natural Resources Coordinator (NRC) for the Regulatory

Compliance Department (RCD) would conduct surveys for burrowing owls. If nests of songbirds and/or game birds were discovered in the construction area, the NRC would be contacted for assistance in mitigating disturbance of these nests. The construction for the project could be delayed.

It is possible that the temporary, narrow disturbance area left from construction would be of use to Texas horned lizards and other species that utilize bare, soft, or recently disturbed ground. If Texas horned lizards were encountered at the site, they would be moved out of harm's way, but released adjacent to the project site.

There is some habitat provided by agricultural crops and CRP lands within the project. Impacts to species of concern (for example, migrant waterfowl, songbirds, whooping cranes, and mountain plovers [*Charadrieus montanus*]) in croplands would be minor and short-lived. This is because crop types are normally rotated and the species of concern are adaptive to finding appropriate foraging habitat among available fields in the vicinity. Of the CRP acreage, 0.88 acres are planted to a near-endemic mixture of buffalograss, blue grama, and side oats grama. Side oats grama normally does not comprise a high percentage of shortgrass prairie; some shortgrass prairie songbirds likely benefit from its increased nesting cover height provided.

Impacts to transient species should be minimal. The habitat disturbance area would be small in geographic scale and temporary.

3.2.3.3 Effects of No Action

Without the gas main and distribution system, there is an increased risk of unscheduled emergency maintenance and a corresponding potential for disturbance to terrestrial habitats during growing or nesting seasons.

3.2.4 Air Quality

3.2.4.1 Affected Environment

Modeling results of concentrations for criteria and toxic pollutants using plant emissions for ongoing operations indicated that none of the National Ambient Air Quality Standards (NAAQS) would be exceeded at the Pantex Plant boundary. All of the toxic air pollutants were estimated to be below their respective Effect Screening Levels (ESLs) at the plant boundary. Modeling performed during the period 1996-2001 indicated that no NAAQS or ESLs were exceeded during that time. Similarly, based on projected emissions for continued operations during the period 2002-2006, concentrations at the Pantex Plant boundary are estimated to continue to remain within all NAAQSs and ESLs.

3.2.4.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

Air emissions would include dust from trenching and movements of construction vehicles, as well as emissions from vehicle exhausts, but would not require monitoring. Standard dust suppression methods, such as water spraying, would be used to minimize dust from excavation or construction. Appropriate best management practices would be used to control fugitive dust and particulate emissions. No air pollutants would be used in the construction of the gas main distribution system upgrade; therefore, no NAAQS or ESLs would be effected.

3.2.4.3 Effects of No Action

The no action alternative would not present any impacts to air quality, except that there would be a potential to exceed permitted air emissions if diesel fuel were used during the time that natural gas is not available, or emergency repairs or maintenance activities were performed.

3.2.5 Cultural Resources

3.2.5.1 Affected Environment

A major thrust of the Plant's Cultural Resources Program has been systematic survey coverage of all areas surrounding the four playas located on DOE-owned land and Texas Tech University land, plus a substantial sample of non-playa areas. Based on these surveys, a prehistoric archeological site location model was developed and confirmed. This site location model holds that prehistoric archeological sites at Pantex Plant, and probably throughout the Llano Estacado, will be located within approximately 1/4 mile of playas or their major drainages. Conversely, such sites will not occur in the interplaya upland areas. This site location model was included in formal consultation with the Texas State Historic Preservation Office (SHPO), and is included in the *2004 Pantex Plant Cultural Resource Management Plan*. Features related to more permanent occupation such as hearths, tipi rings, fire-cracked rock concentrations, architectural evidence, or human burials have not been found at any Pantex Plant sites, either as surface or subsurface expressions. Since at least the early 1900s, historic agricultural activities, such as plowing and grazing, have extensively and aggressively modified virtually all of the Llano Estacado. Consequently, most surface or shallow prehistoric archeological sites are seriously disturbed, lacking the original spatial relationships of their artifacts and features. The Pantex Site Office and the SHPO have agreed that the disturbed sites lack the integrity required for consideration of inclusion in the National Register.

3.2.5.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

No construction would be performed within 1/4 mile of a playa lake; therefore, no impacts to cultural, archeological, or historic resources are expected. Buried material or cultural remains during construction would not be expected, but if they were encountered, activities would cease until the significance of the remains was determined and appropriate subsequent actions were taken.

One World War II-era balance-type valve that may have historical significance would be preserved before the system valves would be replaced.

3.2.5.3 Effects of No Action

This alternative would not present any impacts to cultural resources or properties.

3.2.6 Visual Resources

3.2.6.1 Affected Environment

The topography of the project area is relatively flat. The land is composed of agricultural land, CRP land, and rangeland. In the course of a year, both Pantex workers and some landowners can see different types of crops in various growth stages, vegetation comprised of exotic and native grasses, and wildflowers. Occasionally, cattle can be seen grazing on cropland and rangeland. The office and

production buildings at Pantex are visible to some of the landowners and traffic along Highway 60 and Farm to Market Roads 2373, 683, and 293. Some of the four playas and the Wastewater Treatment Facility, which attract birds and other wildlife, can be seen by some of the landowners and traffic along Highway 60 and Farm to Market Roads 2373, 683 and 293. Shortgrass prairie, including one onsite and one offsite prairie dog colony, and agricultural fields provide ~~a~~ habitat for wildlife that is visible to Pantex workers and some landowners.

3.2.6.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

Heavy equipment and hauling operations, staging areas, site preparation activities, trenching, and construction traffic would impact cultivated ground, CRP land, and rangeland, thereby creating temporary adverse visual effects. A line of exposed earth would mark the pipeline route, while the staging areas would have spots bare of vegetation, but over the long term, removing equipment and reestablishing vegetation in the areas affected by construction would restore the visual qualities of the project area.

3.2.6.3 Effects of No Action

There would be no temporary visual effects caused by heavy equipment and new construction, but maintenance activities with heavy equipment or emergency repairs could result in land disturbance with the adverse visual consequences described above.

3.2.7 Noise

3.2.7.1 Affected Environment

Sources of environmental noise offsite consist of background sounds from vehicular traffic on Highway 60 and Farm to Market (FM) roads, county roads, airport traffic, railroad traffic on a major east-west corridor with two tracks, and the operations of heavy equipment during agricultural activities.

Sources of environmental noise at Pantex Plant consist of background sounds from industrial processes, vehicular traffic, routine operations, occasional high explosives testing, firearms training of security police officers, ongoing construction and demolition of infrastructure, and the operations of heavy equipment during agricultural activities by TTU Research Farm personnel on lands leased from Pantex.

3.2.7.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

The temporary increase in noise levels from construction activities and traffic would be insignificant when compared to the noise levels from ongoing construction activities at Pantex Plant, as well as those from vehicular traffic, airport traffic, railroad traffic, and agricultural activities onsite and offsite.

3.2.7.3 Effects of No Action

Under the No Action Alternative, there would not be any new construction and ambient noise levels would remain unchanged in the vicinity of the proposed pipeline unless increased maintenance activities or emergency repairs result in construction activities.

3.2.8 Transportation/Traffic

3.2.8.1 Affected Environment

Regional and site transportation routes are the primary carriers of traffic generated by plant activities. Onsite inter-zonal transfers between Zones 4, 11, and 12 are carried out on paved roads. Transportation between buildings in Zones 11 and 12 is frequently carried out via enclosed ramps. Track roads are sometimes used for production and monitoring well access and utility access. Onsite transfer of radioactive material is governed by DOE orders and Pantex-specific standards.

Offsite, Highway 60 and FM 683, 2373, and 293 are paved roads that are most heavily used within the project area. There are also unpaved county roads offsite that are less heavily used.

3.2.8.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

There would be some temporary increase in traffic from construction and there might also be re-routing of traffic onsite, as well as for a brief period along FM 683. No other routes would have traffic flow interrupted directly by construction. These activities would not be expected to cause sufficient change in traffic to result in more than a temporary annoyance to the Plant employees or adjacent landowners.

3.2.8.3 Effects of No Action

There would not be a temporary increase in traffic from construction of the gas main and distribution system project, but increased maintenance activities or emergency repairs could result in additional vehicles that could temporarily impede normal Plant or offsite traffic.

3.2.9 Waste

3.2.9.1 Affected Environment

Waste at Pantex Plant is generated from ongoing weapons operations, high explosives production, and support operations such as medical services, vehicle maintenance activities, general office work, construction activities, environmental monitoring, laboratory activities, and environmental restoration activities.

3.2.9.2 Effects of Proposed Action – Construction of New Gas Main and Distribution System

Construction would result in a potential for the generation, treatment, storage, and disposal of solid waste as defined in 40 CFR 261.2. Waste would be handled in a manner that is appropriate to its characterization, and consistent with federal and state regulations and the contractor's approved waste management plan. Waste minimization principles would be incorporated into the project. Residual wastes would be evaluated for possible reduction of volume, toxicity, and mobility.

3.2.9.3 Effects of No Action

There would be no generation of solid waste from new construction. However, increased maintenance activities or emergency repairs could result in the generation of solid waste.

4.0 ACCIDENT ANALYSIS

The Proposed Action consists of activities that are performed on a routine basis in utility line installation and are a common practice in this standardized public utility industry. Therefore, specialized accident types that are considered at DOE/NNSA facilities are not a consideration. The most serious potential accident considered for the Proposed Action would be a fatality during installation of the transmission line. The activities are considered a form of construction, so potential fatalities can be considered by comparing national statistics on construction with project worker information for the Proposed Action. No fatalities are likely to result from the proposed construction.

An accident analysis was performed for the DOE/NNSA Office of Los Alamos Site Operations for an environmental assessment to construct and operate a 12-inch natural gas pipeline within Los Alamos National Laboratory, Los Alamos, New Mexico. The estimated number of workers was compared to risk rates of occupational fatalities for construction. Expectations were for up to 30 full-time employees, working up to 12 hours per day, and up to 7 days per week, for a 6-month duration. This equates to about 110 percent of a normal work year. The average fatality rate in the U.S. for industries that included causes of falls, exposure to harmful substances, fires and explosions, and being struck by objects, equipment, or projectiles was 1.9 per 100,000 workers per year (Saltzman 2001). No deaths (0.00062) from these causes were expected from implementing the Proposed Action at the Los Alamos National Laboratory.

The nonfatal occupation injury and illness rate in the U.S. for the occupational category, including public utilities for this period, was 8.7 per 100 workers per year. At this rate, and assuming the working statistics provided for the proposed action, about three nonfatal injuries/illness were expected for the project at the Los Alamos National Laboratory.

These statistics are reasonable for the construction work to be performed at the Pantex Plant.

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5.0 CUMULATIVE EFFECTS AND MITIGATION MEASURES OF THE PREFERRED PLAN

Land Use and Soils: There would be no cumulative effects relating to the land use and soils. Agricultural terraces would be restored to their original condition, the disturbed land would be reseeded, and the CRP land would be restored to CRP status.

Infrastructure: Natural gas pressures would be supplied at the volume needed for the distribution system. Emergency maintenance activities in future years would be reduced and/or eliminated by replacing the old pipeline.

Biotics: Although there would be potential for disturbance of species of concern, such as the burrowing owl and Texas horned lizard, this potential would be mitigated by the Pantex Plant RCD surveys and survey requirements prior to ground disturbance, based on the list of protected species habitats documented and/or expected to reside onsite.

Air Quality: Air emissions would include dust from trenching and the movements of vehicles involved in the construction activities, as well as emissions from vehicle exhausts, but these activities would not require monitoring.

Cultural Resources: Based on the Plant's Cultural Resources Program's systematic survey coverage of all areas surrounding the four playas located on DOE-owned land and Texas Tech University land, plus a substantial sample of non-playa areas, no impacts to cultural, archeological, or historic resources are expected.

Visual Resources: Over the long term, the visual qualities of the project area would return after removal of the equipment and staging areas, restoration of agricultural terraces, and revegetation of the areas affected by construction.

Noise: The proposed action would result in limited short-term increases in noise levels associated with pipeline construction activities. Following the completion of these activities, noise levels would return to pre-construction levels.

Traffic: The proposed action would result in short-term increases in traffic associated with pipeline construction activities. Following the completion of these activities, traffic would return to pre-construction levels.

Waste: Waste from pipeline construction would be removed from the project area and handled in a manner appropriate to its characterization, consistent with federal and state regulations and the contractor's approved waste management plan.

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6.0 AGENCIES, ORGANIZATIONS, AND PERSONS CONTACTED

- United States Department of Agriculture,
- Farm Services Administration (FSA) for Carson and Potter counties
- Texas Tech University Farm Manager
- Panhandle Regional Planning Commission
- U. S. Fish and Wildlife Service
- Texas Parks and Wildlife Department

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7.0 AGENCY RESPONSES

- Panhandle Regional Planning Commission, Gary Pitner, Executive Director
- United States Department of the Interior, Thomas J. Cloud, Jr., Field Supervisor

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PANHANDLE
REGIONAL
PLANNING
COMMISSION

July 13, 2005

Mr. Jerry S. Johnson
Assistant Manager for Environmental
& Site Engineering Programs
U. S. Department of Energy
Pantex Site Office
P.O. Box 30030
Amarillo, Texas 79120-0030

RE: TRACS Review of Proposed Applications
Entitled: Environmental Assessment – Proposed Gas Main & Distribution System Upgrade
SAI No.: TX-W-20050712-0004-01

Dear Mr. Johnson:

The Panhandle Regional Planning Commission received the above application on July 12, 2005. After having considered this Environmental Assessment for a proposed gas main and distribution system upgrade, it was our decision to waive review.

If you have any questions, please contact the Planning Commission. Thank you for the opportunity to consider your application.

Sincerely,

Gary Pitner

Gary Pitner
Executive Director

415 West Eighth Avenue
P.O. Box 9257
Amarillo, Texas 79105
(806) 372-3381
(806) 373-3268 (fax)
www.prpc.cog.tx.us

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PANHANDLE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
WinSystems Center Building
711 Stadium Drive, Suite 252
Arlington, Texas 76011

2-12-05-I-357

August 9, 2005

Mr. Jerry Johnson
U.S. Department of Energy
National Nuclear Security Administration
Pantex Site Office
P.O. Box 30030
Amarillo, TX 79120-0030

Dear Mr. Johnson:

This responds to your July 7, 2005 certified mail inquiry requesting comments on the Environmental Assessment (EA) for the proposed gas main and distribution system upgrade in Carson County, Texas. The proposed project consists of the installation of 27,367 feet of 10-inch gas pipeline on-site, with an additional 47,000 feet being installed off-site. All pipeline installations will be in parallel with the existing on-site and off-site gas main and distribution system, and all disturbed surface will be restored to pre-construction conditions. In addition, your project was evaluated with respect to wetlands and other important fish and wildlife habitat.

Our records indicate that the following federally listed endangered (E) and threatened (T) species are known to occur in Carson County:

whooping crane (*Grus americana*) - E
bald eagle (*Haliaeetus leucocephalus*) - T

According to the EA, these species are not likely to be encountered within the project area during construction. With respect to wetlands and other important fish and wildlife habitat, it appears that the proposed action would not significantly affect these resources. If project plans change or portions of the proposed project were not evaluated, it is our recommendation that the changes be submitted for our review. If you require additional information, please contact John Hughes of the West Texas Suboffice at (806) 323-6636 or Omar Bocanegra of the Arlington Field Office at (817) 277-1100.

Sincerely,

Tom Cloud

Thomas J. Cloud, Jr.
Field Supervisor

cc: John Hughes, FWS, West Texas Suboffice, Canadian, Texas

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8.0 REFERENCES

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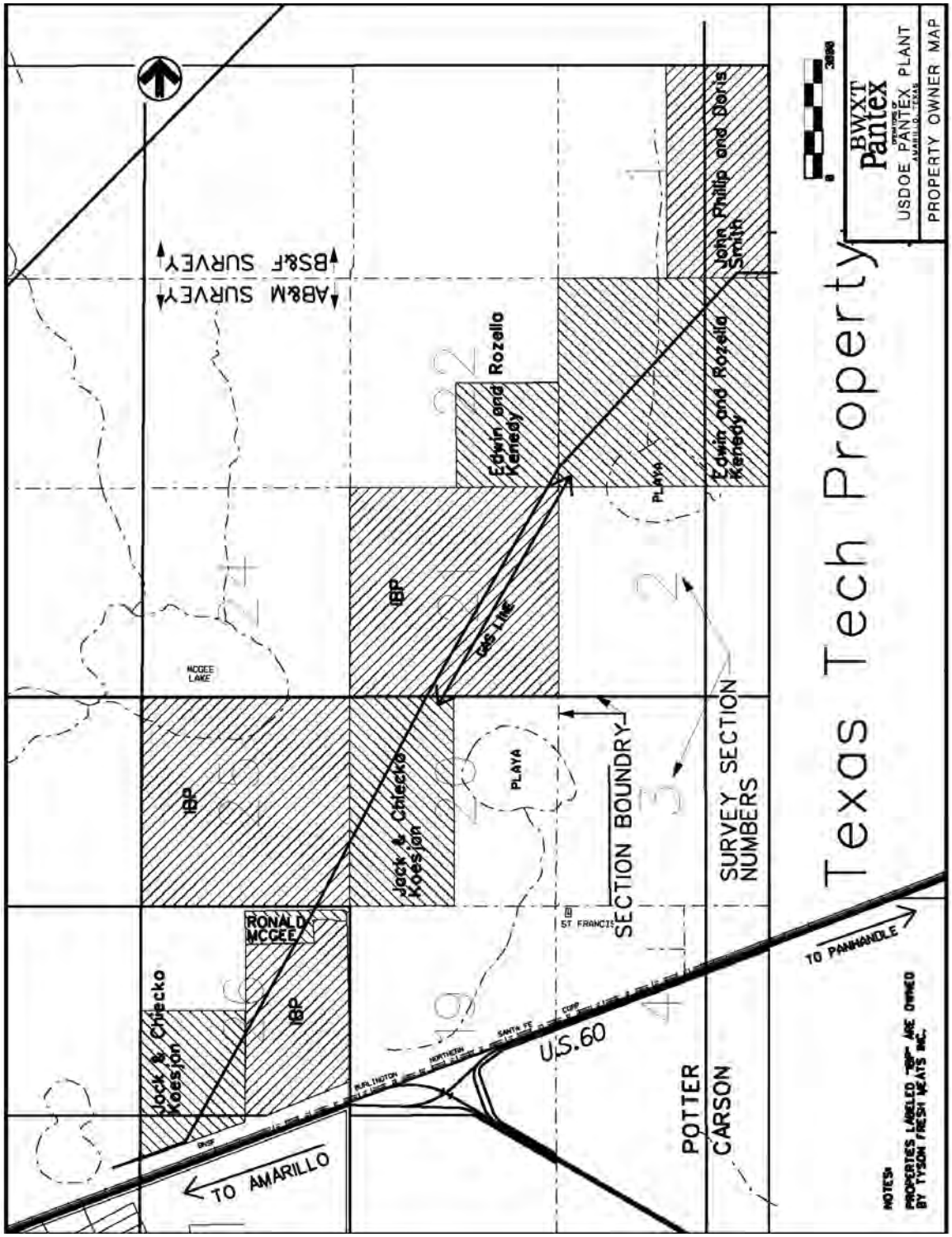
Offsite Map with Names of Land Owners



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Current Land Use Along Proposed Gas Line