# United States Department of the Interior
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## *WPX Energy Production, LLC's*
## *Chaco 2308-04P Nos. 149H & 15OH Pipelines*

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# 1. PURPOSE AND NEED FOR ACTION

## 1.1. Background

WPX Energy Production, LLC (WPX) has applied for two Right-of-Way (ROW) Grants with the Bureau of Land Management- Farmington Field Office (BLM-FFO) for the Chaco 2308-04P Nos. 149H and 150H (149H/150H) natural gas, liquids (oil), and water pipelines project. The proposed action is the approval of the ROW Grants by the BLM-FFO, located in Farmington, New Mexico.

The proposed project area is located on surface managed by the BLM-FFO. The proposed project would include the construction, usage, and abandonment of four pipelines (two natural gas, one oil, and one water) within one 4,167-foot-long (0.8-mile-long) pipeline corridor. The proposed pipelines would transport natural gas, oil, and water from WPX's 149H/150H wells. As of the date of the November 21, 2013, pre-disturbance onsite meeting, the 149H/150H well project (i.e., two wells, one well pad, and one access road) had not been constructed but had been permitted by the BLM (Application for Permit to Drill Nos. 30-045-35495 and 30-045-35497). The proposed pipelines would transport the natural gas, oil, and water to WPX's existing Chaco 2308-161 No. 147H (147H) Tank Battery Site. The proposed natural gas pipeline would tie into an existing Beeline Gas Systems (Beeline) pipeline at the 147H Tank Battery Site. The water and oil from the water and oil pipelines would be stored in tanks on the 147H Tank Battery Site.
The pipeline corridor would be permitted under one ROW Grant.

In addition, during pipeline construction, three temporary use areas (TUAs) would be utilized along the proposed pipeline corridor: one previously permitted TUA associated with the 149H/150H access road and two new TUAs. The TUAs are located on surface managed by the BLM-FFO. The two new TUAs would be permitted under one ROW Grant.

New surface disturbance associated with the proposed project area would be 4.5 acres. This would include approximately 2.0 acres of new pipeline corridor disturbance and 2.5 acres of new TUA disturbance. All new surface disturbance associated with the pipeline corridor would be reclaimed during interim reclamation. All new disturbance associated with the proposed pipeline corridor and TUAs would be reclaimed during interim reclamation, and any additional disturbance associated with the final abandonment phase of the proposed project would be reclaimed during final reclamation, if these areas meet the acreage requirements for reclamation.

Oil and natural gas, vital components of the nation's energy supply, account for approximately 36 and 25 percent of total energy consumed in the U.S., respectively (U.S. Energy Information Administration 2012). Natural gas is used in homes, commercially, in industry, and in the transportation sector. Common uses for natural gas include space heating, water heating, cooling, cooking, waste treatment and incineration, metals preheating, drying and humidification, glass melting, food processing, fueling industrial boilers, vehicle fueling, and electricity generation. Gases such as butane, ethane, and propane can be extracted from natural gas to be used for products such as fertilizers and pharmaceuticals. Natural gas can also be used to create methanol, which is utilized in the production of formaldehyde, acetic acid, fuel cell sources, and additives for cleaner burning gasoline (Natural Gas Supply Association 2010). Most oil goes into fuels, including gasoline, jet fuel, and home-heating oil. Additionally, non-fuel compounds extracted from oil are used to develop lubricants; asphalt for roads; tar for roofing; waxes for food wrapping; solvents for paints; cosmetics and dry-cleaning products; plastics; and foams (U.S. Energy Information Administration 2012).

Most of the oil and natural gas found in North America is concentrated in distinct basins. The BLM-FFO management area is within the San Juan Basin, one of the most prolific gas-producing basins in the country. Currently, the San Juan Basin produced small amounts of oil (BLM 2003a).

Taxes and royalties on oil, natural gas, and carbon dioxide production contribute approximately 25 percent of New Mexico's general fund, and the oil and gas industry is one of the largest private sector employers in the state (New Mexico Bureau of Geology and Mineral Resources 2012). Additionally, the

federal government receives royalties, or a share of the production income, for extracted federal minerals. In 2011, federal natural gas royalties totaled over 2 billion dollars (Office of Natural Resources Revenue 2012).

The proposed project area is located within the BLM-FFO management area, approximately 36 miles south-southeast of the town of Bloomfield, New Mexico, and approximately 3 miles east-southeast of the community of Nageezi (see Figure A.1, Appendix A).

## 1.2. Purpose and Need for Action

The purpose of the proposed action is to allow WPX reasonable access to BLM-managed lands to develop their mineral leases.

The need for the proposed action is established by the BLM's responsibility under the Mineral Leasing Act of 1920, as amended {30 USC [U.S. Code)181 et seq.), and the Federal Land Policy and Management Act of 1976 (FLPMA, 43 USC 1701 et seq.) to respond to a request for a ROW Grant over BLM surface.

## 1.3. Decision to be Made

The BLM-FFO will decide whether or not to issue the ROW Grants for the proposed project, and if so, under what terms and conditions. Under the National Environmental Policy Act (NEPA; Public Law 91-90, 42 USC 4321 et seq.), the BLM-FFO must determine if there are any significant environmental impacts associated with the proposed action warranting further analysis in an Environmental Impact Statement (EIS). The BLM-FFO Field Manager is the responsible officer who will decide one of the following:

- To approve the two ROW Grants with design features as submitted
- To approve the two ROW Grants with additional mitigation added
- To analyze the effects of the proposed action in an EIS
- To deny the two ROW Grants

## 1.4. Conformance with Applicable Land Use Plan(s)

The proposed action is in conformance with the 2003 BLM-FFO Resource Management Plan (AMP). Pursuant to 40 CFR 1508.28 and 1502.21, this site-specific EA tiers into and incorporates by reference the information and analysis contained in the BLM-FFO Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS; BLM 2003a). The AMP was approved by the September 29, 2003 Record of Decision (ROD; BLM 2003b), and updated in December 2003.

Specifically, the proposed action supports the following BLM policy:

> It is the policy of the BLM to make mineral resources available for disposal and to encourage development of mineral resources to meet national, regional, and local needs, consistent with national objectives of an adequate supply of minerals at reasonable market prices. At the same time, the BLM strives to ensure that mineral development is carried out in a manner that minimizes environmental damage and provides for the rehabilitation of affected lands. (BLM 2003b, 2-2 – 2-3)

Development of energy-related ROWs, such as pipelines, is one of the primary activities of the BLM-FFO lands program. Such ROWs receive environmental review on a case-by-case basis (BLM 2003b). As required by NEPA, this EA addresses site-specific resources and effects of the proposed action that were not specifically covered within the PRMP/FEIS.

## 1.5. Relationship to Statutes, Regulations or Other Plans

WPX would comply with applicable federal, state, and local laws and regulations. Necessary permits and approvals for the proposed project would be obtained prior to project implementation.

Many requirements regulating specific environmental elements are found in the appropriate elements sections of this EA (Chapter 3). Several permits, licenses, consultations, or other requirements are discussed below.

### *1.5.1. Clean Water Act*

The proposed action is in conformance with the Clean Water Act, as amended (CWA; 33 USC 1251 et seq.).

Under Section 401 of the CWA, an applicant for a federal license or permit to conduct an activity that may result in a discharge into a water of the U.S. must provide the federal agency with a Section 401 certification declaring that the discharge would comply with the CWA. The certification would be granted by the New Mexico Environment Department (NMED).

Under Section 402 of the CWA, the U.S. Environmental Protection Agency (EPA) regulates storm water discharges from industrial and construction activities under the National Pollution Discharge Elimination System program. Permits are required if discharge results in a reportable quantity for which notification is required (pursuant to 40 CFR 117.21, 40 CFR 302.6, or 40 CFR 110.6) or if the discharge contributes to a violation of a water quality standard.

Under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. The Section 404 program is administered by the EPA and U.S. Army Corps of Engineers (USACE). Under the CWA, the USACE has jurisdiction over waters of the U.S. Waters of the U.S. are considered jurisdictional because they have a "significant nexus" to traditional navigable waters. The BLM-FFO and USACE- Durango Regulatory Office have determined that jurisdictional waters (i.e., waters of the U.S.) may include U.S. Geological Survey (USGS) watercourses (i.e., "blue lines" on USGS 1:24,000 topographic maps) and potentially tributaries to these USGS watercourses. A Section 404 permit is required for projects that would result in discharged material into a water of the U.S. The proposed pipelines would cross three ephemeral, unnamed watercourses that are tributaries to Kimbeto Wash. The three watercourses have a defined stream channel (i.e., Ordinary High Water Mark) and would thereby likely be subject to regulatory jurisdiction under the USACE. Assuming these watercourses are jurisdictional, the crossings would be covered under Nationwide Permit No. 12 (Utility Line Activities). The proposed project would be designed to avoid discharge into other watercourses that are potentially USACE jurisdictional.

### *1.5.2. National Historic Preservation Act*

Section 106 of the National Historic Preservation Act of 1966 (NHPA; 16 USC 470) requires federal agencies to take into account the effects of their actions on historic properties, and allow the Advisory Council on Historic Preservation a reasonable opportunity to comment. Compliance with the requirements of the NHPA is met by following the Protocol Agreement between the New Mexico BLM and New Mexico State Historic Preservation Officer, which is authorized by the Programmatic Agreement among the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1997).

### *1.5.3. Clean Air Act*

The Clean Air Act of 1972, as amended (CAA; 42 USC 7401 et seq.), establishes national ambient air quality standards (NAAQS) to control air pollution. In New Mexico, the NMED has adopted most of the CAA into the New Mexico Administrative Code (NMAC). The NMED issues construction and operating permits for air quality and enforces air quality regulations and permit conditions.

## 1.6. Scoping, Public Involvement, and Issues

### *1.6.1. Scoping and Public Involvement*

The BLM-FFO publishes a NEPA log for public inspection. This log contains a list of proposed and approved actions within the BLM-FFO. The log is located on the BLM's New Mexico website (http://www.blm.gov/nm/st/en/prog/planning/nepa_logs.html).

An onsite meeting, attended by WPX, BLM-FFO representatives, and an environmental consultant (Nelson Consulting, Inc. [NCI]), was held for the proposed project on November 21, 2013. The local chapter of the Navajo Nation was invited to the meeting by the BLM-FFO; no members of the Navajo Nation attended the meeting. A public invitation to the on-site meetings was posted online (http://www.blm.gov/nm/st/en/fo/Farmington_Field_Office/ffo_oil_and_gas/ffo_onsites.html); no private citizens or groups attended the meetings. A BLM-FFO Interdisciplinary Team meeting was held in December 2013 to discuss the proposed action. At the aforementioned meetings, potential issues of concern were identified by the BLM-FFO and NCI.

Based on the size and scale, routine nature, and potential impacts associated with the proposed action, no additional external scoping was conducted. No public comments were received for the proposed action.

### *1.6.2. Issues*

#### Issues Analyzed

The following issues were identified during internal scoping as potential issues of concern for the proposed action. These issues will be addressed in this EA.

- How would dust and equipment emissions associated with the proposed project impact air resources?
- How would vegetation-clearing, proposed project activities, and final reclamation impact soils?
- How would vegetation-clearing, proposed project activities, and final reclamation associated with the proposed project impact upland vegetation?
- How would vegetation-clearing, proposed project activities, and reclamation associated with the proposed project impact noxious weeds and invasive species?
- How would vegetation-clearing, proposed project activities, and final reclamation impact wildlife, including migratory birds?
- How would vegetation-clearing, proposed project activities, and final reclamation impact the following BLM Special Status Species (SSS): Aztec gilia *(Aiiciella formosa),* Brack's fishhook cactus *(Sclerocactus cloveriae* var. *brackil),* Bendire's thrasher *(Toxostoma bendiret),* ferruginous hawk *(Buteo regalis),* golden eagle *(Aquila chrysaetos),* and prairie falcon *(Falco mexicanus)?*
- How would surface-disturbing activities associated with construction of the proposed project impact cultural resources?

#### Issues Considered but not Analyzed

The following issues were identified during scoping as issues of concern that would not be impacted by the proposed action or that have been covered by prior environmental review. These issues will not be analyzed in this EA.

## *Surface Water Resources*

As discussed in Section 1.5.1 (Clean Water Act), the BLM-FFO and USAGE- Durango Regulatory Office have determined that USAGE-jurisdictional waters may include USGS watercourses. The proposed pipelines would cross three ephemeral watercourses; all of these watercourses are potentially USAGE-jurisdictional. The pipelines would be trenched through these watercourses and fill and topsoil would be placed over the pipelines to match the original terrain; the permanent elevation of the watercourses would not be changed.

WPX originally proposed locating the proposed pipelines (from approximate stationing 34+73.96 to 38+89.62) on the southeastern side of the permitted 149H/150H access road; however, an ephemeral, USGS watercourse was present at this location. Therefore, WPX re-routed the proposed pipelines to the northwestern side of the permitted 149H/150H access road to avoid this watercourse.

Impacts to surface water resources from the proposed project would be expected to be negligible.

## *U.S. Fish and Wildlife Service (USFWS)-Listed Species*

Under Section 7 of the Endangered Species Act of 1973 (ESA; 16 USC 1531-1544), all federal agencies are required to consult with the USFWS or National Marine Fisheries Service if they are proposing an action that may affect listed species or designated habitat. Consultation with the USFWS was conducted as part of the PRMP/FEIS to address the cumulative effects of AMP implementation (Consultation No. 2-22-01-1-389, Appendix M of the PRMP/FEIS). Based on a review of species currently listed by the USFWS as occurring in San Juan County (USFWS 2013}, as well as the location of the proposed project area and habitat within the proposed project area, the potential does not exist for USFWS-listed species to occur within the proposed project area (refer to Biological Survey Report [BSR], Appendix B). No unaccounted-for water depletions within USFWS-listed fish habitat would occur as a result of the proposed project. Therefore, there is no need for additional Section 7 consultation.

## *Native American Religious Concerns*

For the proposed action, identification efforts for Native American Religious Concerns were limited to a review of existing published and unpublished literature (e.g., Van Valkenburgh 1941, 1974; Brugge 1993; Kelly, et al. 2006), development of the site-specific Class III survey report prepared for the proposed action (La Plata Archaeological Consultants [LAC] Report No. 2013-5jj#2 [LAC 2013]), and a review by the BLM's cultural resources program regarding the presence of Traditional Cultural Properties (TCPs) identified through ongoing BLM tribal consultation efforts. There are currently no known remains that fall within the purview of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; 25 USC 3001) or the Archaeological Resources Protection Act (ARPA; 16 USC 470) within the proposed project area. The proposed action would not impact any known TCPs, prevent access to sacred sites, prevent the possession of sacred objects, or interfere with or hinder the performance of traditional ceremonies and rituals pursuant to the American Indian Religious Freedom Act of 1978 (AIRFA; 42 USC 1996) or Executive Order (EO) 13007.

## *Paleontology*

The proposed project area is located within the paleontologically rich area of the San Juan Basin in northwestern New Mexico, and the southern half of the proposed project area is located within the Lybrook Fossil Specially Designated Area. The BLM used the Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands (Instruction Manual 2008-009) to identify areas with a high potential to produce significant fossil resources (BLM 2008d}. Under this system, all lands within the BLM-FFO management area were designated as Class 5 (Very High Potential) for paleontological resources.

Class 5 areas require an assessment of paleontological resources at the project level (BLM 2009). If a paleontological site is discovered during the construction phase of the proposed project, the site would be avoided by personnel, personal vehicles, and company equipment. Therefore, no impacts to paleontological resources are anticipated as a result of the proposed project.

# 2. PROPOSED ACTION AND ALTERNATIVE(S)

## 2.1. Proposed Action

The proposed action is the BLM-FFO approval of two ROW Grants associated with WPX's 149H/150H natural gas, oil, and water pipelines. The proposed project would include the construction, use, and final abandonment of these pipelines and associated facilities. The proposed project would commence after the ROW Grants are issued.

The proposed pipeline corridor would be 4,167 feet (0.8 mile) long. The proposed corridor would consist of two 6-inch-diameter, steel, natural gas pipelines; a 6-inch-diameter, flex, water pipeline; and a 6-inch-diameter, steel, oil pipeline. The proposed pipelines would transport natural gas, oil, and water from WPX's 149H/150H wells to WPX's existing 147H Tank Battery Site, where the proposed natural gas pipeline would tie into an existing Beeline pipeline and the water and oil would be stored in tanks. The four pipelines would be constructed simultaneously. Two trenches would be utilized for the proposed project. The trenches would be off-set from one another by 5 feet; one trench would have a natural gas pipeline and water pipeline and one trench would have a natural gas pipeline and oil pipeline. All four pipelines would be placed within the same 40-foot-wide pipeline corridor.

During construction, there would be three TUAs (one previously permitted TUA associated with the149H/150H access road and two new TUAs) along the proposed pipeline corridor. One new TUA (TUA No. 1) would be located at the bore exit hole (on the northern side of U.S. Highway 550) and would provide room for the bore exit hole ("bellhole") and for stringing pipe. The second new TUA (TUA No. 2) would be located immediately east of the bore entry hole, on the southern side of U.S. Highway 550, and would be used for vehicles to turn around.

Additionally, a pig launcher would be installed on the 147H Tank Battery Site; all of the surface disturbance associated with the pig launcher would overlap existing disturbance.

Construction plats associated with the proposed project are provided in Appendix C. Photographs of the proposed project area are provided in Appendix D.

### *2.1.1. Location of Proposed Project Area*

Maps of the proposed project area are provided in Appendix A. The proposed project area is plotted on the Crow Mesa West and Lybrook Northwest, New Mexico, 7.5-minute USGS quadrangles (Figure A.2) and the 2011 San Juan County National Agriculture Imagery Program aerial photograph (Figure A.3).

The proposed project area is located within the BLM-FFO management area in San Juan County, New Mexico. The proposed project area is located on BLM-FFO surface within the San Juan Basin. The proposed project area is located approximately 36 miles south-southeast of the town of Bloomfield, New Mexico, and approximately 3 miles east-southeast of the community of Nageezi.

The proposed project area is located within Sections 4 and 9 of Township 23 North, Range 8 West (New Mexico Principal Meridian [NMPM]). The pipelines would start at WPX's permitted 149H/150H well pad, within the southeastern quarter of the southeastern quarter of Section 4, and end at WPX's 147H Tank Battery Site, within the northwestern quarter of the northeastern quarter of Section 9. TUA No. 1 would be located north of U.S. Highway 550 at the bore exit hole, and TUA No.2 would be located immediately east of the bore entry hole, on the southern side of U.S. Highway 550. The legal locations (NMPM) of the proposed project area are provided in Table 1, below.

Table 1. Legal LandOescripbon for the Proposed Project (wt-t un Townsh 23 North, Ran_ge 8 West)

| Section | Quarter-Quarter |
|---|---|
| 4 | southern ½ of southeastern ¼ |
| 9 | northwestern ¼ of northeastern ¼ |

The general region surrounding the proposed project area is characterized by badlands, mesas, and relatively flat lowland valleys. There are many broad, braided, shallow washes in the area. Specifically, the proposed project area is located at approximately 6,800 to 6,900 feet above mean sea level (AMSL). The proposed project area is located on gently rolling terrain, with a very gentle slope to the northwest toward Kimbeto Wash.

U.S. Highway 550 and existing and proposed oil and gas lease roads, well pads, and pipeline corridors are in the general vicinity of the proposed project area. The entire proposed pipeline corridor would parallel or overlap the following existing disturbance areas:

- WPX's 149H/150H well pad (as of the date of the November 2013, pre-disturbance onsite meeting, the 149H/150H well pad had not been constructed but had been permitted by the BLM}
- WPX's 149H/150H access road (as of the date of the November 2013, pre-disturbance onsite meeting, the 149H/150H access road had not been constructed but had been permitted by the BLM}
- Logos Resources, LLC's (Logos's) newly constructed pipeline corridor (not reclaimed as of the date of the November 2013, pre-disturbance onsite meeting)
- U.S. Highway 550
- Existing access road leading to WPX's 147H Tank Battery Site
- WPX's 147H Tank Battery Site

Existing disturbance overlapped by the proposed project is discussed further in Section 2.1.3 (Proposed Surface Disturbance), below.

### *2.1.2. Description of Proposed Project*

For a detailed description of design features and construction practices associated with the proposed project, refer to the ROW Grant Applications on file at the BLM-FFO. The plats (Appendix C) provide additional details. WPX would comply with BLM guidance and standards established in *The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (Gold Book;* BLM and U.S. Forest Service [USFS] 2007).

#### Design Features and Best Management Practices

WPX would adhere to the stipulations attached to the approved ROW Grants. The following general design features and best management practices (BMPs) would occur.

#### *Control of Waste*

Liquid and solid wastes would be disposed of at an appropriate waste-disposal site. The proposed project area would be maintained in a sanitary condition. Hazardous substances would be handled and disposed of according to federal law. Waste resulting from construction activities would be removed from the proposed project area and disposed of in an authorized area, such as an approved landfill.

#### *Protection of Paleontological Resources*

If a paleontological site is discovered, the BLM would be notified and the site would be avoided by personnel, personal vehicles, and company equipment. Workers would be informed that it is illegal to

collect, damage, or disturb some such resources, and that such activities are punishable by criminal and/or administrative penalties.

### *Protection of Cultural Resources*

All cultural resource stipulations would be followed as indicated in the Cultural Resource Records of Review, attached to the stipulations in the approved ROW Grants. These stipulations could include, but would not be limited to, temporary or permanent fencing or other physical barriers, monitoring of earth-disturbing construction, reduction of the proposed project areas and/or establishment of specific construction avoidance zones, and employee education.

Employees, contractors, and sub-contractors associated with the proposed project would be informed by WPX that cultural sites are to be avoided by personnel, personal vehicles, and company equipment. These individuals would be informed that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and/or administrative penalties under the provisions of ARPA.

In the event of a cultural discovery during construction, WPX would immediately stop all construction activities in the immediate vicinity of the discovery and immediately notify the archaeological monitor, if present, or the BLM. The BLM would then evaluate or cause the site to be evaluated. Should a discovery be evaluated as significant (e.g., eligible for the National Register of Historic Places [NRHP] or protected under NAGPRA or ARPA), it would be protected in place until mitigating measures could be developed and implemented according to guidelines set by the BLM.

### *Protection of Flora and Fauna, including SSS and Livestock*

Because the proposed project would disturb more than 4.0 acres of vegetation, if construction activities would occur during the migratory bird breeding season (May 15 through July 31), a migratory bird nest survey of the proposed project area would take place one to two days prior to construction. This survey would be conducted by a BLM-FFO-approved biologist following BLM-FFO protocol. If, during the nest survey or during construction, active nests are located within or adjacent to the proposed project area, the BLM-FFO biologist would be notified and project activities would not be permitted until fledging has occurred. If postponement is not an option, the operator would contact the USFWS's Migratory Bird Permit Office regarding permitting.

The proposed project area is within the BLM-designated habitat "zone" for two BLM SSS: Brack's fishhook cactus and Aztec gilia (BLM 2013b; Figures A.2 and A.3 [Appendix A]). During a biological survey by NCI, 24 Brack's fishhook cacti and no Aztec gilia were identified within the proposed project area. As advised by the BLM-FFO and following 2013 BLM-FFO protocol, these cacti were removed on October 30, 2013; these individuals were transplanted by NCI off-site (in the vicinity of the proposed project area but away from proposed disturbance) on November 20, 2013. Transplant methods complied with current BLM-FFO requirements (BLM 2013c).

Should any active raptor nests be observed within one-third mile of the proposed project area or should any additional SSS (listed by the USFWS or BLM) be observed within the proposed project area prior to or during project implementation, construction would cease and the BLM-FFO would be immediately contacted. The BLM-FFO would then ensure evaluation of the resource. Should a discovery be evaluated as significant (protected under the ESA, etc.), it would be protected in place until mitigation could be developed and implemented according to guidelines set by the BLM.

WPX would notify the grazing lease operator(s) at least 10 business days prior to beginning the construction phase of the proposed project in order to ensure that there would be no conflicts between construction activities and livestock grazing operations. WPX would not cease or delay construction unless directed by the authorized BLM-FFO officer. If present, any range improvements (e.g., fences, pipelines, and ponds) disturbed by construction activities would be repaired to the condition they were in prior to disturbance. Repairs, if needed, would take place immediately following construction.

The following design features would apply to the proposed project:

- No more than a half mile of trench, or the amount of trench that could be worked in a day, would be opened at one time.
- Backfilling operations would be performed within a reasonable amount of time to ensure that the trench is not left open for more than 24 hours. If a trench is left open overnight, it will be fenced with a temporary fence or a night watchman will be utilized
- The ends of the pipe trenches would be sloped (3-to-1) to allow animals to escape.
- The ends of the pipes would be plugged to prevent animals from crawling into the pipe.
- Escape ramps would be constructed every 1,320 feet within an open trench. In areas where livestock are actively grazing, escape ramps would be placed every 500 feet within the open trench. The escape ramps would have a minimum 3-to-1 slope to allow for wildlife and/or livestock to escape the trench.
- Established wildlife and/or livestock trails would be left in place as a crossover. Crossovers would be constructed every 1,320 feet above an open trench, would have a minimum 3-to-1 slope, would be a minimum of 10 feet wide, and would not be fenced.
- Before the trench is closed, the trench would be inspected for wildlife and/or livestock. Any trapped wildlife/livestock would be promptly removed and released at least 150 yards from the trench.

### *Protection of Water Resources*

The watercourses crossed by the proposed pipeline corridor would be recontoured to original conditions, as near as possible, and the proposed pipelines would be buried approximately 6 feet beneath the drainages.

### *Protection of Topsoil*

Topsoil, which would be stripped from the surface of the proposed pipeline corridor during the construction phase of the proposed project, would be stored and protected until it is redistributed during reclamation. The topsoil would be stored separately from subsoil or other excavated material within the proposed pipeline corridor. The topsoil would be free of brush and tree limbs, trunks, and roots. Vehicle/equipment traffic would not be allowed to cross topsoil stockpiles. The topsoil would be protected using wattles or other BMPs so that erosion is minimized. If topsoil is stored for a length of time such that nutrients are depleted from the topsoil, amendments would be added to the topsoil as advised by the WPX environmental scientist or appropriate agent/contractor.

### *Protection of the Public*

The hauling of equipment and materials for the proposed project on public roads would comply with Department of Transportation regulations. No toxic substances would be stored or used within the proposed project area. WPX would have inspectors present during construction. Any accidents involving persons or property would immediately be reported to the BLM-FFO. WPX would notify the public of potential hazards by posting signage, as necessary.

### *Prevention and Control of Weeds*

Prior to construction equipment entering the proposed project area, construction equipment would be inspected for noxious weeds and cleaned.

It would be WPX's responsibility to monitor, control, and eradicate all invasive, non-native plant species within the proposed project area throughout the life of the project. WPX's weed-control contractor would contact the BLM-FFO regarding acceptable weed-control methods. If the contractor does not hold a

current Pesticide Use Permit, a Pesticide Use Permit would be submitted prior to pesticide application. Only pesticides authorized for use on BLM lands would be used. The use of pesticides would comply with federal and state laws. Pesticides would be used only in accordance with their registered use and limitations. WPX's weed-control contractor would contact the BLM-FFO prior to using these chemicals.

### *Protection of Air Resources*

BMPs for dust suppression would be utilized within the proposed project area to reduce fugitive dust during the construction phase of the proposed project. Water application, using a rear-spraying truck or other suitable means, would be the primary method of dust suppression within the proposed project area. Any additional dust-suppression practices would include the BLM-standard BMPs found in the *Gold Book* (BLM and USFS 2007) and the BMPs outlined in the stipulations attached to the approved ROW Grants.

### *Additional Design Features and BMPs*

Vehicles would be restricted to proposed disturbance areas and existing areas of surface disturbance, such as existing roads and well pads.

Worker safety incidents would be reported to the BLM-FFO as required under Notice to Lessees (NTL) - 3A (USGS 1979). WPX would adhere to company safety policies, Occupational Safety and Health Administration regulations, and Department of Transportation regulations.

WPX would comply with Onshore Oil and Gas Order No.2, issued under Onshore Oil and Gas Operations (43 CFR 3160).

Construction and maintenance activities would cease when soil or road surfaces become saturated to the extent that construction equipment is unable to stay within the proposed pipeline corridor and/or when activities would cause irreparable harm to roads, soils, or streams. No frozen soils would be used for construction purposes or trench backfilling. WPX would use the six-step frozen ground procedure during frozen ground conditions.

WPX would avoid traffic hazards on U.S. Highway 550 and the disruption of a rugged topographic area south of U.S. Highway 550 that would be difficult to reclaim by utilizing boring construction methods beneath U.S. Highway 550 and the rugged topographic area. This bored area would be located between approximate stationings 10+55.19 to 13+20.25.

Erosion-control features, such as waterbars along the proposed pipeline corridor, would be applied as specified by the BLM-FFO Authorized Officer. If waterbars are constructed, the spacing requirements by hillslope grade are provided in Table 2, below. The waterbars would follow the horizontal contour of the hillslope on which they would be placed.

Table 2. Waterbar Spacing Requirements by Percent Grade of Hillslope

| Hillslope Percent Grade (%) | Waterbar Spacing (feet) |
|---|---|
| Less than 1 | 400 |
| 1-5 | 300 |
| 5-15 | 200 |
| 15-25 | 100 |

## Proposed Project Phases

Under the proposed action, the following phases would occur.

### *Construction and Installation of Pipelines*

The BLM-FFO would be notified at least 48 hours prior to the start of construction. WPX is requesting a 50-year term for the proposed pipeline ROW Grants. The four proposed pipelines would be in operation year-round; however, the volume of natural gas, oil, and water is not known at this time.

The four pipelines would be constructed simultaneously. Two trenches would be utilized for the proposed project. The trenches would be off-set from one another by 5 feet; one trench would have a natural gas pipeline and water pipeline and one trench would have a natural gas pipeline and oil pipeline. All four pipelines would be placed within the same 40-foot-wide pipeline corridor. Approximately six weeks of construction would be required to construct and install the proposed pipelines.

Additional, related aboveground appurtenances, such as a pig launcher, would be installed within the 149H/150H well pad and 147H Tank Battery Site.

Within the proposed pipeline corridor, all vegetation would be cleared, the top 6 inches of topsoil would be salvaged and stockpiled, and the pipeline trenches would be excavated. Vegetation removed during construction, including trees that measure less than 3 inches in diameter (at ground level) and slash/brush, would be chipped or mulched and incorporated into the topsoil as additional organic matter. Trees 3 inches in diameter or greater (at ground level) would be cut to ground level and delimbed. Tree trunks (left whole) and cut limbs would be stacked along the 149H/150H access road. The subsurface portion of the trees (tree stumps) would be placed in adjacent areas needing soil stabilization, or hauled to an approved disposal facility.

During pipeline construction, three TUAs (one previously permitted TUA associated with the 149H/150H access road and two new TUAs) would be utilized along the proposed pipeline corridor. During pipeline construction, vegetation would be brush-hogged within the TUAs; however, no topsoil-stripping or contouring would take place within the TUAs.

Trenching activities would be conducted using a trencher or backhoe. Where a pipeline trench would be required, it would be 4 to 5 feet in depth. Under watercourses, the trenches would be deep enough to allow 6 feet of soil cover between the pipes and the washes. The trenches would be 16 inches in width if a trencher is used or 24 inches in width if a backhoe is used. Soft plugs would be placed within the trenches every quarter mile. When stringing pipe, one joint of pipe would be set back every quarter mile.

After a pipe has been welded and coated, a side-boom tractor would be used to place the pipe into one o the trenches. Prior to construction commencement, WPX would notify the BLM-FFO of additional types of construction equipment to be used.

After trenching and pipe placement in the trenches, the soils excavated from the trenches would be returned and compacted to prevent subsidence. The trenches would be compacted after approximately two feet of fill is placed within the trenches and after the ground surface has been leveled.

WPX would use boring construction methods to bore beneath U.S. Highway 550 and a rugged topographic area south of U.S. Highway 550 (between approximate stationings 10+55.19 to 13+20.25) using a Vermeer 36-by-50-foot boring machine. The bore entry hole would be located on the southern side of the highway, and the bore start hole (within the trench line) would be dug using an excavator. Following the excavation of the bore start hole, the boring construction contractor would set the Vermeer bore machine and begin the bore. The boring process would be conducted using fresh water and bentonite. The bore exit hole would be located on the northern side of the highway, and the bore end hole (within the trench line) would be dug using an excavator.

Prior to the pipelines being placed in service, the pipes would be pressure tested.

Within 90 days of installation, aboveground structures not subject to safety requirements would be painted Carlsbad Brown to blend with the surrounding landscape and reduce visual resource impacts.

Pipeline markers would be installed along the proposed pipeline corridor within the line of sight, without voiding safety measures.

Sediment- and/or erosion-control features would be installed, as necessary. Additional resource-protection design features and mitigation associated with construction are listed above, in "Design Features and Best Management Practices".

### *Interim Reclamation*

Following construction, interim reclamation would occur within all new disturbance areas associated with the proposed project. The BLM-FFO would be notified at least 48 hours prior to surface reclamation activities.

During this phase, a bulldozer and a tractor with seeding capabilities would be used for reclamation purposes. Approximately four personnel would be required to conduct interim reclamation.

In areas that would be reclaimed along the proposed pipeline corridor, slopes would be re-contoured to pre-construction topographical contours, if possible. Additionally, stockpiled topsoil would be redistributed and the surface would be ripped and seeded.

In areas that would be reclaimed within the TUAs, reseeding would take place. The TUAs would not be recontoured, as WPX does not anticipate any contouring taking place during construction.

Sediment- and erosion-control features (including water diversions and silt traps) would be installed, as necessary. During the November 2013 pre-disturbance onsite meeting, it was determined that the Sagebrush/Grass Community best represents the proposed project area. Details of the interim reclamation process (including species included in the seed mixture) are provided in the Surface Reclamation Plan (Appendix E).

The BLM-FFO would monitor reclaimed surfaces to document successful interim reclamation; monitoring and reporting are discussed in the Surface Reclamation Plan (Appendix E).

### *Operation*

During the operation phase of the proposed project, WPX personnel would rarely perform routine or emergency maintenance on the proposed pipelines and associated facilities. Although the frequency of visits to WPX's existing 147H tank battery site would depend on the amount of liquids and water produced by the 149H/150H wells, it is anticipated that WPX personnel would travel to the 147H Tank Battery Site at least one time per week to remove the liquids for transport to a refinery.

### *Final Reclamation and Abandonment*

Once the pipelines are no longer necessary and would not be expected to be utilized in the foreseeable future, they would be abandoned. Abandonment of the pipeline corridor would be carried out under current BLM regulations. Aboveground facilities would also be removed.

Final reclamation would occur within any portion of the pipeline corridor (such as locations of aboveground structures) that would be disturbed to bare soil during the abandonment phase of the proposed project, if these areas meet the acreage requirements for reclamation. These acreage requirements are summarized below:

- If final abandonment activities would disturb less than or equal to 0.1 acre to bare soil, the area(s) would be expected to revegetate naturally (no reclamation or monitoring activities will be required).
- If final abandonment activities would disturb more than 0.1 acre to bare soil, final abandonment reclamation activities would be the same as described for interim reclamation (discussed in the Surface Reclamation Plan [Appendix E]).

## *2.1.3. Proposed Surface Disturbance*

Surface disturbance associated with the proposed project would encompass approximately 6.2 acres, total. Of this, approximately 4.5 acres would be considered new surface disturbance.

The pipeline corridor would be approximately 4,167 feet long. From approximate stationing 10+55.19 to 13+20.25, WPX would use boring construction methods to bore beneath U.S. Highway 550 and a rugged

topographic area south of U.S. Highway 550. Within this section of the proposed pipeline corridor, there would be no new surface disturbance associated with the proposed project. The remaining 3,902 feet of the proposed pipeline corridor would parallel or overlap one of the existing or previously permitted disturbance areas described in Table 3, below. All new surface disturbance associated with pipeline construction would be reclaimed during interim reclamation.

During pipeline construction, there would be three TUAs along the proposed pipeline corridor: one previously permitted TUA associated with the Chaco 149H/150H access road and two new TUAs. TUA No. 1 would be located at the bore exit hole, and TUA No. 2 would be located immediately east of the bore entry hole. During interim reclamation, WPX would reseed the TUAs.

Surface disturbance associated with the proposed project is described in Table 3, below. Depictions of the surface-disturbing activity locations are provided in Appendices A (Maps) and C (Plats).

Table 3 Proposed Project Surface Impacts

| Surface Disturbance Description (Approximate Stationing) | Existing/Previously Permitted Surface Disturbance | New Surface Disturbance* |
|---|---|---|
| Pipelines | | |
| 0+00 to 1+95.08 (overlap WPX 147H Tank Battery Site) | 195' long x 40' wide (0.2 acre; existing disturbance) | - |
| 1+95.08 to 10+55.19 (parallel 147H Tank Battery Site Access Road) | 860' long x 15' wide (0.3 acre; existing disturbance) | 860' long x 25' wide (0.5 acre) |
| 10+55.19 to 13+20.25 (pipeline bore beneath U.S. Highway 550) | - | - |
| 13+20.25 to 30+85.35 (parallel Logos pipeline) | 1765' long x 15' wide (0.6 acre: existing disturbance) | 1765' long x 25' wide (1.0 acre) |
| 30+85.35 to 38+89.62 (parallel WPX 149H/150H access road) | 804' long x 15' wide (0.3 acre: previously permitted disturbance) | 804' long x 25' wide (0.5 acre) |
| 38+89.62 to 41+67.20 (overlap WPX 149H/150H well pad) | 278' long x 40' wide (0.3 acre; previously permitted disturbance) | - |
| Total Pipeline Surface Disturbance (acres) | 1.7 acres | 2.0 acres |
| TUAs | | |
| TUA No. 1 (Bore Exit Hole) | - | 50' long x 60' wide (0.1 acre) 550' long x 40' wide (0.5 acre) |
| TUA No.2 (Adjacent to Bore Entry Hole) | - | non-rectangular shape (1.9 acres) |
| Total TUA Surface Disturbance (acres) | - | 2.5 acres |
| Total Project Surface Disturbance (acres) | 1.7 acres | 4.5 acres |
| *Acreage to be reclaimed during reclamation. | | |

## 2.2. No Action

Under the No Action Alternative, the ROW Grants associated with the proposed 149H/150H pipelines and TUAs would not be approved. The proposed pipelines and associated facilities would not be constructed. Current land and resource uses would continue to occur in the proposed project area.

## 2.3. Alternatives Considered but Eliminated from Detailed Study

A reasonable alternative to the proposed action achieves the purpose of and satisfies the need for the proposed action. The proposed pipelines follow the most economic and direct route based on the location of WPX's 149H/150H well pad, WPX's 147H Tank Battery Site, existing disturbance, surface resources, and terrain.

As stated in Section 1.6.2 (Issues- Issues Considered but not Analyzed), WPX originally proposed locating the proposed pipelines (from approximate stationing 34+73.96 to 38+89.62) on the southeastern side of the 149H/150H access road; however, an ephemeral, USGS watercourse was present at this location. Therefore, WPX re-routed the proposed pipelines to the northwestern side of 149H/150H access road to avoid this watercourse.

No reasonable alternatives to the proposed project were identified that would result in less surface disturbance than the proposed project.

# 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Under the No Action alternative, current land and resource issues within the proposed project area would continue; there would be no new impacts from oil and gas development. The No Action alternative will serve as the baseline for comparing the environmental impacts of the analyzed alternatives, and will not be further evaluated in this EA (BLM 2008b).

## 3.1. Air Resources

### *3.1.1. Affected Environment*

The proposed project area is located in San Juan County, New Mexico. Additional general information on air quality in the area is contained in the PRMP/FEIS (BLM 2003a, 3-48-3-53). New information about greenhouse gases (GHGs) and their effects on national and global climate conditions has emerged since this document was prepared. Ongoing scientific research has identified the potential impacts of GHG emissions such as carbon dioxide, methane, nitrous oxide, water vapor, and several trace gases on global climate. Through complex interactions on a global scale, GHG emissions may cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia (along with corresponding variations in climatic conditions), industrialization and burning of fossil carbon sources have caused GHG concentrations to increase measurably, and may contribute to overall climatic changes, typically referred to as "global warming."

Much of the information referenced in this section is incorporated from the Air Resources Technical Report for BLM Oil and Gas Development in New Mexico, Kansas, Oklahoma, and Texas (herein referred to as the Air Resources Technical Report; BLM 2013a). This document summarizes the technical information related to air resources and climate change associated with oil and gas development and the methodology and assumptions used for analysis.

The EPA has the primary responsibility for regulating air quality, including the regulation of six nationally regulated ambient air pollutants (criteria pollutants). These criteria pollutants include carbon monoxide (CO), nitrogen dioxide ($NO_2$), ozone ($O_3$), particulate matter ($PM_{10}$ & $PM_{2.5}$), sulfur dioxide ($SO_2$) and lead (Pb). The EPA has established NAAQS for criteria air pollutants. The NAAQS are protective of human health and the environment. The EPA has approved New Mexico's State Implementation Plan, and the state enforces state and federal air quality regulations on all public and private lands within the state, with the exception of tribal lands and Bernalillo County.

Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology, and terrain. Air quality also includes applications of noise, smoke management, and visibility. Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. The EPA has proposed or completed actions recently to implement CAA requirements for GHG emissions. Climate has the potential to influence renewable and non-renewable resource management.

#### Air Quality

#### *Criteria Air Pollutants*

The Air Resources Technical Report describes the types of data used in the description of the existing conditions of criteria pollutants, describes how the criteria pollutants are related to the activities involved in oil and gas development, and provides a table of current national and state standards (BLM 2013a). The EPA Green Book web page reports that all counties in the BLM-FFO analysis area, including San Juan, McKinley, Rio Arriba, and Sandoval Counties in New Mexico and La Plata County in Colorado, are in attainment of all NAAQS as defined by the CAA (EPA 2012). The area also does not violate any New Mexico Ambient Air Quality Standards (NMAAQS). The current criteria pollutant "design concentrations"

in the analysis area are described below. Design concentrations are the concentrations of air pollution at a specific monitoring site that can be compared to the NAAQS. Table 4Tablo 4 shows monitored design values for $O_3$ in recent years for each of the three San Juan County $O_3$-monitoring stations.

Table 4. Reported Ozone Values or San Juan County Ozone om' tormg Stations

| State Air Monitoring Station | 8-hour Ozone Design Value (ppm) | | | | NAAQS |
|---|---|---|---|---|---|
| | 2007-2009 | 2008-2010 | 2009-2011 | 2010-2012 | 2008 |
| Substation | 0.067 | 0.063 | 0.063 | 0.067 | 0.075 |
| Bloomfield | 0.061 | 0.060 | 0.061 | 0.067 | 0.075 |
| Navajo Lake | 0.069 | 0.066 | 0.068 | 0.071 | 0.075 |

Source: NMED 2012
* parts per million

Table STable 6 S!Jmmarizes monitored design values for other criteria pollutants in San Juan County.

Table 5. Crtterta Pollutant Des&gn VIlue Concentrabons monitored'n San Juan Countv

| Pollutant | Design Value | Averaging Time | NAAQS | NMAAQS |
|---|---|---|---|---|
| N02 | 13 ppb | Annual | 53 ppb | 50 ppb |
| N02 | 39 ppb | 1-hour | 100 ppb[111] | 0.10 ppm (24-hour) |
| PM10 | Data incomplete | 24-hour | 150 u.glmjıJI | 150 JLg/mj ıj [1] |
| PM2.s | 4.5!J.gLm\J) | Annual | 12 u.g/mJ [1] | 60 JLg/mJ ''-J' |
| PM2.s | 14u.g/m[1 1] | 24-hour | 35 J..lg/mj ı.ıı | -- |
| so2 | O.OOlppm | Annual | None | 0.02 ppm |
| so2 | 20 ppb[1b)] | 1-hour | 75 ppbp) | None |
| so2 | 0.008 ppm | 24-hour | None | 0.10 ppm |

Source: EPA 20J2
<ll98[1]h percentile, averaged over 3 years
m Not to be exceeded more than once per year on average over 3 years
[131] The NMAAQS is a standard for total suspended particulate matter
[141] Annual mean, averaged over 3 years
[151] 99'h percentile of 1-hour daily maxi mum concentrations, averaged over 3 years
(S) ppb: pans per billion

In 2005, the EPA estimated that there was less than 0.01 ton per square mile of Pb emitted in the analysis area, which is less than 2 tons total (BLM 2013a). No monitoring is conducted for Pb or CO in northwestern New Mexico; however, concentrations of these pollutants are expected to be low in rural areas, and are therefore not monitored.

## *Hazardous Air Pollutants*

The Air Resources Technical Report discusses the relevance of hazardous air pollutants (HAPs) to oil and gas development and the particular HAPs that are regulated in relation to these activities (BLM 2013a). The EPA has identified 187 toxic air pollutants as HAPs. In March 2011, the EPA published the fourth in a series of National Scale Air Taxies Assessments (NATA) that quantifies HAP emissions for 2005 by U.S. county. The purpose of the NATA is to identify areas where HAP emissions result in high health risk. Computer models are used to develop estimates of risk of cancer or other health impacts. NATA presents risk hazard indexes for cancer, neurological problems, and respiratory problems for each county and census tract. Because techniques have changed over the years, each NATA is not comparable to those previously issued. The EPA also cautions that because data availability varies from state to state, the results are not necessarily comparable from one geographic area to another. The 2005 NATA analysis estimated tract level total cancer risk for the analysis area as 25 to 50 per one million; the estimated tract level total respiratory hazard index was zero to 1. The EPA estimates the average national cancer risk for 2005 was 50 per one million, meaning 1 person out of every 20,000 had an increased likelihood of contracting cancer from breathing air toxins from outdoor sources if exposed to 2005 emission levels over their lifetime. A respiratory hazard index below 1 indicates that exposures in the area do not exceed reference levels that would have adverse effects for human health.

## Climate

The analysis area is located in a semiarid climate regime typified by dry, windy conditions and limited rainfall. Summer maximum temperatures are generally in the range of 80 or 90 degrees Fahrenheit (°F), and winter minimum temperatures are generally in the teens to 20s. Temperatures occasionally reach above 100°F in June and July and have dipped below zero in December and January. Precipitation is divided between summer thunderstorms associated with the southwest monsoon and winter snowfall as Pacific weather systems drop south into New Mexico. Table 6 shows climate normals for the 30-year period from 1981 to 2010 for the Farmington, New Mexico, area.

Table 6 Climate Normals for Farmington Area, 1981-2010

| Month | Average Temperature (F) | Average Maximum Temperature (F) | Average Minimum Temperature (F) | Average Precipitation (inches) |
|---|---|---|---|---|
| January | 30.5 | 40.8 | 20.3 | 0.53 |
| February | 35.8 | 46.8 | 24.8 | 0.59 |
| March | 43.2 | 56.1 | 30.3 | 0.78 |
| April | 50.4 | 64.7 | 36.2 | 0.65 |
| May | 60.4 | 74.8 | 46.1 | 0.54 |
| June | 69.8 | 85.1 | 54.5 | 0.21 |
| July | 75.4 | 89.6 | 61.2 | 0.90 |
| August | 73.2 | 86.5 | 59.8 | 1.26 |
| September | 65.4 | 79.1 | 51.7 | 1.04 |
| October | 53.3 | 66.4 | 40.1 | 0.91 |
| November | 40.5 | 52.2 | 28.8 | 0.68 |
| December | 31.0 | 41.2 | 20.7 | 0.50 |
| Source: BLM 2013a; data collected at New Mexico State Agricultural Science Center - Farmington | | | | |

### *3.1.2. Impacts from the Proposed Action*

## Direct and Indirect Impacts

Air quality would temporary be directly impacted by pollution from exhaust emissions and dust. Air pollution from motorized equipment and dust dissemination would discontinue at the completion of the proposed project. Other factors that currently affect air quality in the area include dust from livestock herding activities, dust from recreational use, dust from use of roads by vehicular traffic, and emissions from oil and gas production activities. Impacts to air quality attributable to this project would be temporary and minor.

## Cumulative Impacts

The BLM-FFO manages federal hydrocarbon resources in San Juan, Sandoval, Rio Arriba, and McKinley Counties. There are approximately 23,522 wells in the San Juan Basin. About 16,435 of the wells in these counties are federal wells. Analysis of cumulative impacts for reasonable development scenarios and reasonably foreseeable development scenarios for oil and gas wells on public lands on the BLM-FFO was presented in the AMP. This included modeling of impacts on air quality (BLM 2003b). A more detailed discussion of cumulative effects can be found in the Air Resources Technical Report (BLM 2013a).

The primary sources/activities that contribute to levels of air pollutant and GHG emissions in the Four Corners area are electricity-generation stations, fossil fuel industries, and vehicle travel. The Air Resources Technical Report includes a description of the varied sources of national and regional emissions that are incorporated here to represent the past, present, and reasonably foreseeable impacts to air resources (BLM 2013a). It includes a summary of emissions on the national and regional scale by industry source. Sources/activities that are considered to have notable contributions to air quality impacts and GHG emissions include electrical-generating units, fossil fuel production (nationally and regionally), and transportation.

The emissions calculator estimated that there could be very small direct and indirect increases in several criteria pollutants, HAPs, and GHGs as a result of implementing the proposed alternative. The very small increase in emissions that could result would not be expected to result in an exceedance of the NAAQS for any criteria pollutants in the analysis area.

The very small increase in GHG emissions that could result from implementing the proposed alternative would not produce climate change impacts that differ from the No Action Alternative. This is because climate change is a global process that is impacted by the sum total of GHGs in the Earth's atmosphere. The incremental contribution to global GHGs from the action alternatives cannot be translated into effects on climate change globally or in the area of this site-specific project. It is currently not feasible to predict with certainty the net impacts from the action alternatives on global or regional climate.

The Air Resources Technical Report discusses the relationship of past, present, and future predicted emissions to climate change and the limitations in predicting local and regional impacts related to emissions (BLM 2013a). It is currently not feasible to know with certainty the net impacts from particular emissions associated with activities on public lands.

## 3.2. Soil Resources

### *3.2.1. Affected Environment*

Soils in the San Juan Basin were formed primarily from two kinds of parent material: alluvial sediment and sedimentary rock. The alluvial sediment is material that was deposited in river valleys and on mesas, plateaus, and ancient river terraces. This material has been mixed and sorted in transport and has a wide range of mineralogy and particle size. The parent material of sedimentary rock consists mainly of sandstone and shale bedrock. These shale and resistant sandstone beds form prominent structural benches, buttes, and mesas bounded by cliffs.

The Natural Resources Conservation Service (NRCS) has mapped the soils in the proposed project area. Complete soil information is available in the NRCS's *Soil Survey of San Juan County, New Mexico: Eastern Part* (NRCS 2009).

Within the proposed project area, two soil map units are present. These soils are described in the sections below.

#### Blancot-Notal Association

The Blancot-Notal association (gentle slopes) is composed of 55 percent Blancot and similar soils and 25 percent Notal and similar soils. This soil type has a moderate to high potential for water erosion and low to moderate potential for wind erosion. This soil unit is typically found along fan remnant and stream terrace landforms (0- to 5-percent slopes) and within loamy and salt flat ecological sites. The potential plant community for this soil complex is usually comprised of James' galleta *(Pieuraphis jamesi1),* Indian ricegrass *(Achnatherum hymenoides),* western wheatgrass *(Pascopyrum smithil),* needleandthread *(Hesperostipa comata),* blue grama *(Bouteloua gracilis)* , New Mexico feathergrass *(Hesperostipa neomexicana),* squirreltail *(Eiymus elymoides),* inland saltgrass *(Distich/is spicata),* dropseed *(Sporobolus* spp.), threeawn *(Aristida* spp.), alkali sacaton *(Sporobolus airoides),* black greasewood *(Sarcobatus vermiculatus),* fourwing saltbush *(Atriplex canescens),* shadscale saltbush *(Atriplex confertifolia),* broom snakeweed *(Gutierrezia sarothrae)* , winterfat *(Krascheninnikovia lanata),* sagebrush *(Artemisia* spp.), rabbitbrush *(Chrysothamnus* spp.), and walkingstick cactus *(Cylindropuntia spinosior;* NRCS 2009).

#### Badland

The parent material of the Badland map unit primarily consists of shale. This soil is considered a somewhat excessively drained soil, with the depth to restrictive layer (paralithic bedrock) being zero to two inches. This soil type has a low to moderate potential for water erosion and moderate potential for wind erosion. Badland soils are typically found along the side slopes of break landforms (5- to 80-percent slopes), and are commonly used for wildlife habitat (NRCS 2009).

### 3.2.2. *Impacts from the Proposed Action*

#### Direct and Indirect Impacts

Within the proposed project area, 4.5 acres of vegetation would be cleared, but topsoil would be stripped and leveling would only occur within 2.0 acres of the proposed project area associated with the pipeline corridor. All new surface disturbance associated with the proposed project (i.e., the proposed pipeline corridor, TUA No. 1, and TUA No. 2) would be reclaimed during interim reclamation.

Soils in the proposed project area are classified as having a low to high water erosion potential and a low to moderate wind erosion potential (NRCS 2009). The clearing of vegetation within the proposed project area would result in the exposure of soils to water, wind, and direct human disturbances; erosion in these areas would potentially increase. Construction activities within the proposed project area would result in the mixing, displacement, and compaction of soils. The degree of erosion would be dependent upon precipitation and wind. Following construction, the compaction of soils, reclamation of the proposed project area, and implementation of erosion-control measures would limit soil impacts due to erosion. Soil erosion mitigation measures are provided in Section 2.1.2 (Description of Proposed Project) and the Surface Reclamation Plan (Appendix E).

#### Cumulative Impacts

The spatial analysis area for cumulative soil impacts is the proposed project area, immediately surrounding lands, and points immediately downstream.

As described in Section 2.1 (Proposed Action), the entire proposed pipeline corridor parallels or overlaps existing disturbance, including the following:

- WPX's permitted 149H/150H well pad and access road (not constructed as of the date of the November 2013, pre-disturbance onsite meeting)
- Logos's newly constructed pipeline corridor (not reclaimed as of the date of the November 2013, pre-disturbance onsite meeting)
- U.S. Highway 550
- WPX's existing 147H Tank Battery Site and associated access road
- Approximately 1,370 feet of Encana Oil & Gas (USA) Inc.'s (Encana's) proposed Chaco Trunk No. 2 pipeline would parallel WPX's proposed pipeline corridor. Encana's proposed pipeline would also be located approximately 200 to 300 feet east of WPX's proposed project area starting at stationing 10+55.19, and Encana's proposed pipeline would overlap the southern terminus of WPX's proposed pipeline corridor within WPX's existing 147H Tank Battery Site. Encana's proposed pipeline route is depicted on Figure A.3 in Appendix A.

The proposed project and existing and permitted disturbance within/adjacent to the proposed project area could contribute to soil erosion within and immediately downstream of the spatial analysis area.

## 3.3. Upland Vegetation

### 3.3.1. *Affected Environment*

The proposed project area is located within the Arizona/New Mexico Plateau ecological region. This ecological region occurs primarily in Arizona, Colorado, and New Mexico; a small portion is located within Nevada. This ecological region encompasses approximately 45,870,500 acres (185,632 square kilometers), and the elevation ranges from 2,165 to 11,949 feet AMSL. The ecological region's landscapes include low mountains, hills, mesas, foothills, irregular plains, alkaline basins, some sand dunes, and wetlands. This ecological region is a large transitional region between the semiarid

grasslands to the east; the drier shrublands and woodlands to the north; and the lower, hotter, less-vegetated areas to the west and south. Vegetation communities include shrublands with big sagebrush *(Artemisia tridentata),* rabbitbrush, winterfat, shadscale saltbush, and greasewood; and grasslands of blue grama, western wheatgrass, green needlegrass *(Nassella viridula),* and needleandthread grass. Higher elevations may support pinon pine *(Pinus edulis)* and juniper *(Juniperus* spp.) woodlands. This ecological region includes the urban areas of Santa Fe and Albuquerque, New Mexico. Important land uses within this ecological region include irrigated farming, recreation, rangeland, wildlife habitat, and some natural gas production (Griffith, et al. 2006).

The general region surrounding the proposed project area is characterized by minimally vegetated badlands, saltbush scrub, and sagebrush shrubland valleys. The northeastern portion of the proposed project area is located within badlands that are dominated by shadscale saltbush, big sagebrush, and broom snakeweed. The remainder of the proposed project area is characterized by a mosaic of saltbush scrub, sagebrush shrublands, and previously disturbed areas. The saltbush scrub vegetation community is dominated by mound saltbush *(Atriplex obovata),* blue grama, and James' galleta, and the sagebrush shrubland vegetation community is dominated by big sagebrush, blue grama, and rabbitbrush. The entire proposed pipeline corridor would parallel or overlap existing disturbance areas, as described in Chapter 2 (Proposed Action and Alternative[s]). The vegetation communities found within the proposed project area are described in detail in the BSR (Appendix B).

Within the proposed project area there are approximately 20 to 25 trees (80 percent mature, 10 percent juvenile, 10 percent standing dead).

## *3.3.2. Impacts from the Proposed Action*

### Direct and Indirect Impacts

During the construction phase of the proposed project, all vegetation within the proposed project area, including approximately 20 to 25 trees, would be cleared. The proposed project would result in the removal of approximately 4.5 acres of badland, saltbush scrub, and sagebrush shrubland vegetation communities. All new surface disturbance associated with the proposed project (i.e., the proposed pipeline corridor, TUA No. 1, and TUA No. 2) would be reclaimed during interim reclamation.

During final reclamation, WPX would fully reclaim any portions of the proposed project that would be disturbed to bare soil as a result of final abandonment earthwork activities (if such areas total greater than 0.1 acre).

During interim and final reclamation, the BLM Sagebrush-Grass Community Seed Mixture would be utilized; the species included in this mixture are listed in the Surface Reclamation Plan (Appendix E). Re-established vegetation would consist of native grass, forb, and shrub species included in the seed mixture, as well as native species that are not deliberately planted. It is also possible that invasive, non-native species could become established within the proposed project area, as such species could be transported by project equipment and tend to thrive in disturbed areas. Following the reclamation process, the resulting vegetation communities could differ from the native plant communities surrounding the proposed project area. Within reclaimed areas, it is not expected that the vegetation communities would return to native conditions within 20 years (BLM 2003a, 4-18).

The deposition of fugitive dust generated during vegetation-clearing activities and during wind events could reduce photosynthesis and productivity of the surrounding vegetation {Thompson, et al. 1984; Hirano, et al. 1995), increase water loss in plants near the proposed project area (Eveling and Bataille 1984), and result in injury to leaves of surrounding vegetation.

### Cumulative Impacts

The spatial analysis area is the proposed project area and immediately adjacent lands. Within the spatial analysis area, the following vegetative disturbances have occurred or are anticipated to occur in the reasonably foreseeable future:

- Approximately 195 feet of the proposed pipeline corridor overlaps WPX's existing 147H Tank Battery Site.
- Approximately 860 feet of the proposed pipeline corridor parallels an existing access road leading to WPX's 147H Tank Battery Site.
- Approximately 265 feet of the proposed pipeline corridor would bore beneath U.S. Highway 550.
- Approximately 1,765 feet of the proposed pipeline corridor parallels Logos's newly constructed pipeline corridor.
- Approximately 804 feet of the proposed pipeline corridor parallels WPX's permitted 149H/150H access road.
- Approximately 278 feet of the proposed pipeline corridor overlaps WPX's permitted 149H/150H well pad.
- Approximately 1,370 feet of Encana's proposed Chaco Trunk No.2 pipeline would parallel WPX's proposed pipeline corridor. Encana's proposed pipeline would also be located approximately 200 to 300 feet east of WPX's proposed project area starting at stationing 10+55.19, and Encana's proposed pipeline would overlap the southern terminus of WPX's proposed pipeline corridor within WPX's existing 147H Tank Battery Site. Encana's proposed pipeline route is depicted on Figure A.3 in Appendix A.
- The proposed pipeline corridor (approximate stationing 5+39.11) is located immediately west of WPX's permitted Chaco 2308-09A Nos. 145H and 146H (145H/146H) well project. WPX's permitted 145H/146H well project is depicted on Figure A.3 in Appendix A.
- The southern terminus of the proposed pipeline corridor is located immediately south-southwest of Elm Ridge Exploration Company LLC's active Federal 9 No. 31 well pad.
- The southern terminus of the proposed pipeline corridor is located immediately west of WPX's existing 147H pipeline corridor.
- Active wildlife and livestock grazing occurs in the area. The proposed project area is within a BLM-FFO grazing allotment (Largo Community, Allotment No. 5083) that is permitted for grazing by 741 head of livestock (145 of cattle and 596 of sheep).

Indirectly, fugitive dust or deposition associated with existing roads, well pads, and utility corridors in the immediate area could impact the vegetation within the analysis area, and could continue to do so throughout the life of the proposed project. Aside from those discussed above, no additional impacts to vegetation are expected within the analysis area for the reasonably foreseeable future.

The proposed project would contribute to direct and indirect vegetation disturbance and fugitive dust and/or deposition within the spatial analysis area.

## 3.4. Noxious Weeds and Invasive Species

### *3.4.1. Affected Environment*

Management of invasive and non-native plant species is mandated under several pieces of legislation, including the Lacey Act, as amended (16 USC 3371-3378); the Federal Noxious Weed Act of 1974, as amended (7 USC 2801 et seq.); the New Mexico Noxious Weed Management Act of 1998; and EO 13112 regarding Invasive Species. Under EO 13112, Federal agencies are ordered not to authorize or carry out actions that would cause or promote the introduction of invasive species.

In the San Juan Basin, invasive plants are frequently found in areas that have been disturbed by surface activities. A mission of the BLM-FFO is to detect new invasive plant species populations, prevent the spread of these new populations, manage existing populations, and eradicate invasive populations. This is to be accomplished in a timely manner, using the safest environmental methods available. For all actions on BLM-FFO lands that involve surface disturbance or reclamation, reasonable steps are required to prevent the introduction or spread of invasive plants (BLM 2003a, 3-34).

The U.S. Department of Agriculture (USDA) has designated certain plants as federally listed noxious weeds (NRCS 2010). The New Mexico Department of Agriculture (NMDA) has designated certain plants as state-listed noxious weeds (NMDA 2010). A total of 212 invasive and poisonous weed species have been identified on BLM-FFO lands. The PRMP/FEIS lists the invasive, non-native plant species of concern in the BLM-FFO area (BLM 2003a, 3-34- 3-35).

During the October 2013, biological survey of the proposed project area, no USDA-listed noxious weeds (NRCS 2010), NMDA-listed noxious weeds (NMDA 2010), or BLM-FFO invasive or poisonous weed species (BLM 2003a, 3-34 – 3-35) were identified within the proposed project area.

During the biological survey of the proposed project area, Russian thistle was found scattered throughout the proposed project area. Although this species is not included on the USDA, NMDA, or BLM noxious weed lists, it is known to outcompete desirable, native vegetation (Whitson, et al. 1992).

### *3.4.2. Impacts from the Proposed Action*

#### Direct and Indirect Impacts

Noxious weeds and invasive species are generally tolerant of disturbed conditions, and disturbed soils at project sites could provide an opportunity for the introduction and establishment of noxious weeds and invasive species. Seeds or other propagules of noxious/invasive species could be transported to a project site from infested areas by heavy equipment or other vehicles that are used at the site. Noxious weeds and invasive species could also spread from established populations near a project site and colonize soils disturbed by project activities. In arid regions, such as the area in which the proposed project area is located, longer time periods are required for the re-establishment of plant communities; this could create an increased potential for the establishment and spread of noxious/invasive species. Noxious weeds and invasive species typically develop high population densities and tend to exclude most other plant species, thereby reducing species diversity and potentially resulting in long-term effects. The establishment of noxious/invasive species could greatly reduce the success of native plant community restoration efforts in project areas and create a source of future colonization and degradation of adjacent undisturbed areas.

The establishment of invasive species, particularly annual grasses, such as cheatgrass, which produce large amounts of easily ignitable fuel over large contiguous areas, could also alter fire regimes. This situation could result in an increase in the frequency and intensity of wildfires, and in some areas, such as in some desert-scrub communities, a fire regime could be created where none was present before. In plant communities that are not adapted to frequent or intensfires, native species, particularly shrubs and trees, could be adversely affected, and their populations could be greatly reduced, creating opportunities for greater increases in noxious/invasive species populations (Brooks and Pyke 2001). Increases in fire frequency or severity could thus result in a reduction of biodiversity and could promote the conversion of some habitats (such as forest, shrubland, or shrub-steppe) to other types, prolonging or preventing the development of mature native habitats (BLM and U.S. Department of Energy 2010).

As discussed in Section 2.1.2 (Description of Proposed Project- Prevention and Control of Weeds), BMPs would be implemented during the construction phase of the proposed project to prevent the introduction and/or spread of noxious weeds and invasive species.

#### Cumulative Impacts

The spatial analysis area is the proposed project area and immediately adjacent lands. Within the spatial analysis area, a large amount of ground-disturbing activities have or are anticipated to occur in the

reasonably foreseeable future; these disturbances are described in Section 3.3 (Upland Vegetation). These ground disturbances could encourage the establishment of noxious weeds. In addition, ongoing activities, such as vehicles driving and livestock grazing, have contributed to the potential for weeds to be introduced to the spatial analysis area from other locations. The disturbances and activities have contributed to the establishment of Russian thistle, and could contribute to the establishment and spread of other noxious weeds or invasive species. The proposed project would contribute to surface disturbance and ongoing activity, and thus contribute to the potential for the establishment and spread of noxious weeds or invasive plant species within the spatial analysis area.

# 3.5. Wildlife

## *3.5.1. Affected Environment*

### Migratory Birds

EO 13186, dated January 17, 2001, calls for increased efforts to more fully implement the Migratory Bird Treaty Act of 1918. In keeping with this mandate, the BLM-FFO has issued an interim policy to minimize unintentional take, as defined by the EO, and to better optimize migratory bird efforts related to BLM-FFO activities. In keeping with this policy, a list of priority birds of conservation concern which occur ecological regions similar to the proposed project area was compiled through a review of existing bird conservation plans, including the following:

- USFWS Birds of Conservation Concern
- New Mexico Partners in Flight New Mexico Bird Conservation Plan
- Comprehensive Wildlife Conservation Strategy for New Mexico
- Gray Vireo Recovery Plan
- The North American Waterbird Conservation Plan
- Recovery plans and conservation plans/strategies prepared for federally listed candidate species

The selected species have a known distribution in the BLM-FFO area and may be affected by various types of perturbations. The BSR (Appendix B) lists those priority species that have the potential to occur within the proposed project area.

During the biological survey of the proposed project area, no bird species were observed or heard.

### General Wildlife

The vegetation communities found within the proposed project area provide habitat for a variety of vertebrate and invertebrate species. The objectives of the BLM wildlife management program are to "ensure optimum populations and a natural abundance and diversity of fish and wildlife values by restoring, maintaining, and enhancing habitat conditions for consumptive and non-consumptive uses" (BLM 2003a, 2-24).

Prior to the October 2013, biological survey of the proposed project area, no prairie dog colonies had been recorded within or adjacent to the proposed project area (BLM 2012b); the closest recorded colony is approximately 9 miles north-northwest of the proposed project area. No prairie dogs or their signs were observed during the biological survey of the proposed project area.

During the biological survey of the proposed project area, the following terrestrial wildlife species and/or their sign were observed:

- Desert cottontail (*Sylvilagus audubonil)*
- Mule deer (*Odocoileus hemionus)* scat
- Rodent burrows
- Coyote *(Canis Iatrans)* scat and burrow

## 3.5.2. Impacts from the Proposed Action

### Direct and Indirect Impacts

During the construction phase of the proposed project, all vegetation within the proposed project area, including approximately 20 to 25 trees, would be cleared. The proposed project would result in the removal of approximately 4.5 acres of badland, saltbush scrub, and sagebrush shrubland vegetation communities. All new surface disturbance associated with the proposed project (i.e., the proposed pipeline corridor, TUA No. 1, and TUA No. 2) would be reclaimed during interim reclamation. The proposed project area would be converted to a reseed community following interim reclamation. The impacts to the vegetation communities are described in detail in Section 3.3 (Upland Vegetation).

There is available, similar habitat in the surrounding area that wildlife could utilize. However, the clearing of vegetation would remove potential habitat. The transformation of the proposed project area to a reseed community could remove potential habitat for numerous wildlife species, including the priority bird species listed in the BSR (Appendix 8).

The proposed pipeline corridor would parallel existing disturbance; therefore, habitat fragmentation would not increase as a result of the proposed project.

If interim reclamation is successful, badland, saltbush scrub, and sagebrush shrubland communities would become re-established within the proposed project area. However, as discussed in Section 3.3 (Upland Vegetation), the re-establishment of a mature, native plant community could require decades, and it is possible that the plant community could never fully recover from disturbance (BLM 2003a, 4-18).

Audial and visual disturbances associated with the proposed project could temporarily wildlife (including migratory birds) from utilizing the proposed project area and immediately adjacent lands.

#### *Migratory Birds*

Due to the mobility of adult birds, they would be unlikely to be directly harmed by the proposed project. As discussed in Section 2.1.2 (Description of Proposed Project- Protection of Flora and Fauna, Including SSS and Livestock), if the vegetation-clearing phase of construction is scheduled to occur during migratory bird breeding season, a pre-construction migratory bird nest survey would be conducted within the proposed project area. Therefore, it is unlikely that nests, eggs, or young birds within the proposed project area would be directly harmed. If proposed project activities would occur during migratory bird breeding season, birds nesting outside of but near the proposed project area could abandon existing nests as a result of visual and audial disturbances.

#### *General Wildlife*

It is possible that burrowing animals could be killed or injured during the construction phase of the proposed project, as equipment digs into the earth and rolls over the surface of the ground.

During the construction phase of the proposed project, terrestrial wildlife could fall into the open pipeline trenches and be injured, stressed, or killed. The presence of an open trench could also disrupt normal wildlife movements to and from water and/or food sources. Wildlife could have to skirt the open-trench portions of the proposed pipeline corridor to access water and/or food; this disruption could stress wildlife and result in the loss of valuable energy resources. As discussed in Section 2.1.2 (Description of Proposed Project- Protection of Flora and Fauna, Including SSS and Livestock), design features and BMPs would be implemented during the construction phase of the proposed project to assist in the prevention of injury, stress, or death of wildlife.

### Cumulative Impacts

The spatial analysis area includes the proposed project area and an approximately 2-mile radius around the proposed project area. Within a 2-mile radius of the proposed project area, there is existing and

proposed disturbance, and the region has been fragmented. Existing and reasonably foreseeable future disturbance within a 2-mile radius of the proposed project includes the following:

- 17 active oil or gas well pads
- 10 plugged oil or gas well pads
- 5 proposed oil or gas well pads
- Approximately 28 miles of BLM Roads
- Approximately 3 miles of County Road 7890, 7900, and 7997
- Approximately 4 miles of U.S. Highway 550
- Several existing and proposed utility ROWs
- Livestock and wildlife grazing
- Residential development

Habitat disturbance and fragmentation in the spatial analysis area is primarily the result of oil and gas development (including well pads, access roads, and pipeline corridors). The direct and indirect habitat disturbance, fragmentation, and human activities associated with these disturbances could deter wildlife from utilizing portions of the spatial analysis area. The proposed action would contribute to direct and indirect habitat disturbance in the spatial analysis area. As stated above, the entire proposed project area would parallel existing disturbance; therefore, habitat fragmentation would not increase as a result of the proposed project.

## 3.6. Special Status Species

### *3.6.1. Affected Environment*

The BLM manages certain species which are not federally listed as threatened or endangered in order to prevent or reduce the need to list them as threatened or endangered in the future. BLM SSS include BLM Sensitive Species and BLM-FFO Special Management Species (SMS).

New Mexico BLM State Directors have developed a list of BLM Sensitive Species for the State of New Mexico (BLM 2011a, BLM 2011b, BLM 2011c, BLM 2012a). In accordance with BLM Manual 6840, the BLM-FFO has prepared a list of BLM-FFO SMS to focus species management efforts toward maintaining habitats under a multiple-use mandate (BLM 2008a, BLM 2008c). BLM-FFO SMS include some BLM Sensitive Species and other species for which the BLM-FFO has determined special management is appropriate (BLM 2008c). The authority for this policy and guidance is established by the ESA; Title II of the Sikes Act, as amended (16 USC 670a-670o, 74 Stat. 1052); FLPMA; and Department of Interior Manual 235.1.1A.

BLM-FFO Sensitive Species and SMS are discussed in detail in the BSR (Appendix B). It was determined that the following species have the potential to occur or are known to occur within the proposed project area:

- Aztec gilia: The proposed project area is within the BLM-FFO-designated potential habitat "zone" for this species (BLM 2013b; Figures A.2 and A.3 (Appendix A]). Potential habitat is available within the proposed project area. No individuals were identified during the biological survey.

- Brack's fishhook cactus: The proposed project area is within the BLM-FFO-designated potential habitat "zone" for this species (BLM 2013b; Figures A.2 and A.3 [Appendix A]}. Potential habitat is available within the proposed project area. During the biological survey, 24 individuals were recorded within the proposed project area.

- Bendire's thrasher: Potential foraging and nesting habitat is available within the southern portion of the proposed project area. No sign of this species was recorded during the biological survey.

- **Ferruginous hawk:** Potential foraging habitat is available within the proposed project area; however, no suitable nesting habitat is present within or adjacent to the proposed project area. No sign of this species was recorded during the biological survey.

- **Golden eagle:** Potential foraging habitat is available within the proposed project area; however, no suitable nesting habitat is present within or adjacent to the proposed project area. No sign of this species was recorded during the biological survey.

- **Prairie falcon:** Potential foraging habitat is available within the proposed project area; however, no suitable nesting habitat is present within or adjacent to the proposed project area. No sign of this species was recorded during the biological survey.

## 3.6.2. *Impacts from the Proposed Action*

### Direct and Indirect Impacts

There is similar habitat available in the surrounding area that BLM SSS could utilize for foraging. However, the proposed project would result in the removal of approximately 4.5 acres of badland, saltbush scrub, and sagebrush shrubland vegetation communities, including approximately 20 to 25 trees. All new surface disturbance associated with the proposed project (i.e., the proposed pipeline corridor, TUA No. 1, and TUA No. 2) would be reclaimed during interim reclamation. The proposed project area would be converted to a reseed community following interim reclamation. The impacts to the vegetation communities are described in detail in Section 3.3 (Upland Vegetation). Habitat loss likely reduces the carrying capacity for wildlife, although the exact level of reduction cannot be quantified (BLM 2003a, 4-26 – 4-27). The proposed pipeline corridor would parallel existing disturbance; therefore, habitat fragmentation would not !increase as a result of the proposed project.

If interim reclamation is successful, badland, saltbush scrub, and sagebrush shrubland vegetation communities would become re-established within the proposed project area. However, as discussed in Section 3.3 (Upland Vegetation), the re-establishment of mature, native plant communities could require decades, and it is possible that plant communities could never fully recover from disturbance (BLM 2003a, 4-18).

### *Aztec Gilia*

No Aztec gilia were identified within the proposed project area; no direct impacts to this species are anticipated. However, the biological survey was conducted in late October, outside of the blooming period for this species. Based on the small size of Aztec gilia plants and the timing of the survey, it is possible that Aztec gilia individuals could have been overlooked during the survey and could be killed during the construction phase of the proposed project.

### *Brack's Fishhook Cactus*

As discussed in Section 2.1.2 (Description of Proposed Project- Protection of Flora and Fauna, Including SSS and Livestock), 24 Brack's fishhook cacti were recorded by NCI within the proposed project area. On September 27, 2013, under BLM-FFO guidance and following BLM-FFO protocol (BLM 2013c), these cacti were removed by NCI from the proposed project area; these individuals were transplanted off-site (in the vicinity of the proposed project area but away from proposed disturbance) on November 20, 2013. A Brack's Fishhook Cactus Transplant Report was submitted by NCI to the BLM-FFO on December 11, 2013, detailing the transplant methodology and transplant location.

Because the success of transplanting Brack's fishhook cactus individuals cannot be determined for several years, the direct impacts of the proposed project on these cacti are not yet known.

The biological survey was conducted in late October, outside of the blooming period for this SSS. Based on the small size of Brack's fishhook cacti and the timing of the survey, it is possible that additional individuals could have been overlooked during the survey and could be killed during the construction phase of the proposed project.

### *Bendire's Thrasher*

Due to the mobility of adult birds, it is unlikely that adult birds would be directly impacted by the proposed project.

As discussed in Section 2.1.2 (Description of Proposed Project- Protection of Flora and Fauna, Including SSS and Livestock), if construction activities would occur during the migratory bird breeding season, a pre-construction migratory bird nest survey would be conducted within the associated proposed project area. Therefore, it is unlikely that nests, eggs, or young birds would be directly harmed.

Audia! and visual disturbances associated with the proposed project could temporarily deter this species from utilizing the proposed project area and immediately adjacent lands.

### *Ferruginous Hawk, Golden Eagle, and Prairie Falcon*

No nesting habitat for any of these raptor species is available within or adjacent to the proposed project area. These three BLM SSS could potentially utilize the proposed project area for foraging. Due to the mobility of adult birds, it is unlikely that these raptors would be directly harmed by activities associated with the proposed project.

Audia! and visual disturbances associated with the proposed project could temporarily deter these species from utilizing the proposed project area and immediately adjacent lands.

### Cumulative Impacts

The spatial analysis area includes the proposed project area and an approximately 2-mile radius around the proposed project area. Within a 2-mile radius, there is existing and proposed disturbance, and the region has been fragmented. These disturbances are described in detail in Section 3.5 {Wildlife).

Habitat disturbance and fragmentation in the spatial analysis area is primarily the result of oil and gas development (including well pads, access roads, and pipeline corridors). The direct and indirect habitat disturbance, fragmentation, and human activities associated with this development could deter BLM wildlife SSS from utilizing portions of the spatial analysis area. The proposed action would contribute to direct and indirect habitat disturbance in the spatial analysis area. As stated in Section 3.5 (Wildlife), the proposed project would parallel existing disturbance; therefore, habitat fragmentation would not increase as a result of the proposed project.

## 3.7. Cultural Resources

### *3.7.1. Affected Environment*

The proposed project area is located within the archaeologically rich San Juan Basin of northwestern New Mexico. In general, the history of the San Juan Basin can be divided into five major periods: PaleoIndian (circa (ca.] 10,000 B.C. to 5,500 B.C.); Archaic (ca. 5,500 B.C. to A.D. 400); Basketmaker II-III and Pueblo I-IV (aka Anasazi; A.D. 1-1,540); and historic (A.D. 1,540 to present), which includes Native American as well as later Hispanic and Euro-American settlers. Detailed descriptions of these various periods are provided in the BLM-FFO PRMP/FEIS (BLM 2003a, 3-65- 3-84) and will not be reiterated here. Additional information can also be found in an associated documented, the Cultural Resources Technical Report (Science Applications International Corporation 2002).

Cultural sites vary considerably, and can include but are not limited to simple artifact scatters, domiciles of various types with a myriad of associated features, rock art and inscriptions, ceremonial/religious features, and roads and trails.

The entire Area of Potential Effect (APE) for the proposed action was archaeologically surveyed by LAC at a BLM Class III {100-percent) level. The archaeological report, LAC Report 2013-5jj#2 (2013; BLM 2014{1)048F), was prepared and submitted to the BLM in accordance with the *Procedures for Performing*

*Cultural Resources Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities* (BLM 2005).

The Class III inventory identified no cultural sites within the APE (LAC 2013). No TCPs are known to exist in the APE.

### *3.7.2. Impacts from the Proposed Action*

#### Direct and Indirect Impacts

There are no cultural sites within the APE. The proposed action would not be expected to physically threaten any TCPs, prevent access to sacred sites, prevent the possession of sacred objects, or interfere with or otherwise hinder the performance of traditional ceremonies/rituals. The proposed action would have no direct or indirect impacts on cultural sites.

#### Cumulative Impacts

There would be no negative cumulative impact on cultural resources, as no cultural sites are present. A positive cumulative effect is the additional scientific information yielded by the archaeological survey associated with the proposed action.

# 4. SUPPORTING INFORMATION

## 4.1. Tribes, Individuals, Organizations, or Agencies Consulted

The following tribes, individuals, organizations, and/or agencies were consulted during the development of this EA:

- Larry Higgins, WPX
- Heather Riley, WPX
- Andrea Felix, WPX
- Mark Lepich, WPX
- Steven Fuller, LAC
- Navajo Nation local Chapter House

## 4.2. List of Preparers

This EA was prepared by NCI in conformance with the standards of and under the direction of the BLM-FFO. The following individuals assisted in the preparation of this EA:

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- John Hansen, Wildlife Biologist, BLM-FFO
- John Kendall, Wildlife Management Biologist, BLM-FFO
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- Sarah Scott, WPX Project Manager, BLM-FFO
- Roger Herrera, Environmental Protection Specialist, BLM-FFO
- Vera Matthews, Realty Specialist, BLM-FFO

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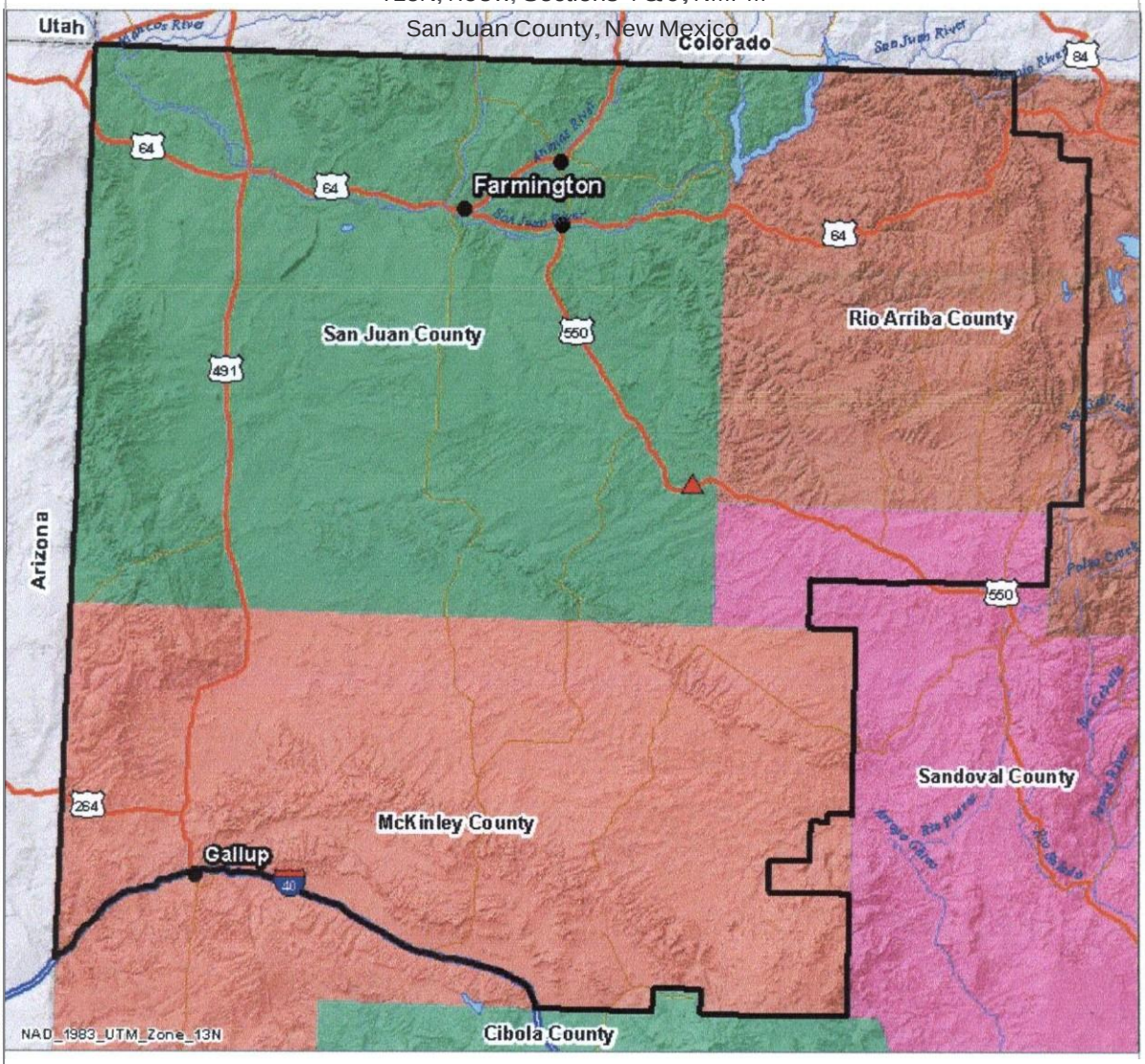
# APPENDIX A. MAPS

## A.1. Vicinity Map

Vicinity Map
WPX Energy Production, LLC
Chaco 2308-04P Nos. 149H & 150H Pipelines
T23N, ROSW, Sections 4 & 9, NMPM
San Juan County, New Mexico




Legend

A Proposed Project Location
BLM- FFO Boundary
Toons
River
Navajo Reservoir
Interstate
Highway
Major Road

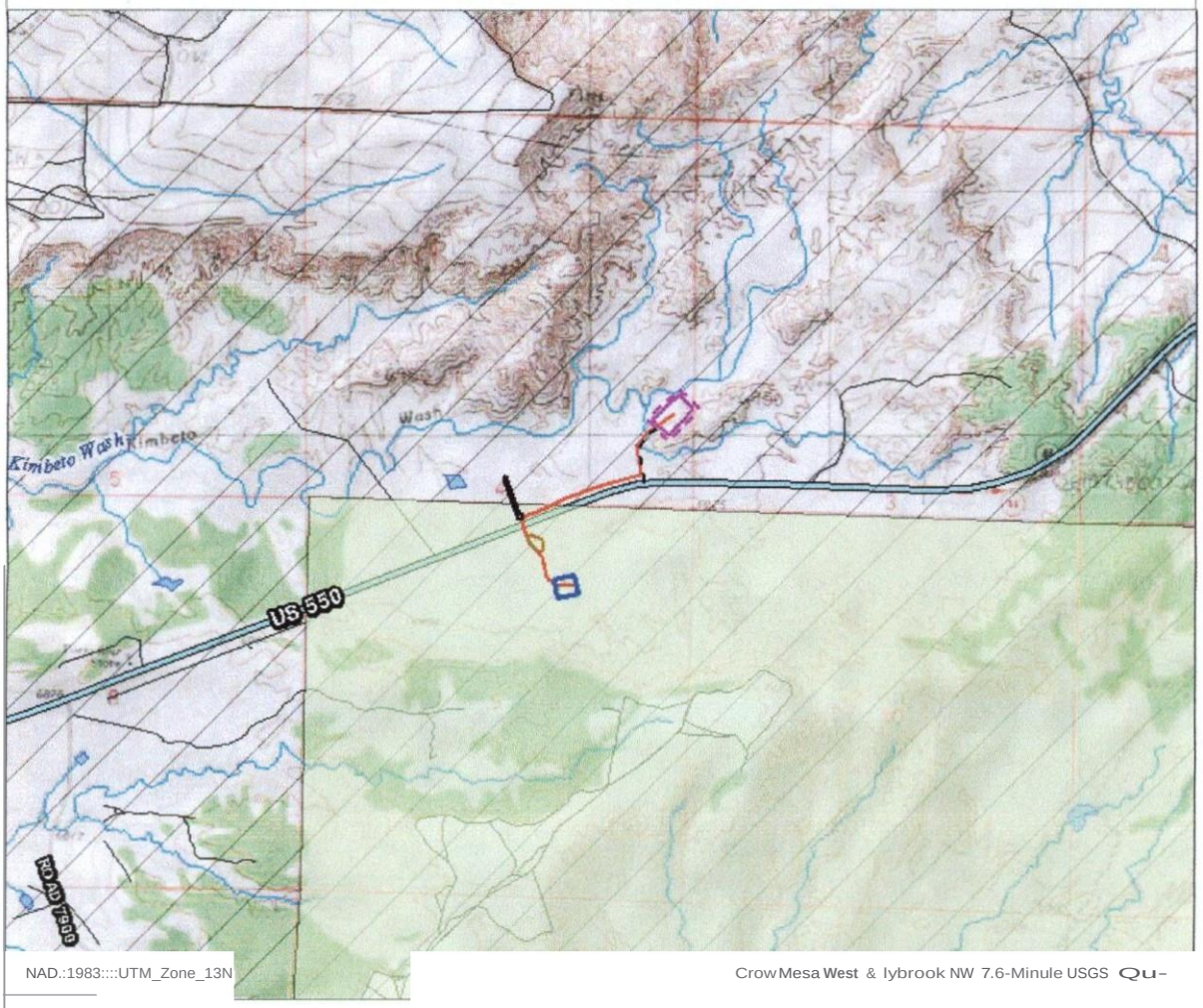
6
N

0 10 20 Miles

12/.3012013

## A.2. Project Area Map

**Project Area Map**
**WPX Energy Production, LLC**
**Chaco 2308-04P Nos. 149H & 150H Pipelines**
**T.23N, ROSW, Sections 4 & 9, NMPM**
**San Juan County, New Mexico**




NAD.:1983:::UTM_Zone_13N

Crow Mesa West & lybrook NW 7.6-Minule USGS Qu-

**Legend**

Chaco 149H/150H Project Features
- Access Road (Previously Perm1ted)
- Well Pad (Previously Permitted)
- Well Pad Construction Zone (Previously Permilled)
- TUANo 1
- TUANo. 2
- Proposed Project Alignment

D 147H Tank Battery Site
C. Lybrook Fossil SOA
BFC/AG Habitat Zone
U S H1ghway
BLM Roads
USGS Watercourse
Waterbody

0 1,500 3,000 Jfeet

1213012013

## A.3. Aerial Map

**Project Aerial Photograph Map**
**WPX Energy Production, LLC**
**Chaco 2308-04P Nos. 149H & 150H Pipelines**
**T23N, ROBW, Sections 4 & 9, NMPM**
**San Juan County, New Mexico**

**Legend**

Chaco 149H/150H Project Features
Access Road (Previously Permitted)
Well Pad (Previously Permitted)
Well Pad Construction Zone (Previously Permitted)
TUA No. 1
TUANo. 2
Proposed Project Alignment

147H Tank Battery Site
Lybrook Fossil SDA
BFC/AG Habitat Zone
Encana'S Proposed Chaco Trunk No. 2 Pipeline
WPX's Permitted Chaco 145H/146H Project
.S. Highway
USGS Watercourse
Existing Wells

0 400 a00 Feet

1/912014

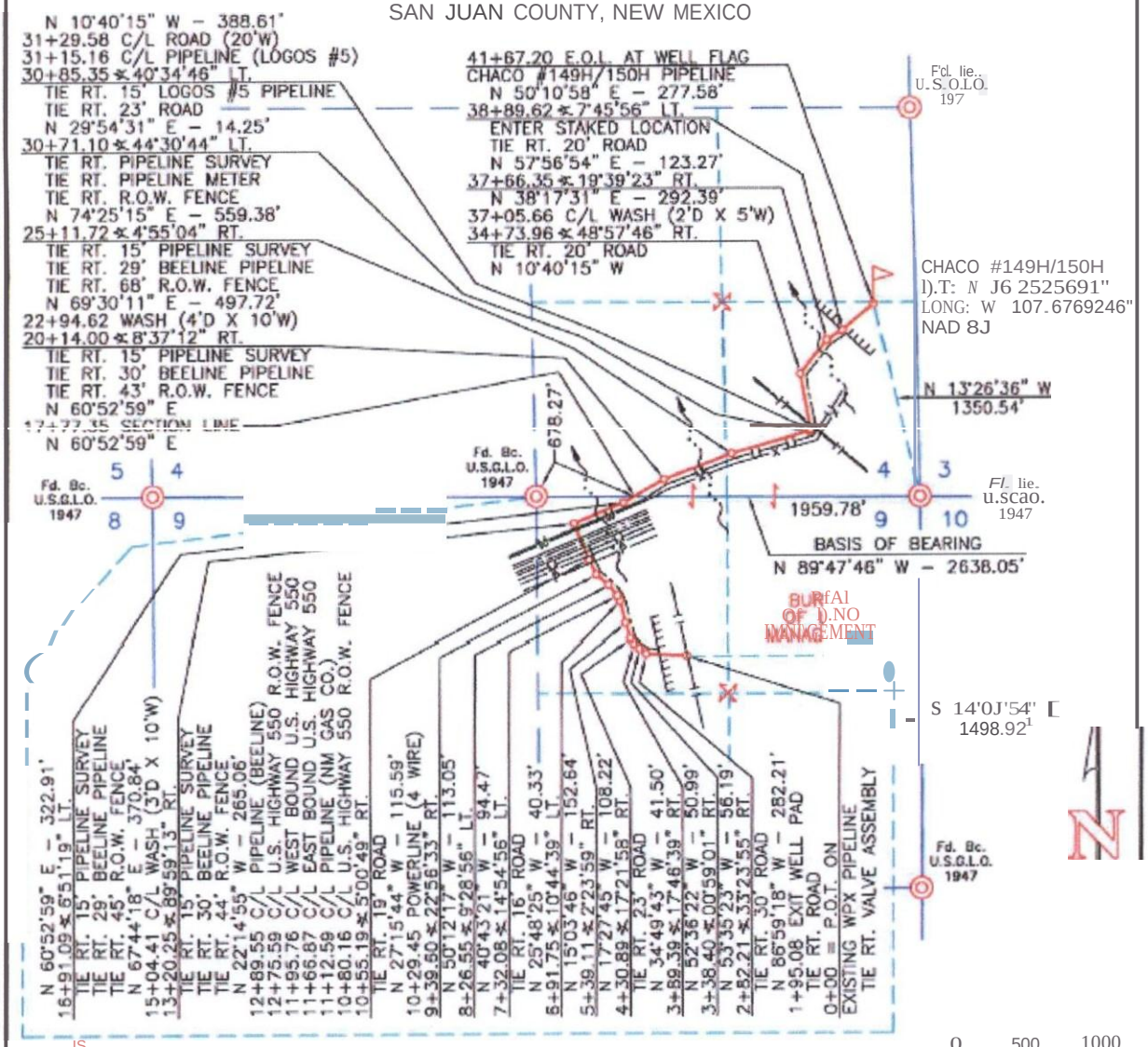
# APPENDIX B. BIOLOGICAL SURVEY REPORT

# APPENDIX C. PLATS

# YvPX ENERGY

## PROPOSED CHACO #149H/150H PIPELINE

SEC. 4 &: 9, T–23–N, R–8–W, N..P.M.,
SAN JUAN COUNTY, NEW MEXICO

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ROBERT WILLIAMS CORPORATION NO. 14831, DO HEREBY
THAT SURVEY WAS MADE ON THE GROUND
MADE BY ME OR UNDER MY DIRECT SUPERVISION;
THAT THIS SURVEY MEETS THE MINIMUM
NEW MEXICO, AND THAT IT IS TRUE AND CORRECT TO THE
BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT
IN AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT.
12-12-2013
JOHN A. VUKONICH, P.E./P.S., N.M.P.S. #14831 DATE

| OWNER | STATION | FEET/RODS/ACRES |
|---|---|---|
| BUREAU OF LAND MANAGEMENT | 0+00 10 41-1117.10 | 4167.20/252.558/3.827 |

WPX ENERGY

UNITED FIELD SERVICES INC.
P.O. BOX 3651
FARMINGTON, NM 87499
OFFICE: (505) 334-6408

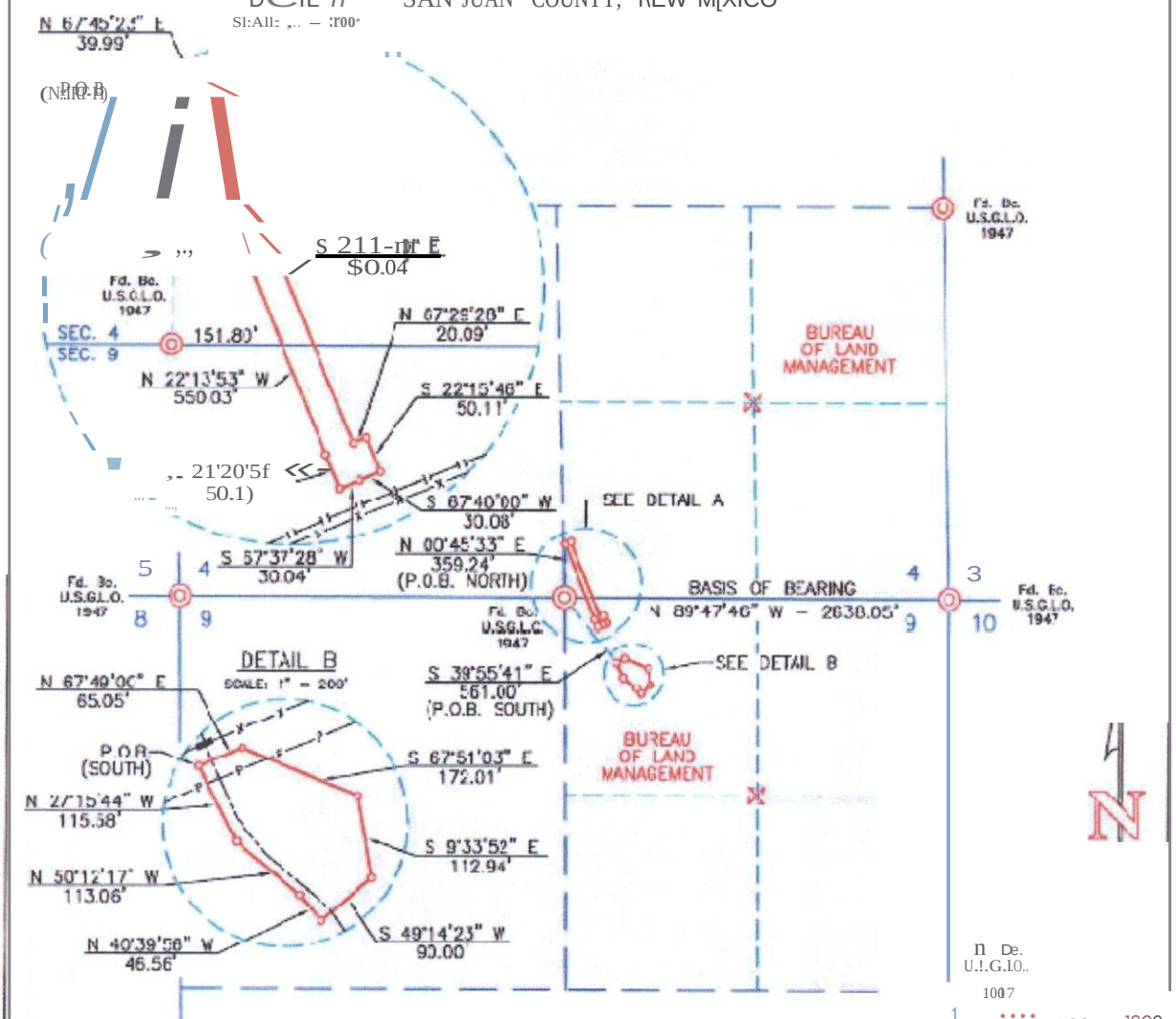
SURVEYED: 11/22/13 REV. DATE: In. rn JA'i.
DRAWN BY: C.B. OAt£ ....,.. 12/04/13 fU OIAW(t 10SMP02

# WPX ENERGY

## PROPOSt:D CHACO #149H/150H T.U.A. SITES

SfC. 4 &: 9. T-?3-N, R-R-W, N.M.P.M.,

DCIL h SAN JUAN COUNTY, fNEW M[XICO




NOTES:

1. BASIS OF BEARING: MONUMENTED SOUTH LINE OF THE SE 1/4 OF SECTION 4, T-23-N, R-8-W, N.M.P.M., SAN JUAN COUNTY, NEW MEXICO. BEARS: N 89°47'46" W - 2638.05'
2. ALL BEARINGS & DISTANCES SHOWN ARE BASED UPON THE NEW MEXICO COORDINATE SYSTEM, WEST ZONE. NAD 83. (COMBINED SCALE FACTOR: 0.9995933315)

| OWN[R | T.U.A. | SC. fCO | ACCD) |
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WPX ENERGY

SURVEYED: 11/22/13 | REV. DATE: | APP. BY: J.A.V.

D:KWI ay, C.& | DATE DRAWN: 12/04/13 | FILE NAME: 1C589P33

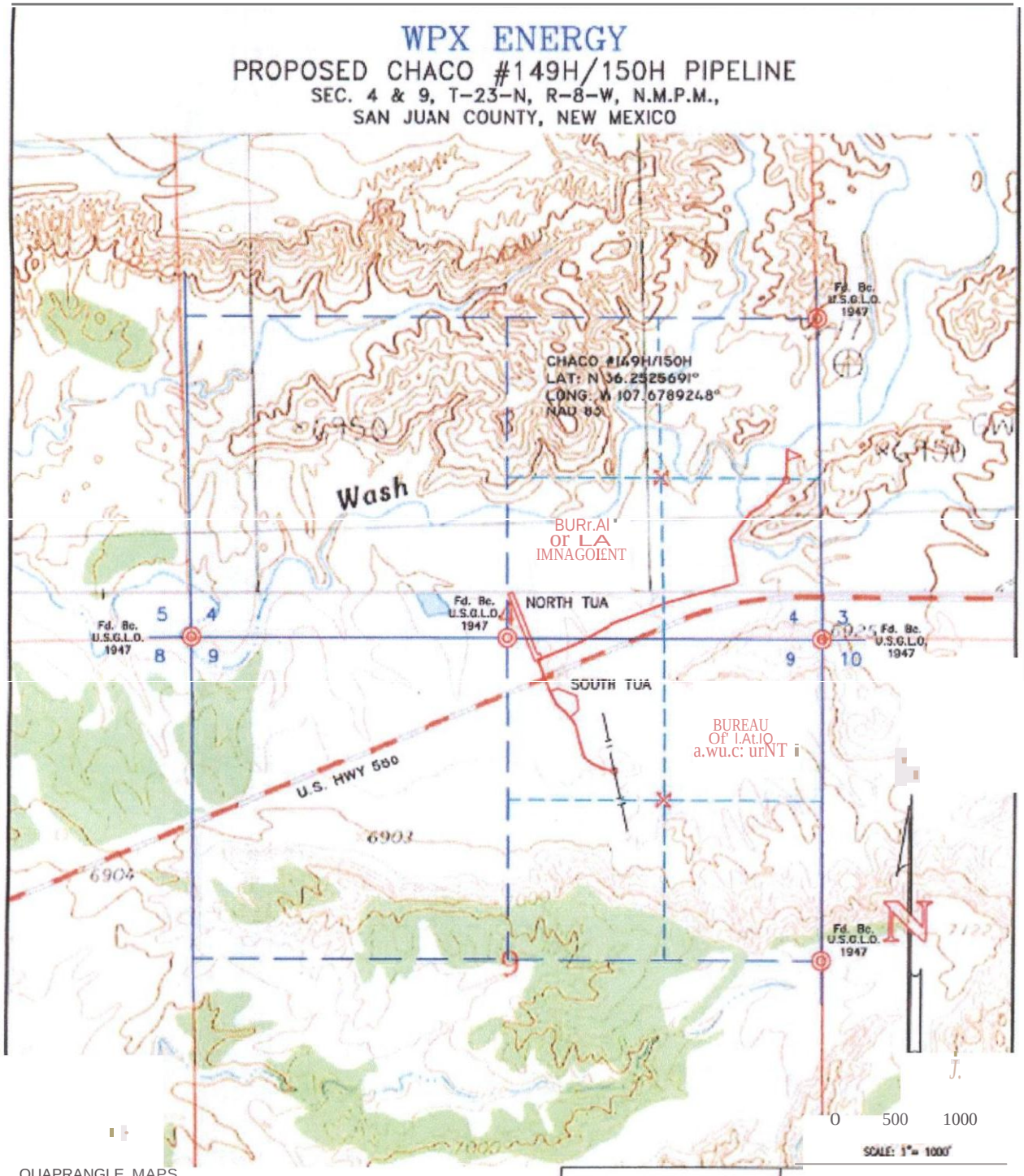
12-12-2013

JOHN A. VERONICH, P.E./P.S. N.E.P.S. #14831 DATE

# WPX ENERGY

## PROPOSED CHACO #149H/150H PIPELINE

SEC. 4 & 9, T-23-N, R-8-W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO




QUAPRANGLE MAPS
CROW MESA WEST
LYBROOK NW

WPX ENERGY

UNITED

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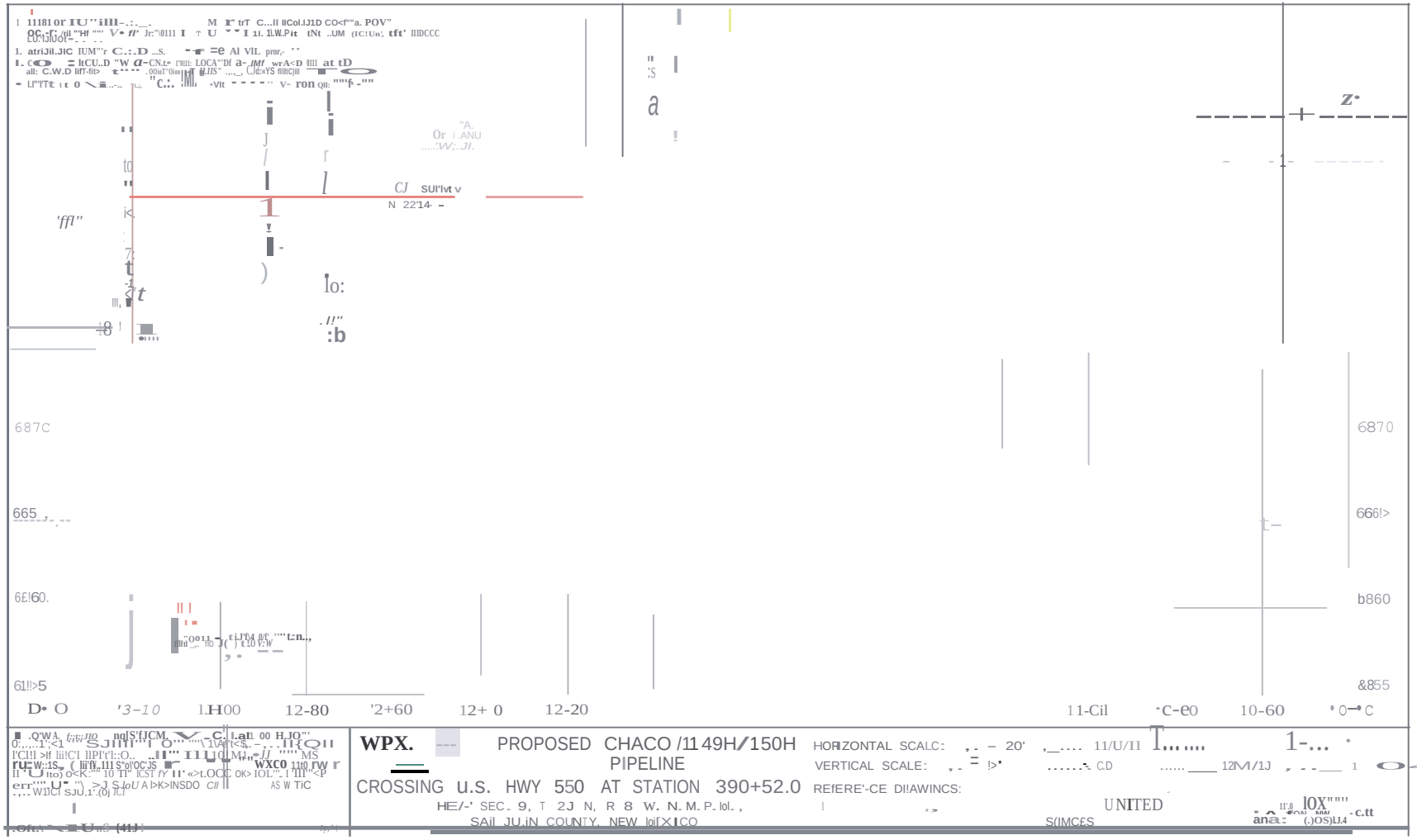
WPX.
PROPOSED CHACO /1149H/150H
PIPELINE
CROSSING u.s. HWY 550 AT STATION 390+52.0
HORIZONTAL SCALE:
VERTICAL SCALE:
UNITED
687C
6870
665
666!>
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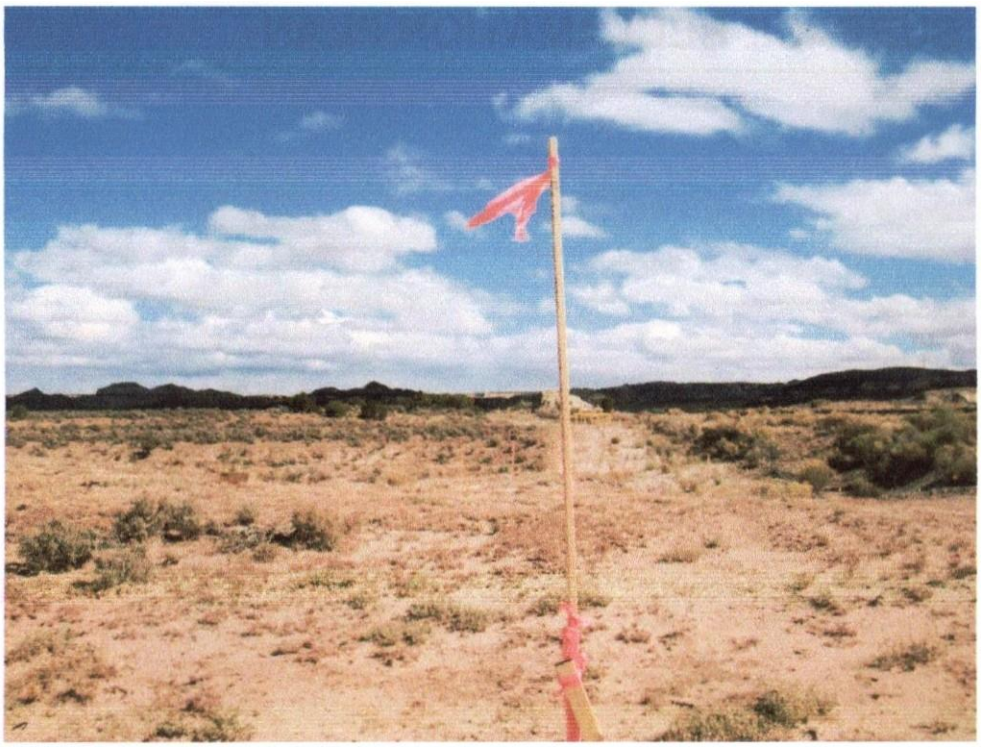
&855
12-80
'2+60
12+ 0
12-20
10-60

# APPENDIX D. PHOTOGRAPHS

View from northern terminus of proposed pipeline corridor (approximate stationing 38+89.62), looking southwestward along corridor (following 149H/150H access road, which was not yet built at the time this photo was taken)

View from north-central portion of proposed pipeline corridor (approximate stationing 30+85.35; adjacent to Logos Resources, LLC pipeline corridor), looking west-southwestward along corridor



View from south-central portion of proposed pipeline corridor (approximate stationing 20+14.00; north of U.S. Highway 550 and adjacent to Logos Resources, LLC pipeline corridor), looking east-northwestward along corridor

View from southern terminus of proposed pipeline corridor (approximate stationing 2+82.21), looking northwestward along corridor (existing access road present on right side of photo)

# APPENDIX E. SURFACE RECLAMATION PLAN