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WPX Energy Production, LLC's
NE Chaco COM #178H, 179H, & 239H Well-Connect Pipeline

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TABLE OF CONTENTS

1. Purpose and Need for Action 5
   1.1. Background 5
   1.2. Purpose and Need for Action 5
   1.3. Decision to be Made 5
   1.4. Conformance with Applicable Land Use Plan(s) 6
   1.5. Relationship to Statutes, Regulations or Other Plans 6
   1.6. Scoping, Public Involvement, and Issues 9
2. Proposed Action and Alternative(s) 10
   2.1. Proposed Action 10
   2.2. No Action 15
   2.3. Alternatives Considered but Eliminated from Detailed Study 16
3. Affected Environment and Environmental Consequences 16
   3.1. Air Resources 16
   3.2. Cultural Resources 20
   3.3. Upland Vegetation 21
   3.4. Noxious Weeds and Invasive Species 22
   3.5. Migratory Birds 23
   3.6. Special Status Species 26
   3.7. Public Health and Safety 27
   3.8. Environmental Justice 28
4. Supporting Information 33
   4.1. Tribes, Individuals, Organizations, or Agencies Consulted 33
   4.2. List of Preparers 33
   4.3. References 33
Maps 38
Plats 41
Surface Reclamation Plan 44

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1. PURPOSE AND NEED FOR ACTION

1.1. Background

WPX Energy Production, LLC (WPX) has submitted a Sundry Notice (Form 3160-5) to the Bureau of Land Management - Farmington Field Office (BLM-FFO) to amend the existing NE Chaco COM #178H, 179H, and 239H well project to include the addition of a well-connect pipeline. The proposed action is the approval of the Sundry Notice by the BLM-FFO, located in Farmington, New Mexico.

The proposed project is located on public lands managed by the BLM-FFO within Section 06 of Township 23 North, Range 06 West, N.M.P.M. The proposed project would include the construction, usage, and abandonment of a well-connect pipeline within existing access road Right-of-Way (ROW) corridors for a total length of 3,612.2 feet. The proposed well-connect pipelines would transport natural gas, oil, and water from WPX's NE Chaco COM #178H, #179H, & #239H well pad to WPX's Chaco Trunk 3 Extension 2 Pipeline. The NE Chaco COM #178H, #179H, and #239H well location is currently tied into ELM Ridge Gathering System for natural gas. However, the ELM Ridge Gathering System is currently not able to accommodate the natural gas volumes for these three wells. Additionally, WPX's proposed well-connect pipeline would enable WPX to pipe not only natural gas but the water and oil into their gathering system as well. The corridor would contain two 4-inch steel gas/liquids pipeline and one 2-inch poly water pipeline. The pipelines would be laid in one trench approximately 5 feet offset from the edge to the running surface of the access road.

The Project would be entirely within existing permitted ROW. It would encompass approximately 2.49 acres of disturbance, all being within or adjacent to existing disturbance along the existing NE Chaco COM #178H, #179H, and #239H well and Elm Ridge Resources' Grace Federal 6 002 well access road corridors. Maps of the proposed project area are provided in Appendix A on USGS topographic quadrangle and aerial imagery base maps. The proposed project area is located approximately 42 miles south-southeast of the town of Bloomfield, New Mexico; 3.8 miles northeast of the Lybrook, NM; 1.7 mile north of U.S. Highway 550; and 1 mile east of County Road 378 (see Appendix A).

1.2. Purpose and Need for Action

The purpose of the proposed action is to provide WPX access to public lands managed by the BLM to build a pipeline gathering system and related facilities.

The need for the proposed action is established by the BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701 et seq.) to respond to a request for ROW Grants over public lands.

1.3. Decision to be Made

Based on the information in this environmental assessment (EA), the BLM-FFO will decide whether or not to approve the Sundry Notice, and if so, under what terms and conditions. Under the National Environmental Policy Act (NEPA) (Public Law [PL] 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 either:

- To approve the Sundry Notice with design features as submitted;
- To approve the Sundry Notice with additional mitigations;
- To analyze the effects of the proposal in an EIS; or
- To deny the Sundry Notice.

1.4. Conformance with Applicable Land Use Plan(s)

The proposed action is in conformance with the 2003 BLM-FFO Resource Management Plan (RMP). 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 RMP was approved by the September 29, 2003 Record of Decision (ROD; BLM 2003b), and updated in December 2003.

Specifically, the proposed action is in conformance with the following objectives:

> 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)

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. The proposed project would not be in conflict with any local, county, or state plans.

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

Activities affecting Waters of the U.S. are regulated under the Clean Water Act (CWA) (33 USC 1251-1376; Chapter 758; PL 845; 62 Stat. 1155); reauthorized 1991). Specifically, Section 404 authorizes discharges to waters of the U.S. and Section 401 provides water quality certification for such activities. The Section 401 certification would be granted by the New Mexico Environment Department (NMED).

The Nationwide Permit (NWP) program under Section 404 of the Act provides for fills to waters subject to jurisdiction under Section 404 for certain discharges. It 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.) within the BLM-FFO planning area 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.

Under Section 402 of the Act, as amended, the U.S. Environmental Protection Agency (EPA) regulates storm water discharges from industrial and construction activities under the National Pollution Discharge Elimination System program (NPDES). 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. However, oil and gas activities have been exempt from NPDES permitting regulations in New Mexico.

1.5.2. National Historic Preservation Act

Compliance with Section 106 responsibilities of the National Historic Preservation Act are adhered to by following the BLM – New Mexico SHPO protocol agreement (2014), which is authorized by the *National Programmatic Agreement between the BLM*, the *Advisory Council on Historic Preservation*, and the *National Conference of State Historic Preservation Officers* (2012), and other applicable BLM handbooks.

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.

1.5.4 Endangered Species Act

The Endangered Species Act of 1973 (ESA) [16 U.S.C. 1531 et. seq.] requires all federal departments and agencies to conserve species listed as threatened or endangered, and species listed as candidates for federal listing with the United States Fish and Wildlife Service (USFWS), or designated habitat. Under Section 7 of the Endangered ESA, all federal agencies are required to consult with the USFWS or National Marine Fisheries Service on all actions authorized, funded, or carried out by a federal agency that may affect listed species or designated critical habitat.

Consultation with the USFWS was conducted as part of the PRMP/FEIS to address the cumulative effects of RMP implementation (Consultation No. 2-22-01-1-389, Appendix M of the PRMP/FEIS).

1.5.5 Archaeological Resources

Section 106 of the National Historic Preservation Act of 1966 (NHPA), Section 3 of the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archaeological Resources Protection Act (ARPA) provide for protection of historical resources, including cultural and religious properties. NHPA provides protection for sites eligible for listing in the National Register of historic places through federal agency oversight, independent of land ownership when construction, operation, and reclamation of the infrastructure is located on non-Federal land that does constitute a Federal action. NAGPRA provides ownership disposition of Native American resources intentionally excavated or inadvertently discovered on Federal or tribal lands. ARPA provides protection of Native American cultural and religious resources on Federal and tribal lands, in the event they are discovered.

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 (2014), 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 (2012).

1.5.6 Paleontological Resources

Fossils found on BLM-managed lands are considered part of our national heritage and afforded protection. The BLM manages fossil resources for their scientific, educational, and recreational values. On public lands paleontological resources are managed under authorities and policy's that govern the management and preservation of the resource. Paleontological resources are managed under numerous authorities including the BLM Field Office 2003 Resource Management Plan (BLM 2003b, 4-117), Paleontological Resources Preservation Act of 2009 (Sections 6301-6312 of the Omnibus Public Lands Act of 2009, 16 USC 470aaa), Federal Land Policy and Management Act of 1976 (P.L. 94-579), National Environmental Policy Act of 1969 (P.O. 91-190), Potential Fossil Yield Classification System for

Paleontological Resources on Public Lands (IM 2008-009), and the Assessment and Mitigation of Potential Impacts to Paleontological Resources (IM 2009-011). The authorities provide for civil and criminal penalties and also require that public lands be managed to preserve and protect the quality of scientific values of paleontological resources.

The BLM FFO recognized eight Paleontological Special Designated Areas (SDA) in the current Resource Management Plan (more than 135,000 acres) in order to preserve important paleontological resources for scientific study, protection, and other public benefits (BLM 2003b, 4-117). The BLM has determined that these areas require special management attention in order to protect, and prevent irreparable damage to important paleontological resources. The project is not located within any of these areas.

1.5.7 Wastes, Hazardous or Solid

The Resource Conservation and Recovery Act [(42 U.S.C.) § 6926, et. seq.] (RCRA) provides Federal authority to control hazardous wastes, including the generation, transportation, treatment, storage, and disposal of hazardous waste. It also sets forth a framework for the management of non-hazardous wastes and control of underground storage of petroleum or other hazardous materials and provides authority for state hazardous waste programs under §3006 of the Act. A 1980, amendment to RCRA conditionally exempted from regulation as hazardous wastes, “drilling fluids, production waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas. On July 6, 1988, EPA determined that oil and gas exploration, development and production (ED&P) wastes would not be regulated as hazardous wastes under RCRA. A simple rule of thumb was developed for determining if an ED&P waste is likely to be considered exempt or non-exempt from RCRA regulations: If (1) the waste came from down-hole, or (2) the waste was generated by contact with the oil and gas production stream during removal of produced water or other contaminants, the waste is most likely to be considered exempt by EPA.

The Comprehensive Environmental Response Compensation and Liability Act [(42 U.S.C.) §9601, et seq.] (CERCLA) provides Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment and provides for liability of persons responsible for releases of hazardous waste. Despite many oil and gas constituent wastes being exempt from hazardous waste regulations, certain RCRA exempt contaminants could be subject to regulations as hazardous substances under CERCLA. The New Mexico the Oil Conservation Division (OCD) administers hazardous waste regulations for oil and gas activities in New Mexico.

All wastes would be disposed of in a proper manner as required by federal and state law, and as described in the Conditions of Approval (COAs). No hazardous or solid waste materials are present within the analysis area. The notification of releases such as natural gas, natural gas liquids, and petroleum, outside a facility site is required under CERCLA and under BLM NTL-3A.

1.5.8 Public Health and Safety

All worker safety is governed by Occupational Safety and Health Administration (OSHA) safety laws and regulations. Worker safety incidents must also be reported to the BLM under the procedures of Notice to Lessee (NTL)-3A. Pipeline safety regulations are administered by OSHA as well as Department of Transportation (DOT) regulations. Pipeline safety regulations (49 CFR Parts 190 and 192) govern design, construction and operation of gas transmission lines. Any incidents involving DOT-regulated pipelines must be reported under these regulations (District 2003a).

Most substances and wastes generated at oil and gas facilities are exempt from regulation under the Resource Conservation and Recovery Act (1976). The Environmental Protection Agency (EPA) and DOT regulate materials associated with well construction and production activities that are classified as hazardous. When significant amounts of chemicals are stored on-site, governmental agencies will be notified as required under the Emergency Planning and Community Right to Know Act (1986). The notification of releases such as natural gas, natural gas liquids, and petroleum, outside the facility site is required under the Comprehensive Environmental Response Compensation and Liability Act, 1980

(CERCLA) and under BLM NTL-3A. The well locations must have an informational sign, as directed under 43 CFR 3160.

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 was held for the project on January 23, 2015. A BLM-FFO Interdisciplinary Team meeting was held on 2/2/15 to discuss the issues pertaining to the NE Chaco COM #178H, 179H, and 239H well-connect project. At the aforementioned meetings, potential issues of concern were identified by the BLM-FFO.

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 for the NE Chaco COM #178H, 179H, and 239H well-connect project during the onsite as potential issues of concern for the proposed action. These same issues will be addressed in this EA.

- How would dust and equipment emissions associated with the proposed projects impact air resources?
- How would vegetation-clearing, proposed project activities, and final reclamation associated with the proposed project impact upland vegetation and the introduction of noxious weeds?
- How would vegetation-clearing, proposed project activities, and final reclamation associated with the proposed project impact migratory birds?
- How would vegetation-clearing, proposed project activities, and final reclamation associated with the proposed project impact the following BLM Special Status Species (SSS): American peregrine falcon (*Falco peregrinus anatum*), Bendire's thrasher (*Toxostoma bendirei*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), pinyon jay (*Gymnorhinus cyanocephalus*), spotted bat (*Euderma maculatum*), and Townsend's big-eared bat (*Corynorhinus townsendii*)?
- How would surface-disturbing activities associated with construction of the proposed project impact cultural resources?
- What would be the impacts of the proposed project on environmental justice?
- What would be the impacts of the proposed project on public health and safety?

Issues Considered but not Analyzed

The following issues were identified 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.

Endangered Species Act Species

The Endangered Species Act (ESA) of 1973 requires all federal departments and agencies to conserve threatened, endangered, and critical and sensitive species and the habitats on which they depend, and to consult with the U.S. Fish and Wildlife Service (USFWS) on all actions authorized, funded, or carried out by the agency to ensure that the action will not likely jeopardize the continued existence of any threatened and endangered species or adversely modify critical habitat. Consultation with the USFWS, as required by Section 7 of the ESA, was conducted as part of the Farmington PRMP/FEIS (Consultation No. 2-22-01-I-389) to address cumulative effects of RMP implementation. The consultation is summarized in Appendix M of the PRMP/FEIS. 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.

Paleontology

The San Juan Basin in northwestern New Mexico is rich in paleontological resources. 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 a Sundry Notice associated with WPX's NE Chaco COM #178H, #179H, and #239H wells. The proposed project would include the construction, operation, maintenance, and eventually, the final abandonment of one well-connect pipeline within existing access road ROW corridors. The proposed project would commence after the Sundry Notice is approved.

WPX proposed to construct the 3,612.2 foot NE Chaco COM #178H, 179H, and 239H well-connect pipeline on BLM-FFO surface. Pipelines installed within the existing corridor would consist of two 4-inch steel gas/liquids pipelines and one 2-inch poly water pipeline. The pipelines would be laid in one trench approximately 5 feet offset from the running surface of the existing access road.

2.1.1. Location of Proposed Project area

Maps of the proposed project area are provided in Appendix A on USGS topographic quadrangle and aerial imagery base maps.

The proposed project area is located within Sections 6, Township 23 North, Range 6 West, New Mexico Principle Meridian (NMPM) in Rio Arriba County within the San Juan Basin of northwest New Mexico. The proposed project area is located approximately 40 miles southeast of Bloomfield, NM and 3 miles northeast of Lybrook, NM.

The NE Chaco COM #178H, #179H, and #239H well-connect pipeline would begin at the WPX NE Chaco COM #178H, #179H, and #239H well location in the southwest quarter of Section 6 and travel east and north, across the northern half of the southwest quarter of Section 6 where the pipeline would end just short of entering the northwest quarter of Section 6, terminating at WPX's proposed Chaco Trunk 3 Extension 2 pipeline. The existing permitted area where the proposed well-connect pipeline will be

installed totals approximately 2.49 acres within a 30-foot wide corridor for 3,612.2 feet. This area consists of the existing 14-foot wide access road running surface; barrow ditches along each side of the access; a portion of area reclaimed after initial road construction; and a portion of area within the ROW that was not utilized during initial road construction and remained undisturbed. Pipelines would be installed 5-foot offset from the edge of the running surface of the access road. This would allow a width of 8 feet within the permitted area where vegetation clearing and surface disturbance would occur. As such, approximately 0.66 acres of surface disturbance is likely to occur. All project disturbance will remain within the existing permitted access road ROW's.

Terrain along the proposed pipeline route includes gently sloping Sagebrush/Grass Community within and surrounding previously disturbed areas.

2.1.2. Description of Proposed Project

A detailed description of design features and construction practices associated with the proposed action can be found below. A diagram associated with the proposed project is provided in Appendix B and provide additional details.

Design Features and Best Management Practices

WPX would adhere to the stipulations attached to the approved Sundry Notice. 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 an approved Sundry Notice. 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 Special Status Species and Livestock

- A migratory bird nest survey will be conducted if any vegetation-disturbing activities greater than 4 acres in size occur between May 15 and July 31. The survey must be conducted by a BLM-approved biologist using a survey protocol developed and provided by the BLM/FFO. If active nests are located within the proposed permitted area, project activities will not be permitted without written approval by a BLM/FFO biologist.

- 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.

- Wildlife hazards associated with the proposed project would be fenced, covered, and/or contained in storage tanks, as necessary.

- Livestock grazing operators in the vicinity of the proposed project area would be contacted by WPX at least 10 days prior to operations. Open holes would be barricaded to ensure the safety of livestock and wildlife. If present, any range improvements (such as fences, gates, cattleguards, or waterlines) disturbed during drilling, completion, or reclamation activities would be repaired to the condition they were in prior to disturbance. Repairs, if needed, would take place immediately following the disturbance.

- Backfilling operations will be performed within a reasonable amount of time to ensure that the trenches are not left open for more than 24 hours. If a trench is left open overnight, it will be temporarily fenced or a night watchman will be utilized. The excavated soils will be returned to the trenches, atop the pipe, and compacted to prevent subsidence. The trenches will be compacted after approximately 2 feet of fill is placed over the pipe and after the ground surface has been leveled.

- Escape ramps/crossovers will be constructed every 1,320 feet. The ends of the open trench will be sloped each night with a 4:1 slope.

- Established livestock and wildlife trails will be left in place as crossovers. In areas where active grazing is taking place, escape ramps/crossovers will be placed every 500 feet. Crossovers will be a minimum of 10 feet wide and not fenced.

- The end of the pipe will be plugged to prevent animals from crawling in.

- Before the trench is closed, it will be inspected for animals. Any trapped wildlife or livestock will be promptly removed and released at least 150 yards from the trench.

Protection of Topsoil

- The upper 6 inches of topsoil (if available) will be stripped following vegetation and site clearing. Topsoil will not be mixed with the underlying subsoil horizons and will be stockpiled as a berm along the perimeter of the well pad within the construction zone, separate from subsoil or other excavated material.

- Topsoil and sub-surface soils will be replaced in the proper order, prior to final seedbed preparation. Spreading shall not be done when the ground or topsoil is wet. Vehicle/equipment traffic will not be allowed to cross topsoil stockpiles. If topsoil is stored for a length of time such that nutrients are

depleted from the topsoil, amendments will 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 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 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 existing access road corridor and/or when activities would cause irreparable harm to roads, soils, or streams.

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. The proposed well-connect pipelines would be in operation year-round; however, the volume of commodity is not known at this time. Approximately one to two weeks of construction would be required to construct and install the proposed well-connect pipelines. Prior to construction commencement, WPX would notify the BLM-FFO of additional types of construction equipment to be used.

Within the existing access road corridor and along the proposed pipeline route, all vegetation would be cleared and the top 6 inches of topsoil (if available) would be salvaged and stockpiled. Vegetation removed during construction, including slash/brush and trees 3 inches and greater in diameter would be chipped or mulched and incorporated into the topsoil as additional organic matter.

WPX would install the proposed well-connect pipelines in one trench approximately 5 feet offset from the edge of the running surface of the access road within the existing 30-foot-wide access corridor. Trenching activity would be conducted using a trencher or backhoe. The trench would generally be 4 to 5 feet in depth. The trench 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 trench every quarter mile. When stringing pipeline, one joint of pipeline would be set back every quarter mile. After a pipeline segment has been welded and coated, a side-boom tractor would be used to place the pipeline into the trench.

After the proposed well-connect pipelines have been installed, the soils excavated from the trench would be returned and compacted to prevent subsidence. The trench would be compacted after approximately 2 feet of fill is placed within the trench and after the ground surface has been leveled.

Prior to the proposed well-connect pipelines being placed in service, the pipes would be pressure tested.

Pipeline markers would be installed along the proposed pipeline corridor within the line of sight, without voiding safety measures. Within 90 days of installation, aboveground structures not subject to safety requirements would be painted Juniper Green to blend with the surrounding landscape and reduce visual resource impacts.

Interim Reclamation

Following construction, interim reclamation would occur within all 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.

The entire well-connect pipeline corridor would be reclaimed. 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.

Details of the interim reclamation process (including species included in the seed mixtures) are provided in the Surface Reclamation Plan (Appendix D).

Operation

During the operation phase of the proposed project, WPX personnel would perform routine or emergency maintenance on the proposed well-connect pipelines and associated facilities.

Final Reclamation and Abandonment

Once the well-connect pipelines are no longer necessary and would not be expected to be utilized in the foreseeable future, they would be abandoned. Relinquishment of the ROW Grants would be carried out under current BLM regulations.

Final reclamation would occur within any portion of the project area (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).

2.1.3. Proposed Surface Disturbance

The existing permitted area where the proposed well-connect pipeline will be installed totals approximately 2.49 acres within a 30-foot wide corridor for 3,612.2 feet. This area consists of the existing 14-foot wide access road running surface; barrow ditches along each side of the access; a portion of area reclaimed after initial road construction; and a portion of area within the ROW that was not utilized during initial road construction and remained undisturbed. Pipelines would be installed 5-foot offset from the edge of the running surface of the access road. This would allow a width of 8 feet within the permitted area where vegetation clearing and surface disturbance would occur. As such, approximately 0.66 acres of surface disturbance is likely to occur. All project disturbance will remain within the existing permitted access road ROW's.

All surface disturbances associated with the pipelines would be reclaimed. 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.

Surface disturbance associated with the proposed project is described in detail in Table 2, below. Depictions of the surface-disturbing activity locations are provided in Appendices A (Maps) and B (Plats).

Table 1. Proposed Project Surface Impacts

Feature	Disturbance (acres)		Description of Acreage Following Post-Construction Reclamation	
	Total	New Disturbance	Fully Reclaimed	Unreclaimed
Well-Connect Pipeline	0.66 acres	0 acres	0.66 acres	0 acres
Total Project Surface Disturbance	**0.66 acres**	**0 acres**	**0.66 acres**	**0 acres**

2.2. No Action

Under the No Action Alternative, the Sundry Notice requesting the construction of the proposed well-connect pipelines within the existing access road ROW would not be approved. The proposed pipelines would not be installed. Current land and resource uses would continue to occur in the proposed project area.

2.3. Alternatives Considered but Eliminated from Detailed Study

No reasonable alternatives to the proposed action have been developed that would result in significantly fewer impacts or any clear advantages over the proposed action. The proposed well-connect pipeline corridor follows the most economic and direct route based on the location of existing WPX infrastructure, existing disturbance, and surface resources.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the environment that would be affected by implementation of the alternatives described in Chapter 2. Aspects of the affected environment described in this chapter focus on the relevant major resources or issues. Certain critical environmental components require analysis under BLM policy. These items are included above in Section 1.6.2.

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 is located in Rio Arriba County, New Mexico. Additional general information on air quality in the area is contained in Chapter 3 of the Farmington PRMP/FEIS. In addition, new information about greenhouse gases (GHGs) and their effects on national and global climate conditions has emerged since this document was prepared. On-going scientific research has identified the potential impacts of GHG emissions such as carbon dioxide (CO_2) methane (CH_4); nitrous oxide (N_2O); 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 Air Resources Technical Report) (BLM, 2014a). 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 Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including 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} and $PM_{2.5}$), sulfur dioxide (SO_2) and lead (Pb). EPA has established National Ambient Air Quality Standards (NAAQS) for criteria air pollutants. The NAAQS are protective of human health and the environment. 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, except for tribal lands and within Bernalillo County. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and 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. EPA has proposed or completed actions recently to implement Clean Air Act

requirements for greenhouse gas emissions. Climate has the potential to influence renewable and non-renewable resource management.

Air Quality

The Air Resources Technical Report describes the types of data used for description of the existing conditions of criteria pollutants, 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. EPA's Green Book web page (U.S. Environmental Protection Agency, 2013) reports that all counties in the Farmington Field Office area are in attainment of all National Ambient Air Quality Standards (NAAQS) as defined by the Clean Air Act. The area is also in attainment of all state air quality standards (NMAAQS). The current status of criteria pollutant levels in the Farmington Field Office are described below.

"Design Values" are the concentrations of air pollution at a specific monitoring site that can be compared to the NAAQS. The 2012 design values for criteria pollutants are listed below in Table 1. There is no monitoring for CO and lead in San Juan County, but because the county is relatively rural, it is likely that these pollutants are not elevated. PM10 design concentrations are not available for San Juan County.

Table 2. Criteria Pollutant Monitored Design Values in San Juan County

Pollutant	2012 Design Concentration	Averaging Time	NAAQS	NMAAQS
O_3	0.071 ppm	8-hour	0.075 ppm[1]	
NO_2	13 ppb	Annual	53 ppb[2]	50 ppb
NO_2	38 ppb	1-hour	100 ppb[3]	
$PM_{2.5}$	4.7 µg/m^3	Annual	12 µg/m^3[3,4]	60 µg/m^3[3,6]
$PM_{2.5}$	14 µg/m^3	24 hour	35 µg/m^3[3,3]	150 µg/m^3[3,6]
SO_2	19 ppb	1-hour	75 ppb[5]	

Source: U.S. Environmental Protection Agency, 2014
[1] Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
[2] Not to be exceeded during the year
[3] 98th percentile, averaged over 3 years
[4] Annual mean, averaged over 3 years
[5] 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
[6] The NMAAQS is for Total Suspended Particulate (TSP)

In 2005, the EPA estimates that there was less than 0.01 ton per square mile of lead emitted in FFO counties, which is less than 2 tons total (U.S. Environmental Protection Agency, 2012). Lead emissions are not an issue in this area, and will not be discussed further.

Air quality in a given region can be measured by its Air Quality Index value. The air quality index (AQI) is reported according to a 500-point scale for each of the major criteria air pollutants, with the worst denominator determining the ranking. For example, if an area has a CO value of 132 on a given day and all other pollutants are below 50, the AQI for that day would be 132. The AQI scale breaks down into six categories: good (AQI<50), moderate (50-100), unhealthy for sensitive groups (100-150), unhealthy (>150), very unhealthy and hazardous. The AQI is a national index, the air quality rating and the associated level of health concern is the same everywhere in the country. The AQI is an important indicator for populations sensitive to air quality changes.

Mean AQI values for San Juan County were generally in the good range (AQI<50) in 2013 with 80% of the days in that range. The median AQI in 2013 was 42, which indicates "good" air quality. The maximum AQI in 2013 was 156, which is "unhealthy."

Although the AQI in the region has reached the level considered unhealthy for sensitive groups on several days almost every year in the last decade, there are no patterns or trends to the occurrences (Table 2). On 8 days in the past decade, air quality has reached the level of "unhealthy" and on two days, air quality reached the level of "very unhealthy". In 2009 and 2012, there were no days that were

"unhealthy for sensitive groups" or worse in air quality. In 2005 and 2013, there was one day that was "unhealthy" during each year. In 2010, there were five "unhealthy" days and two "very unhealthy days."

Table 3. Number of Days classified as "unhealthy for sensitive groups" (AQI 101-150) or worse

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Days	3	6	9	18	1	0	12	9	0	1
Source: U.S. Environmental Protection Agency, 2013a										

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, 2014a). The EPA conducts a periodic National Air Toxics Assessment (NATA) that quantifies HAP emissions by county in the U.S. The purpose of the NATA is to identify areas where HAP emissions result in high health risks and further emissions reduction strategies are necessary. A review of the results of the 2005 NATA shows that cancer, neurological and respiratory risks in San Juan County are generally lower than statewide and national levels as well as those for Bernalillo County where urban sources are concentrated in the Albuquerque area (U.S. Environmental Protection Agency, 2012).

Climate

The planning area is located in a semiarid climate regime typified by dry windy conditions and limited rainfall. Summer maximum temperatures are generally in the 80s or 90s (Fahrenheit) and winter minimum temperatures are generally in the teens to 20s. Temperatures occasionally reach above 100 degrees Fahrenheit 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 3 shows climate normals for the 30-year period from 1981 to 2010 for the Farmington, New Mexico, area.

Table 4. Climate Normals for the Farmington Area, 1981-2010

Month	Average Temperature (^{O}F [(1)])	Average Maximum Temperature (^{O}F)	Average Minimum Temperature (^{O}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: data collected at New Mexico State Agricultural Science Center - Farmington [(1)] degrees Fahrenheit				

Very recently, pioneering research using space-borne (satellite and aircraft) determination of methane concentrations have indicated anomalously large methane concentrations may occur in the Four Corners region (Kort, Frankenberg, Costigan, Lindenmaier, Dubey, & Wunch, 2014). A subsequent study (Schneising, Burrows, Dickerson, Buchwitz, Reuter, & Bovensmann, 2014) indicated larger anomalies over other oil and gas basins in the U.S. Methane is 34 times more potent at trapping greenhouse gas emissions than CO_2 when considering a time horizon of 100 years (Intergovernmental Panel on Climate

Change, 2013). While space-borne studies can determine the pollutant concentration in a column of air, these studies cannot pinpoint the specific sources of air pollution. Further study is required to determine the sources responsible for methane concentrations in the Four Corners region; however, it is known that a significant amount of methane is emitted during oil and gas well completion (Howarth, Santoro, & A.Ingraffea, 2011). Methane is also emitted from process equipment, such as pneumatic controllers and liquids unloading, at oil and gas production sites. Ground-based, direct source monitoring of pneumatic controllers conducted by the Center for Energy and Environmental Resources (Allen, et al., 2014) show that methane emissions from controllers exhibit a wide range of emissions and a small subset of pneumatic controllers emitted more methane than most. Emissions measured in the study varied significantly by region of the U.S., the application of the controller and whether the controller was continuous or intermittently venting. The Center for Energy and Environmental Resources had similar findings of variability of methane emissions from liquid unloading (Allen, et al., 2014a). In October 2012, USEPA promulgated air quality regulations controlling VOC emissions at gas wells. These rules require air pollution mitigation measures that reduce the emissions of volatile organic compounds. These same mitigation measures have a co-benefit of reducing methane emissions. Future ground-based and space-borne studies planned in the Four Corners region with emerging pollutant measurement technology may help to pinpoint significant, specific sources of methane emissions in the region.

The Air Resources Technical Report summarizes information about greenhouse gas emissions from oil and gas development and their effects on national and global climate conditions. While it is difficult to determine the spatial and temporal variability and change of climatic conditions; what is known is that increasing concentrations of GHGs are likely to accelerate the rate of climate change.

3.1.2. Direct and Indirect Impacts

Air quality would temporarily be directly impacted with pollution from exhaust emissions and dust. Air pollution from the motorized equipment and dust dissemination would discontinue at the completion of the 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 for 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 primary 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 Quality 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, 2014a). It includes a summary of emissions on the national and regional scale by industry source. Sources 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 proposed project could result in a very small direct and indirect increase in several criteria pollutants, HAPs, and GHGs as a result the short term construction activity. The very small increase in emissions from short term construction activity would not be expected to result in exceeding 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 action. 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 (BLM, 2014a) 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. It is currently not feasible to know with certainty the net impacts from particular emissions associated with activities on public lands.

3.2. Cultural Resources

3.2.1. Affected Environment

The proposed project is located within the archaeologically rich San Juan Basin of northwest New Mexico. In general, the history of the San Juan Basin can be divided into five major periods: PaleoIndian (ca. 10000 B.C. to 5500 B.C.), Archaic (ca. 5500 B.C. to A.D. 400), Basketmaker II-III and Pueblo I-IV periods (aka Anasazi; A.D. 1-1540), and the historic (A.D. 1540 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 Bureau of Land Management Farmington Field Office Final Environmental Impact Statement (2003) and will not be reiterated here. Additional information can also be found in an associated documented, Cultural Resources Technical Report (CRTR; SAIC 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. Traditional Cultural Properties (TCPs; Parker and King 1998) are a separate class of cultural resources and are places that have cultural values that transcend, for instance, the values of scientific importance that are normally ascribed to cultural resources such as archaeological sites, and may or may not coincide with archaeological sites.

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, 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.

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 2015-4a (Fuller, Sesler and Hovezak 2015; BLM 2015(II)025F), 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).

During the Class III survey, a total of five previously recorded archaeological sites were revisited within the APE (LAC Report 2015-4a [Fuller, Sesler and Hovezak 2015]). Cultural clearance is recommended for this project as no significant cultural properties will be affected by the proposed development.

3.2.2. Impacts from the Proposed Action

Direct and Indirect Impacts

Direct impacts normally include alterations to the physical integrity of a cultural site. If a cultural site is significant for other than its scientific information, direct impacts may also include the introduction of audible, atmospheric, or visual elements that are out of character for the cultural site. A potential indirect impact from the proposed action is the increase in human activity or access to the area with the increased potential of unauthorized removal or other alteration to cultural sites in the area.

Five previously recorded archaeological sites were encountered and the site records were updated. All of the sites will be avoided by the proposed project. Additionally, design features would be detailed in a Cultural Resource Record of Review, attached to the COAs in an approved Sundry to further protect any cultural site discovered during construction. The proposed action is not known to physically threaten any TCPs, prevent access to sacred sites, prevent the possession of sacred objects, or interfere or otherwise

hinder the performance of traditional ceremonies/rituals. The proposed action will have no direct or indirect impact on significant cultural sites (no historic properties affected).

Cumulative Impacts

There will be no negative cumulative impact on cultural resources as significant cultural sites are being avoided. A positive cumulative effect is the additional scientific information yielded by the archaeological survey.

3.3. Upland Vegetation

3.3.1. Affected Environment

The analysis area is located within the United States Environmental Protection Agency (USEPA) designated Arizona/New Mexico Plateau Level III ecoregion. The Arizona/New Mexico Plateau occurs primarily in Arizona, Colorado, and New Mexico, with a small portion in Nevada. This ecoregion is approximately 45,870,500 acres (185,632 square kilometers [km^2]), and the elevation ranges from 2,165 to 11,949 feet (660 to 3,642 meters) AMSL. The ecoregion's landscapes include low mountains, hills, mesas, foothills, irregular plains, alkaline basins, some sand dunes, and wetlands. This ecoregion 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 tridentate*), rabbitbrush (*Chrysothamnus* sp.), winterfat (*Krascheninnikovia lanata*), shadscale saltbush (*Atriplex confertifolia*), and greasewood (*Sarcobatus vermiculatus*); and grasslands of blue grama (*Bouteloua gracilis*), western wheatgrass (Psacopyrum smithii), green needlegrass (*Nassella viridula*), and needle-and-thread grass (*Stipa comata*). Higher elevations may support piñon pine and juniper woodlands. The ecoregion includes the urban areas of Santa Fe and Albuquerque. Important land uses include irrigated farming, recreation, rangeland, wildlife habitat, and oil and natural gas production.

Sagebrush shrubland and patches of piñon-juniper woodland communities are found within the proposed project area. In these areas, oneseed juniper (*Juniperus monosperma*), piñon pine (*Pinus edulis*), big sagebrush, and blue grama are dominant. Additional species found within this community during the original site survey include Russian thistle (*Salsola tragus*), broom snakeweed (*Gutierrezia sarothrae*), Indian ricegrass (*Achnatherum hymenoides*), purple threeawn (*Aristida purpurea*), and James' galleta (*Pleuraphis jamesii*) (BLM-FFO, 2013c).

3.3.2. Impacts from the Proposed Action

Direct and Indirect Impacts

Within the existing access road ROW and along the proposed pipeline route all vegetation would be cleared. The proposed project would result in the direct removal of approximately 0.66 acres of Sagebrush/Grass Community with a few piñon-juniper trees. Vegetation removed during construction, including slash/brush and trees 3 inches and greater in diameter, would be chipped or mulched and incorporated into the topsoil as additional organic matter.

During final reclamation, the appropriate BLM-approved seed mixture would be utilized. The species included in this mixture are listed in the Surface Reclamation Plan (Appendix D). Reestablished 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, nonnative 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 interim 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:

- WPX NE Chaco COM #178H, 179H, and 239H Well Pad and Access Road
- WPX Chaco Trunk 3 Extension 2 Pipeline
- Bannon Energy's Grace Federal 6 001 Plugged and Abandoned Well Pad
- Elm Ridge Exploration's Grace Federal 6 001R Well Pad and Access Road
- Elm Ridge Exploration's Grace Federal 6 002 Well Pad and Access Road
- Elm Ridge Exploration's Marcus A 010 Well Pad and Access Road
- Maintained resource roads
- Active wildlife and livestock grazing occurs in the area. The proposed action is located within the Rancho Largo Allotment Number 5119.

Indirectly, fugitive dust or deposition associated with existing roads, well pads, utility corridors, and public use 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

In the San Juan Basin, invasive plants are frequently found in areas that have been disturbed by surface activities. Invasive species are generally tolerant of disturbed conditions, and often times outcompete native species. These plants may displace native plant communities and lead to the degradation of wildlife habitat. A total of 212 invasive and poisonous weeds have been identified on BLM-managed land (Heil and White 2000). The New Mexico Department of Agriculture (NMDA) has designated certain plants as state-listed noxious weeds and their current management classes for each species. The BLM uses the New Mexico statewide list as the baseline document to establish their primary noxious weed species of concern. Invasive plant species are managed on BLM lands through cooperative agreements between the BLM and the San Juan County Soil and Water Conservation District. Additionally, BLM works closely with other federal and state agencies, management groups, private landowners, and industry cooperators to address invasive plant management by incorporation prevention and control measures on projects proposed on BLM lands (BLM 2014b). During the field surveys of the proposed project areas, no noxious weeds listed by the USDA, NMDA, or BLM-FFO were identified.

3.4.2. Impacts from the Proposed Action

Direct and Indirect Impacts

Disturbed soils from the proposed project may provide an opportunity for the introduction and establishment of non-native invasive species. During construction and operation, noxious weed sources could be introduced to disturbed areas from vehicles, equipment, people, wind, water, or other mechanisms. There is the potential for non-native invasive weeds to establish or spread in the area. WPX would be responsible for monitoring and controlling any non-native invasive weed species within the well-connect pipeline ROW for the life of the project. The re-vegetation of the disturbed area would reduce the potential for non-native invasive weeds to establish.

Cumulative Impacts

The spatial analysis area is the proposed project area and immediately adjacent lands. Existing disturbance within this spatial analysis area is listed in Section 3.3.2 (Upland Vegetation – Impacts from the Proposed Action – Cumulative Impacts).

The proposed project would contribute to surface disturbance and ongoing activity in the spatial analysis area, and may contribute to the increased potential for the establishment and spread of noxious weeds and invasive species within the spatial analysis area.

3.5. Migratory Birds

3.5.1. Affected Environment

Executive Order (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 in similar ecological regions similar to the proposed project area was compiled through a review of existing bird conservation plans, including the following:

- Fish and Wildlife Service (USFWS) Birds of Conservation Concern (BCC)
- 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. Table 5, below, lists those species that have the potential to occur within the proposed project areas; this potential is based on range and habitat type.

Table 5. Migratory Birds with Potential to Occur in Proposed Project Area

Species Name	Habitat Associations
Bendire's thrasher (*Toxostoma bendirei*)	On the Colorado Plateau, open sagebrush with scattered junipers and a sparse or degraded understory. Prefers lower elevations. Avoids riparian areas and arroyos with dense shrub cover.
Brewer's sparrow (*Spizella breweri*)	Closely associated with sagebrush shrublands, preferring dense stands broken up with grassy areas.
Gray vireo (*Vireo vicinior*)	In northern New Mexico, stands of piñon pine and Utah juniper at 5800 to 7200 feet AMSL. Areas are open with a shrub component and mostly bare ground. Antelope bitterbrush, mountain mahogany, Utah serviceberry, and big sagebrush are often present. Broad, flat, or gently sloped canyons in areas with rock outcroppings or near ridge-tops.
Loggerhead shrike (*Lanius ludovicianus*)	Open country interspersed with improved pastures, grasslands, and hayfields. Nests in sagebrush areas, desert scrub areas, and woodland edges.
Mountain bluebird (*Sialia currucoides*)	Open piñon-juniper woodlands, mountain meadows, and sagebrush shrublands; requires larger trees and snags for cavity nesting.
Mourning dove (*Zenaida macroura*)	Open country, scattered trees, and woodland edges. Feeds on ground in grasslands and agricultural fields. Roost in woodlands in the winter. Nests in trees or on ground.
Sage sparrow (*Amphispiza belli*)	Large and contiguous areas of tall and dense sagebrush. Negatively associated with seral mosaics and patchy shrublands and abundance of greasewood.
Sage thrasher (*Oreoscoptes montanus*)	Shrub-steppe dominated by big sagebrush.
Scaled quail (*Callipepla squamata*)	Brushy arroyos, cactus flats, sagebrush or mesquite plains, desert grasslands, plains grasslands, and agricultural areas. Good breeding habitat has a diverse grass composition with varied forbs and scattered shrubs.
Swainson's hawk (*Buteo swainsoni*)	A mixture of grassland, cropland, and shrub vegetation; nests on utility poles and in isolated trees in rangeland. Nest densities higher in agricultural areas.
Vesper sparrow (*Pooecetes gramineus*)	Dry montane meadows, grasslands, prairie, and sagebrush steppe with grass component; nests on ground at base of grass clumps.

3.5.2. Impacts from the Proposed Action

Direct and Indirect Impacts

Within the existing access road ROW and along the proposed well-connect pipeline route all vegetation would be cleared. The proposed project would result in the direct removal of approximately 0.66 acres of Sagebrush/Grass Community with a few piñon-juniper trees. All surface disturbance resulting from the proposed pipeline installation would be reclaimed. 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 avian wildlife could utilize. However, the clearing of vegetation and ground disturbing activities would remove potential habitat. The transformation of the proposed project area to a reseed community could remove potential habitat for some species.

If interim reclamation is successful the Sagebrush/Grass Community 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 deter migratory birds from utilizing the proposed project area and immediately adjacent lands. However, after reclamation activity levels will return to normal levels. For the long term, occasional human and vehicle presence within the vicinity of the proposed project area would decrease as a result of the products being piped from the well location, reducing truck traffic.

It is assumed that habitat loss and fragmentation likely reduce the carrying capacity for wildlife, although the exact level of reduction cannot be quantified (BLM 2003a, 4-29). With the placement of the proposed well-connect pipeline parallel to the existing roadways, additional fragmentation would not occur. Surface disturbance along the edge of the existing roadways would result in 0.66 acres of temporary habitat loss, until vegetation has re-established within the reclaimed area. The proposed well-connect pipeline would not result in long-term disturbance.

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 appropriate mitigation measures will be implemented to avoid or minimize the possibility of the unintentional take of migratory birds. If proposed project activities would occur during the 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.

Cumulative Impacts

The spatial analysis area for wildlife includes the proposed project area and an approximately 2-mile radius around the proposed project area. Within the spatial analysis area, there is existing and proposed disturbance, and the region has been fragmented. Existing and reasonably foreseeable future disturbance within the spatial analysis area includes the following:

- 59 active oil and/or gas well pads
- 21 plugged (reclaimed) oil and/or gas well pads
- 13 proposed oil and/or gas well pads
- Approximately 2.6 miles of existing U.S. Highway 550
- Approximately 7.4 miles of existing County Roads (including County Roads 378, 498, and 499)
- Approximately 45.5 miles of other existing access roads
- Numerous existing and proposed utility ROWs, most of which parallel existing or proposed roads
- Active wildlife and livestock grazing; the spatial analysis area is within a grazing allotment (Rancho Largo, Allotment No. 5119)
- Scattered 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, TUAs, staging areas, and pipeline corridors). The direct and indirect habitat disturbance, fragmentation, and human activities associated with these disturbances could deter migratory birds from utilizing portions of the spatial analysis area. The proposed action would contribute minimally to direct and indirect habitat disturbance in the spatial analysis area.

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.

It was determined that the following BLM-FFO Sensitive Species and SMS species have the potential to occur or are known to occur within the proposed project area:

- American peregrine falcon (BLM SMS): potential foraging habitat available
- Bendire's thrasher (BLM Sensitive): potential foraging and nesting habitat available
- Ferruginous hawk (BLM SMS): potential foraging habitat available
- Golden eagle (BLM SMS): potential foraging habitat available
- Pinyon jay (BLM Sensitive): potential foraging and nesting habitat available
- Spotted bat (BLM Sensitive): potential foraging habitat available
- Townsend's big-eared bat (BLM Sensitive): potential foraging habitat available

3.6.2. Impacts from the Proposed Action

Direct and Indirect Impacts

Bendire's Thrasher and Pinyon Jay

Impacts to Bendire's thrashers and pinyon jays would be similar to those described for migratory birds (Section 3.4 – Migratory Birds).

American peregrine falcon, Ferruginous hawk, and Golden Eagle

The action area includes potential foraging habitat for these species but does not provide suitable nesting habitat. There is similar habitat available in the surrounding area that these SSS raptors could utilize for foraging. Impacts would include the short-term disturbance and modification of up to 0.66 acres of sagebrush shrubland habitat. All disturbed acreage would be reclaimed; these reclaimed areas could be used by raptors for foraging. If reclamation is successful, native vegetation 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).

Construction would cause increased noise levels in the vicinity of the proposed project area. Occasional human and vehicle presence within the vicinity of the proposed project area would increase above present levels. Audial and visual disturbances associated with the proposed project could cause indirect

habitat loss by deterring these raptors from using available habitat adjacent to the proposed project area. 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 appropriate mitigation measures will be implemented to avoid or minimize the possibility of the unintentional take of migratory birds.

Due to the mobility of adult raptors and the lack of appropriate nesting sites for these species in the vicinity of the proposed project area, it is unlikely that the proposed project would result in 1) injury to a raptor, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

Spotted bat and Townsend's big-eared bat

Suitable foraging habitat is present for both of these species within the action area. However, suitable roosting habitat is not present. The lack of roosting habitat reduces the potential for these species to occur in the area. Impacts would include the disturbance and modification of up to 0.66 acres of sagebrush shrubland habitat. All disturbed acreage would be reclaimed; these reclaimed areas could be used by these species for foraging. If reclamation is successful, native vegetation 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).

There is available, similar habitat in the surrounding area that special status wildlife species could utilize. However, the clearing of vegetation and ground disturbing activities would remove potential habitat. The transformation of the proposed project area to reseed communities modify potential habitat for these species in the long term.

Cumulative Impacts

The FFO would continue to manage non-federally listed species according to BLM policies and guidelines, with the goal of contributing to the conservation of these species to reduce the potential for being listed under the ESA of 1973, as amended (USDI/BLM 2003a, 4-111). For reasonably foreseeable actions on federal lands, direct impacts to SSS would be avoided through the BLM's siting criteria. Development on federal and private land would result in the removal or modification of potential SSS habitat. These effects would be related to availability of undisturbed habitat in the area and the amount of disturbance that would occur within the area. The PRMP/FEIS determined that cumulatively up to 5.5 percent (128,000 acres) of vegetation in the planning area could be impacted by oil and gas development (USDI/BLM 2003a, page 4-125). Other reasonably foreseeable actions within the planning area that could impact SSS would include livestock grazing, agriculture, commercial and residential development, mining, wildfire, and vegetation management.

3.7. Public Health and Safety

3.7.1. Affected Environment

Worker safety is regulated under the Occupational Safety and Health Act of 1970, as amended (29 USC 651).

The proposed project area is fairly remote. The nearest town, Bloomfield (population 8112 [U.S. Census Bureau 2010]), is approximately 49 road miles to the north-northwest, and U.S. Highway 550 is located approximately 1.5 miles to the north. There are no designated recreation areas within 1 mile of the proposed project area. There are no residences located within a 1-mile radius of the proposed project area. The closest residence to the proposed project area is approximately 1.17 miles southwest.

The nearest hospital is in Farmington, New Mexico. This hospital is approximately 51 air miles or approximately 70.27 road miles (1.17 miles of dirt road and 69.1 miles of paved road) from the proposed well-connect pipeline.

3.7.2. Impacts from the Proposed Action

Direct and Indirect Impacts

The proposed project would affect transportation. During construction, the proposed project would result in increased traffic on area roads; some vehicles would be hauling heavy equipment. Therefore, there would be an increased potential for traffic accidents. Dust associated with construction activities or travel on dirt access roads may result in poor visibility in the area. The increased use of dirt access roads during muddy conditions may worsen the roads' conditions. Following construction, traffic levels would be similar to or less than current levels; long-term effects on transportation would be positive due to the reduction of truck traffic from the piping of products from the location to a gathering system.

During construction, drilling, and maintenance activities, the operation of heavy equipment poses potential safety concerns. During the operation of the proposed well-connect pipeline, facility failure (such as pipeline ruptures) could represent a potential danger to the public.

Cumulative Impacts

The general BLM-FFO region has been developed by the oil and gas industry for over six decades, which contributes to public health and safety concerns in the area.

Transportation issues are a primary safety concern. Vehicles associated with the oil and gas industry utilize the developed highway and county road systems. In addition, the oil and gas industry constructs and utilizes dirt access roads in the area. These roads, most of which are accessible by the public, are often hazardous, particularly during and following periods of inclement weather.

Additional safety concerns in the region include wildfire; oil and gas facility leakage or rupture; moving equipment (such as pump jacks); oil and gas explosions; and the handling, storage, and disposal of wastes, chemicals, or condensate.

The proposed project would contribute minimally to the cumulative public safety impacts in the region.

3.8. Environmental Justice

3.8.1. Affected Environment

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, requires that federal agencies identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations.

Environmental justice refers to the fair treatment and meaningful involvement of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, programs, and policies. It focuses on environmental hazards and human health to avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations.

Guidance on environmental justice terminology developed by the President's Council on Environmental Quality (CEQ 1997) is discussed below.

- Low-income population. A low-income population is determined based on annual statistical poverty thresholds developed by the US Census Bureau. In 2012, poverty level is based on total income of $11,720 for an individual and $23,283 for a family of four (US Census Bureau 2012a). A low-income

community may include either a group of individuals living in geographic proximity to one another or dispersed individuals, such as migrant workers or Native Americans.

- Minority. Minorities are individuals who are members of the following population groups: American Indian, Alaskan Native, Asian, Pacific Islander, Black, or Hispanic.
- Minority population area. A minority population area is so defined if either the aggregate population of all minority groups combined exceeds 50 percent of the total population in the area or if the percentage of the population in the area comprising all minority groups is meaningfully greater than the minority population percentage in the broader region. Like a low-income population, a minority population may include either individuals living in geographic proximity to one another or dispersed individuals.
- Comparison population. For the purpose of identifying a minority population or a low-income population concentration, the comparison population used in this study is the state of New Mexico as a whole

Low-income Populations

Income and poverty data estimates for study area counties from the US Census Small Area Poverty Estimates model indicate that the percent of the population living below the poverty level in the socioeconomic study area as a whole is slightly above that of the state (21.3 percent and 20.6 percent), but it is much higher than the national average of 12.1 percent (Table 1). Poverty levels ranged from 37.7 percent in McKinley County to 13.7 percent in San Juan County. Only that of Sandoval County was below the state average.

Table 6. Study Area County Population in Poverty (2002-2012)

	McKinley County	Rio Arriba County	Sandoval County	San Juan County	Study Area Total	New Mexico	United States
Percent of Population in Poverty 2002	21,766	7,165	19,934	22,152	71,017	421,123	34,569,951
	30.2%	17.7%	11.1%	18.2%	21.3%	20.6%	12.1%
Percent of Population in Poverty 2012	27,296	8,806	18,502	25,802	80,406	327,444	48,760,123
	37.7%	22.0%	13.7%	20.3%	21.5%	17.7%	15.9%
Median Household Income 2002	$25,197	$30,557	$45,213	$34,329	N/A	$34,827	$45,409
Median Household Income 2012	$29,821	$36,900	$57,376	$45,901	N/ A	$42,828	$51,371
Classified as Low Income Population in 2012 based on CEQ guidelines?	No	No	No	No	No	NA	NA
Source: US Census Bureau 2013							

Similarly, estimates from 2012 indicate that Sandoval and San Juan Counties had household median incomes ($57,376 and $45,901) that were above the state level of $42,828. McKinley County ($29,821) and Rio Arriba County ($36,900) were below that of the state in 2012 (Table 2). While no area communities meet the CEQ definition of a low-income population area (50 percent or higher), the highest poverty rates were seen in Bloomfield (29 percent), Espanola (26.3 percent), and Bernalillo (24.1 percent).

Table 7. Study Area Key Community Race/Ethnicity and Poverty Data

Community	% Population Racial or Ethnic Minority	Classified as Minority Population based on CEQ?	% of Individuals Below Poverty	Classified as Low-income Population based on CEQ?
Aztec	36.4%	No	14.4%	No
Bernalillo	78.8%	Yes	24.1%	No
Bloomfield	55.8%	Yes	29.0%	No

Table 7. Study Area Key Community Race/Ethnicity and Poverty Data

Community	% Population Racial or Ethnic Minority	Classified as Minority Population based on CEQ?	% of Individuals Below Poverty	Classified as Low-income Population based on CEQ?
Espanola	91.6%	Yes	26.3%	No
Farmington	48.8%	No	15.5%	No
Gallup	76.9%	Yes	20.9%	No
Rio Rancho	46.7%	No	9.8%	No

Source: US Census Bureau 2012b
Note: American Community Survey estimates are based on data collected over a 5-year time period. The estimates represent the average characteristics of populations between January 2008 and December 2012 and do not represent a single point in time.

Census Tracts are geographic regions within the United States that are defined by the US Census Bureau in order to track changes in a population over time. Census Tracts are based on population sizes and not geographic areas. The average population of a Census Tracts is about 4,000 people, so rural areas that are sparsely populated may have very large Census Tracts while densely populated urban areas may have very small Census Tracts.

When broken down by Census Tract, 3 out of 87 tracts in the socioeconomic study area have greater than 50 percent of individuals living below the poverty line: Census Track 9440 in eastern McKinley County had an individual poverty rate of 54.6 percent; Census Tract 9405 in southwestern McKinley County had an individual poverty rate of 59.4 percent; and Census Tract 9409 in northwestern Sandoval County had an individual poverty rate of 51.9 percent (US Census Bureau 2012b). These 3 Census Tracts are all relatively large, indicating a sparsely populated, rural area.

Minority Populations

Based on 2008-2012 data, minorities made up 59.5 percent of the population in New Mexico, compared to 36.3 percent in the United States as a whole (Table 3). The proportion of minorities in the socioeconomic study area (65.3 percent) substantially exceeded the United States and is slightly higher than the state average. At the county level, the population ranged from 89.7 percent minority in McKinley County to 52.8 percent in Sandoval County. Within relevant tribal nations, Native Americans represented the vast majority of the population. The largest minority groups were Hispanics/Latinos in Rio Arriba and Sandoval Counties and Native Americans in McKinley and San Juan Counties.

Table 8. Study Area County Population by Race/Ethnicity (2008-2012)

Population	McKinley County	Rio Arriba County	Sandoval	San Juan	Study Area	New Mexico	United States	Jicarilla Apache Nation	Navaho Nation	Ute Mountain Nation
Hispanic or Latino ethnicity of any race	9,744	28,714	46,334	24,496	109,288	952,569	50,545,275	382	2,958	99
	13.6%	71.4%	35.3%	19%	29%	46.3%	16.4%	11.6%	1.7%	6.0%
White alone	7,413	5,370	61,977	54,218	128,978	831,543	196,903,968	74	3,762	47
	10.3%	28.6%	47.2%	42.2%	34.67%	40.5%	63.7%	2.3%	2.2%	2.9%
Black or African American alone	353	149	2,704	794	4000	35,586	37,786,591	0	250	5
	0.5%	0.4%	2.1%	0.6%	1.08%	1.7%	12.2%	0%	0.1%	0.3%
American Indian or Alaskan Native alone	52,358	5,629	15,964	46,676	120,627	176,766	2,050,766	2,692	162,920	1,429
	72.8%	14.0%	12.2%	36.3%	32.43%	8.6%	0.7%	82.0%	94.3%	87.0%
Asian alone	506	173	1,685	464	2828	25,411	14,692,794	73	834	14

Table 8. Study Area County Population by Race/Ethnicity (2008-2012)

Population	McKinley County	Rio Arriba County	Sandoval	San Juan	Study Area	New Mexico	United States	Jicarilla Apache Nation	Navaho Nation	Ute Mountain Nation
	0.7%	0.4%	1.3%	0.4%	0.76%	1.2%	4.8%	2.2%	0.5%	0.9%
Native Hawaiian and Other Pacific Islander alone	38	7	100	72	217	989	480,063	0	209	0
	0.1%	0%	0.1%	0.1%	0.06%	<.01%	0.2%	0%	0.1%	0%
Some Other Race	7	22	437	84	550	3,623	616,191	0	102	0
	<.01%	0.1%	0.3%	0.1%	0.15%	0.2%	0.2%	0%	0.1%	0%
Two or more Races	1,469	137	2,101	1,796	5,503	28,800	6,063,063	62	1,660	49
	2.0%	0.3%	1.6%	1.4%	1.48%	1.4%	2.0%	1.9%	1.0%	3.0%
Classified as Minority Population based on CEQ guidelines?	Yes	Yes	Yes	Yes		Yes	NA	Yes	Yes	Yes

Source: US Census Bureau 2012b
Note: American Community Survey estimates are based on data collected over a 5-year time period. The estimates represent the average characteristics of populations between January 2008 and December 2012 and do not represent a single point in time

Based on the CEQ definition of a minority population area (minority residents exceed 50 percent of all residents), Bernalillo, Bloomfield, Espanola, and Gallup all are considered minority communities.

When examined at the Census Tract level, there are 24 out of 87 tracts that have a minority population greater than 50 percent. These range from Census Tract 6.1 located just north of the city of Aztec with a minority population of 80.5 percent to Census Tract 107.17 located north of the city of Rio Rancho with a minority population of 50.2 percent (US Census Bureau 2012b). These Census Tracts are relatively small and are based around the city of Rio Rancho and the Aztec/Farmington/Bloomfield area.

Native American Populations

Data in Table 3 account for a substantial portion of the study area population in some areas, notably McKinley and San Juan Counties, where the population is 72.8 and 36.3 percent American Indian respectively. Three tribal governments have reservations within the planning area: the Jicarilla Apache Nation, the Navajo Nation, and the Ute Mountain Nation (Table 4). The Southern Ute Nation has lands just north of the planning area in the state of Colorado, but none within the planning area. Almost one half of the planning area is tribal lands. Each tribe maintains a general concern for protection of and access to areas of traditional and religious importance, and the welfare of plants, animals, air, landforms, and water on reservation and public lands. Policies established in 2006 by the BLM and US Forest Service, in coordination with federal tribes, ensure access by traditional native practitioners to area plants. The policy also ensures that management of these plants promotes ecosystem health for public lands. The BLM is encouraged to support and incorporate into their planning traditional native and native practitioner plant-gathering for traditional use (Boshell 2010).

Table 9. Tribal Nations in the Planning Area

Tribe	Acres in Planning Area	General Location
Jicarilla Apache Nation	739,600	The majority of the Jicarilla Apache Nation is located in western Rio Arriba County, but within the eastern portion of the planning area
Navajo Nation	860,900	A portion of the Navaho Nation extends into western San Juan County and into the western portion of the planning area
Ute Mountain Nation	103,500	A portion of the Ute Mountain Nation extends into the northern portion of San Juan County, just east of the Navajo Nation, and into the northern portion of the planning area
Unknown	196,300	Lands located in the southern portion of the planning area [Note to BLM: this is due to inconsistencies between US Census Bureau tribal areas dataset and BLM land status dataset.]
Source: BLM GIS 2014, US Census Bureau 2014		

3.8.2. Impacts from Alternative A (the Proposed Action)

Direct and Indirect Impacts

As noted in the PRMP/FEIS, most activities, including oil and gas development on federal land in the San Juan Basin occur without influence of demographic or income values. They are primarily the response of various resource values and are balanced for overall public benefit. San Juan County, along with the other counties that make up the larger development area, has a high proportion of minority populations compared to the state and national percentages. San Juan County has a distinctly high percentage of American Indians, while Rio Arriba has a large Hispanic population. The poverty levels for all counties, except Sandoval County were higher than the state and national level. As such, the potential exists for minority and low-income populations to be affected by the proposed action.

Specific issues of concern outlined in the PRMP/FEIS include the potential for economic impacts (such as job losses or increases), potential for land use impacts (as outlined in previous sections), and the potential for conditions that pose a public health or safety risk. The installation of the well-connect pipeline would allow WPX to develop their leases and provide additional natural gas and oil for the national energy market. This would generate federal and state tax revenues as well as revenue for WPX, its contractors, and additional jobs, royalties, and revenues to local economies. The additional jobs and economic activity in the region from oil and gas development have the potential to benefit local communities and residents and is considered a positive effect. The proposed well-connect pipelines would be part of a larger scale gathering system for produced water, oil and gas products in the region. This gathering system would reduce truck traffic in the area. Potential land use impacts and public health and safety risks have been addressed in both previous sections of this document and/or the PRMP/FEIS. Project specific design features and best management practices (Section 2.1.2), as well as COAs attached to the approved APDs, help to reduce adverse impacts to the surrounding communities as they relate to land use and public health and safety. See PRMP/FEIS for further discussion of Environmental Justice (BLM 2003a).

Cumulative Impacts

The proposed action would contribute to the effects of the local economy in the form of increased natural gas production, new jobs and increased revenues. Any additional well development and production in the area would result in incremental impacts to local economy. The energy industry is subject to boom and bust cycles. However, the continued development of these resources still represents a desirable economic engine. With the development of these resources being concentrated in Rio Arriba and San Juan counties that both have disproportionately minority population, benefits from growth in resource development both federal and non-federal interests would provide jobs and therefore benefit these groups

(BLM 2003a, 4-129). The proposed well-connect pipelines would result in an incremental positive impact from the reduction of truck traffic in the area and its impacts to local communities in the immediate area.

4. SUPPORTING INFORMATION

4.1. Tribes, Individuals, Organizations, or Agencies Consulted

4.2. List of Preparers

- Steven Fuller, Archaeologist –Ty Swirin, Noxious Weed Coordinator – BLM-FFO
- Roger Herrera, Environmental Protection Specialist - BLM-FFO
- John Kendall, Wildlife Management Biologist – BLM-FFO
- Marcella Martinez, Planning and Environmental Specialist – BLM-FFO
- Mindy Paulek, Biologist – EIS, LLC.
- Sarah Scott, Natural Resource Specialist – BLM-FFO
- Jeff Tafoya, Rangeland Management Specialist – BLM-FFO
- Craig Willems, Environmental Protection Specialist – BLM-FFO
- Sheila Williams, District Botanist – BLM-FFO

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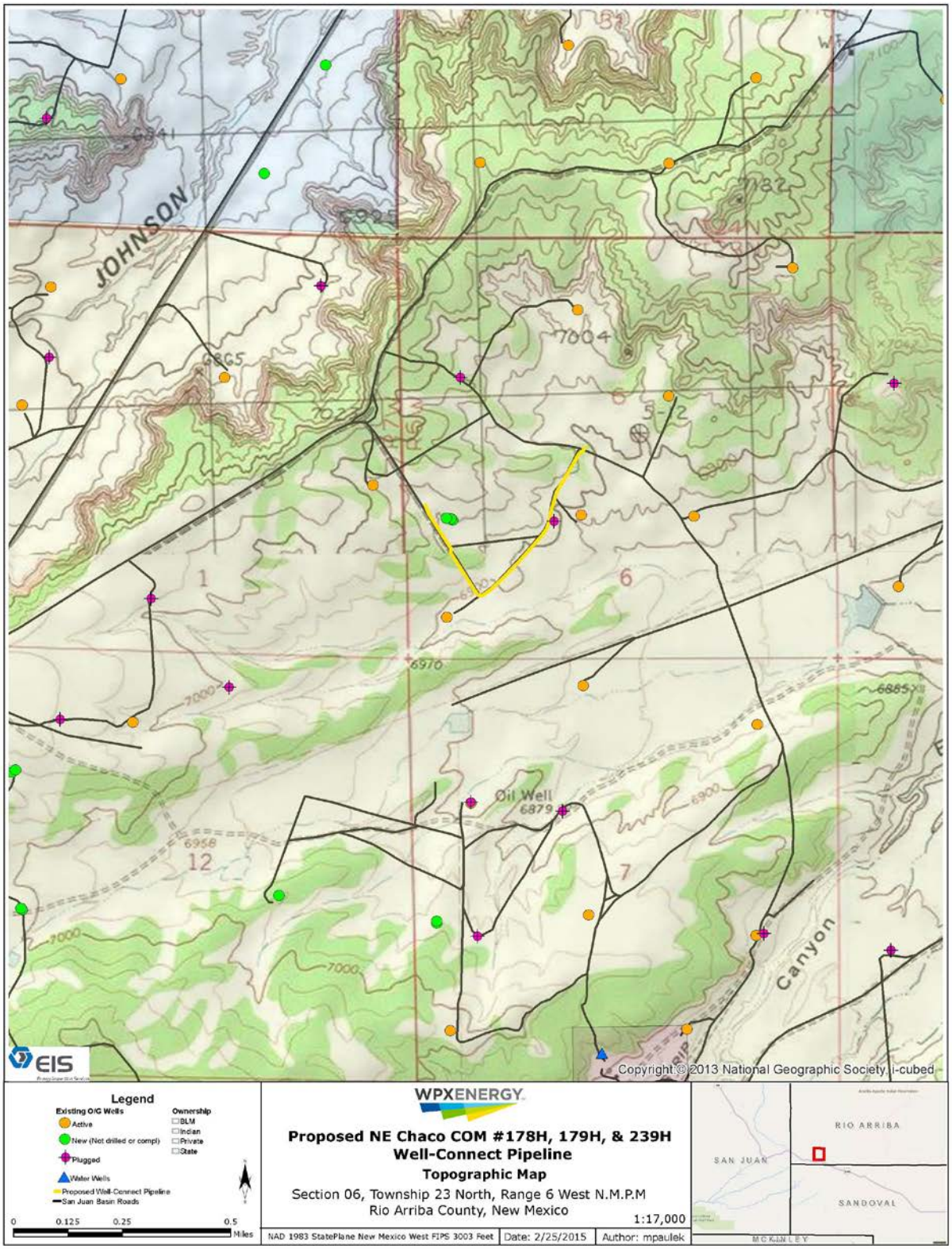
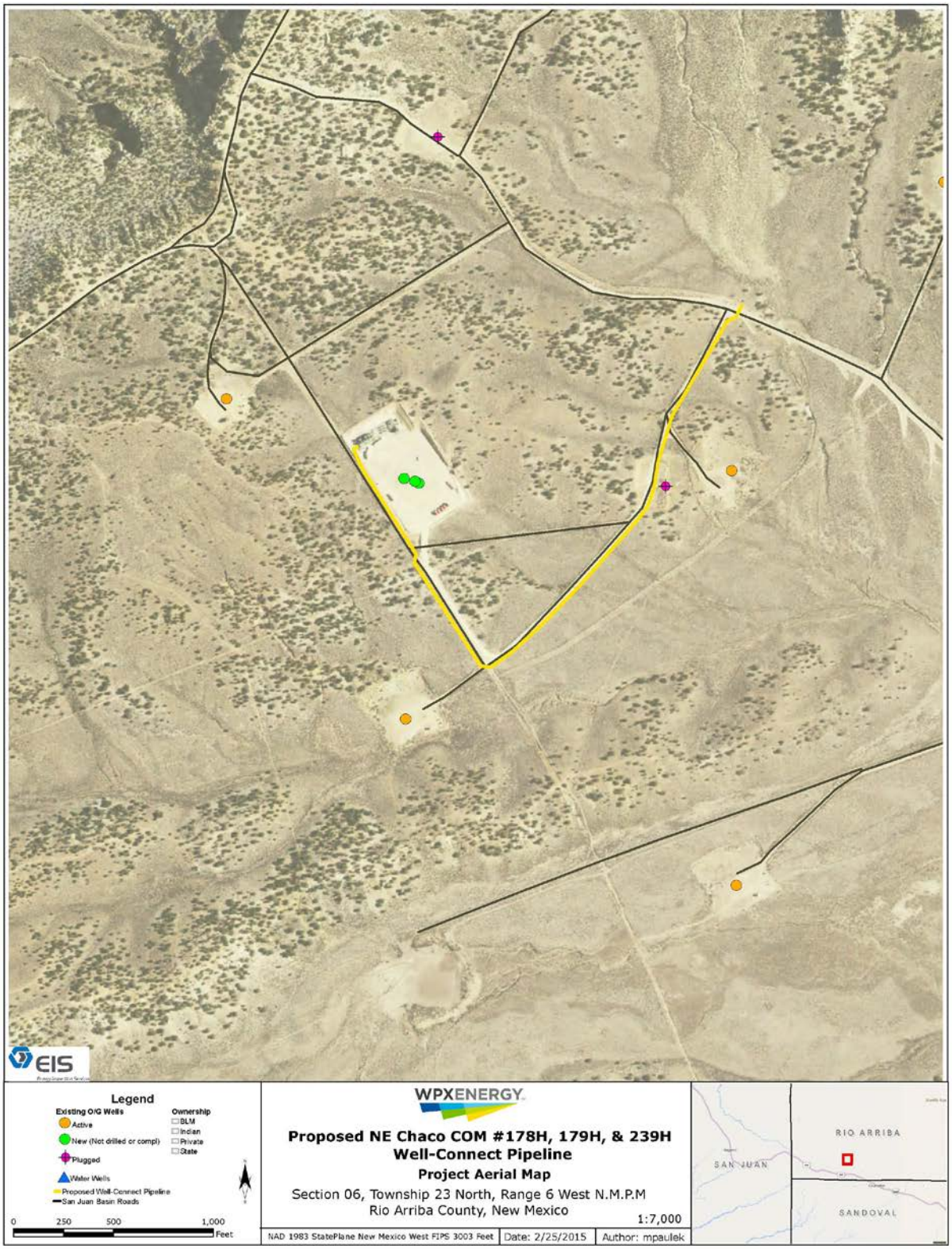
MAPS

1.1. Proposed Project Area (Topographic Base Map)

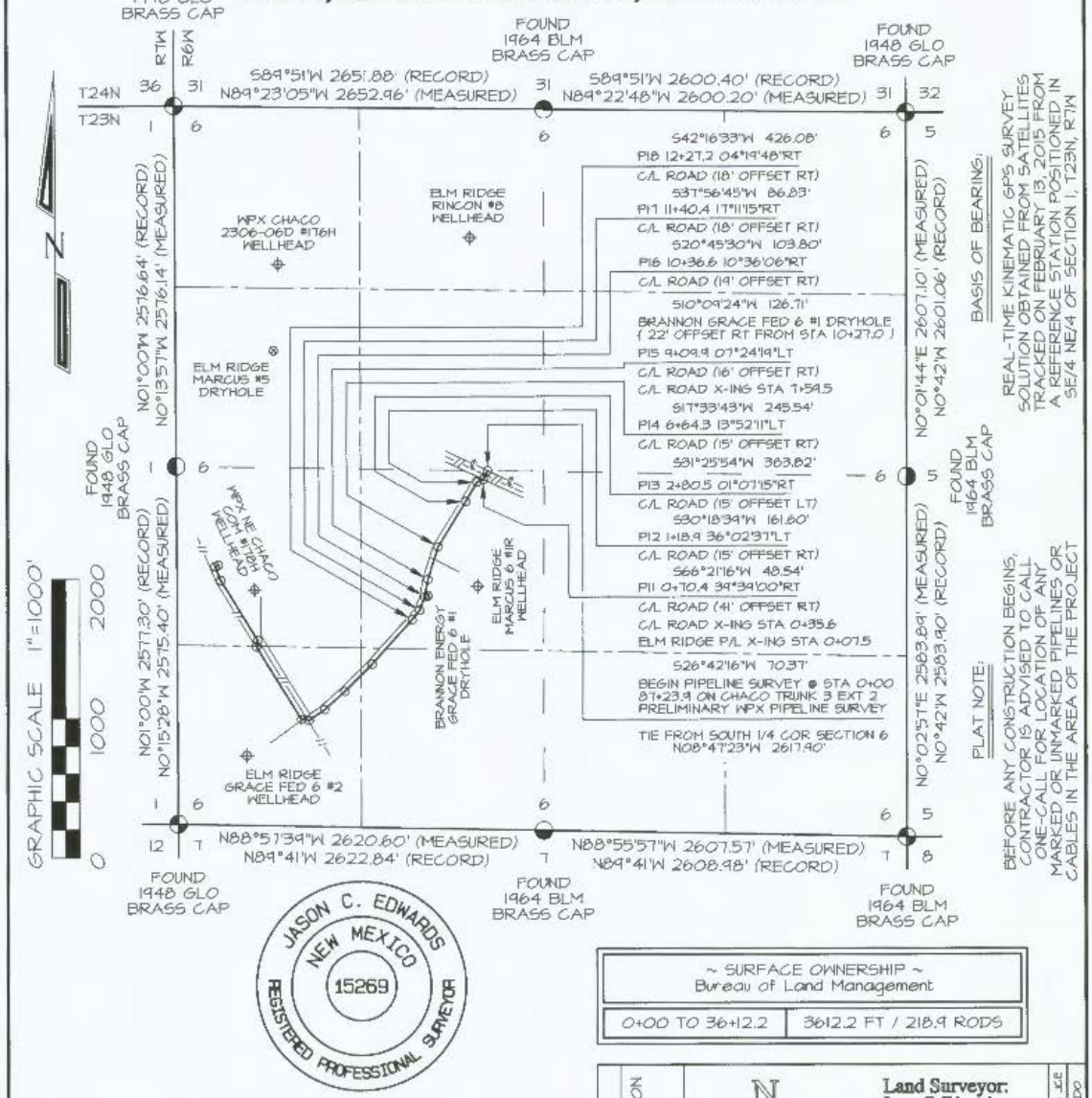


1.2. Proposed Project Area (Aerial Imagery Base Map)



PLATS

WPX ENERGY PRODUCTION, LLC NE CHACO COM #178H
PROPOSED PIPELINE SURVEY LOCATED IN THE SE/4 NW/4 & SW/4 OF SECTION 6, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 36+12.2	3612.2 FT / 218.9 RODS

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: February 23, 2015

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
WPX ENERGY PRODUCTION
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AZTEC, NM 87410

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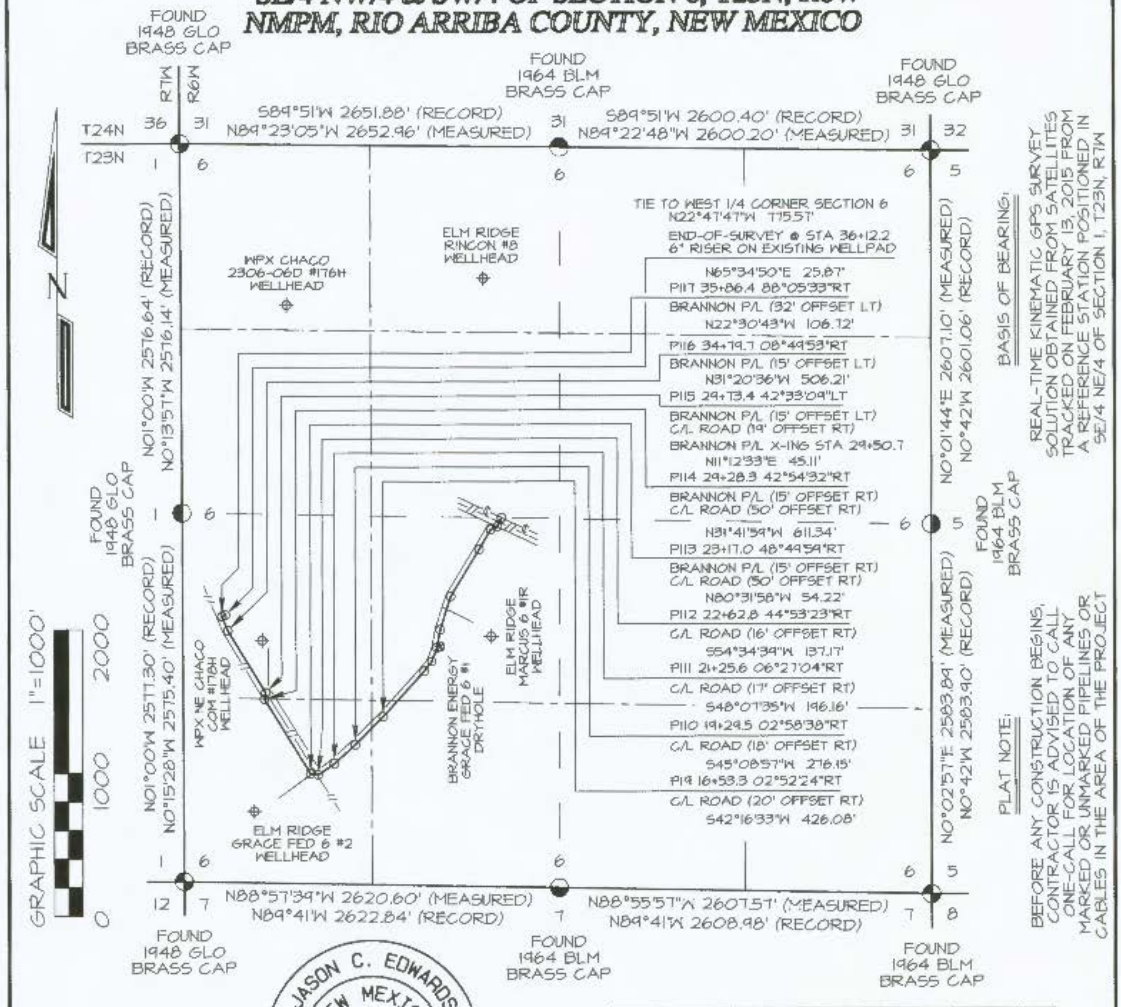
SHEET 2 OF 3 | CHECKED BY: JCE
FILENAME: 23961.PG3 | DRAWN BY: EDO

WPX ENERGY PRODUCTION, LLC NE CHACO COM #178H
PROPOSED PIPELINE SURVEY LOCATED IN THE SE/4 NW/4 & SW/4 OF SECTION 6, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



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SHEET 3 OF 3
FILENAME: 2366LP04

SURFACE RECLAMATION PLAN