UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Farmington District
Farmington Field Office
6251 N College Blvd., Ste. A
Farmington, NM 87402

Finding of No Significant Impact
Energen Resources Corp.
CHACO 2308-3 Nos. 1H, 2H
NEPA No. DOI-BLM-NM-FO10-2015-0138

FINDING OF NO SIGNIFICANT IMPACT

I have determined that the proposed action, as described in Environmental Assessment (EA) NM-FO10-2015-0138 will not have any significant impact, individually or cumulatively, on the quality of the human environment. Because there would not be any significant impact, an Environmental Impact Statement is not required.

In making this determination, I considered the following factors:

Context

The Farmington Field Office (FFO) is located in northwestern New Mexico. The field office boundaries include approximately 7,800,000 acres; 1.4 million surface acres and an additional 1 million acres of mineral estate are managed by the BLM. The distribution of BLM-managed lands is fairly well consolidated in the north and becomes increasingly mingled with Tribal lands to the south. BLM-managed lands abut the Navajo Reservation to the west and south, Jicarilla Apache Nation Reservation to the east, and the Ute Mountain Reservation and Southern Ute Indian Reservation to the north. Aztec Ruins National Monument and Chaco Culture National Historical Park, managed by the National Park Service, lie within the field office boundaries. The BLM manages approximately 18% of lands within a 10 mile radius of Chaco Culture National Historical Park.

The FFO encompasses the New Mexico portion of the San Juan Basin. The San Juan Basin and surrounding areas have been occupied by varied cultures since the Paleo Indian period (circa 10,000 BC). The San Juan Basin and Four Comers area have one of the most extensive prehistoric and protohistoric occupations in the United States. The most commonly known archaeological resources are the Anasazi structures at Chaco Culture National Historical Park, Mesa Verde National Park, and other National Park Service sites. Scattered across BLM-managed lands are similar, but smaller structures, which were probably related to these larger sites. Twenty-three Chacoan outliers are known to exist within the FFO. Each contains at least one Chacoan structure and most have associated communities, prehistoric roads, and great kivas along with features such as herraduras and special use areas. The FFO contains an extensive system of finely engineered roads radiating out from Chaco Canyon and extending a considerable distance to outlying sites through the San Juan Basin and beyond. These roads are remarkably straight and carefully constructed. The most notable is the Great North Road, which starts at Chaco Canyon and run north to the Aztec Ruins.

Located within the boundary of the FFO is much of Dinétah, the ancestral homeland to the Navajo. Here the Navajo constructed forked-stick hogans, shades, sweat lodges, and other structures over a several hundred year span. During a short period between 1680 and the mid-1700s, pueblitos were constructed, often associated with other structures. Although not firmly dated, extensive Navajo pictograph and petroglyph sites were painted, etched, pecked, or ground onto the sandstone cliffs of the canyons of

Dinétah. Most are believed to be ceremonial art which is no longer traditionally executed in a permanent form.

Native American Traditional and Sacred Areas are known to exist across the FFO. Many are associated with narrative accounts of origin or other traditional stories. Most of the identified sacred areas are associated with the Navajo culture. These places are still important in Navajo ceremonies and daily activities.

Historic Hispanic or Spanish and Anglo sites within the San Juan Basin primarily date from the late 1800s to the present. Although there are some early Spanish land grants in the southern portion of the FFO, most historic sites located on public lands are either Hispanic or Anglo homesteads with associated structures from the late 1800s and early 1900s. Associated with many clusters of homesteads were a school house and often a church which was visited every few months by a priest.

Cultural resource inventories have been conducted throughout the FFO for project undertakings, management studies, and scientific inquiries. As of April 2014, approximately 760,000 acres of the 7,800,000 acres in the FFO boundaries have been inventoried. Over 46,000 sites have been identified ranging from small artifacts to the 800-room structures in Chaco Canyon. Many of these sites are listed on the National Register of Historic Places and Chaco Culture National Historical Park along with several of the Chacoan sites which have been placed on the World Heritage List. The FFO manages 79 Areas of Critical Environmental Concern (ACECs) for relevant and important cultural values, including five World Heritage Sites.

The San Juan Basin is an important area for mammalian and reptilian fossils. A variety of paleontological resources exist in the FFO including animal fossils, fossil leaves, palynomorphs, petrified wood, and trace fossils occurring in the Triassic, Jurassic, Cretaceous, and Tertiary rocks. Dinosaur and other fossils have made significant contribution to the scientific record have been found and excavated in the FFO. Paleontolgical resources are present in the Bisti De-Na-Zin Wilderness Area, Ah-Shi-Sle-Pa Wilderness Study Area, Fossil Forest Research Natural Area, and seven fossil areas identified in the 2003 Farmington Resource Management Plan.

The San Juan Basin is one of the largest natural gas fields in the nation and has been under development for more than 60 years. Oil was discovered by accident in the Seven Lakes area of McKinley County in 1911. Natural gas was discovered near Aztec, New Mexico, in 1920-1921 with oil of commercial quantity discovered near the Hogback in 1922 (Barnes 1951). Several small pipelines were built to carry the oil and gas from these discoveries to Aztec and Farmington. Development began in earnest in the late 1940s and early 1950s as the demand for natural gas increased. The FFO manages 2,765 active oil and gas leases in the San Juan Basin consisting of 2.1 million acres. Leasing began in the mid-1930s and accelerated in the late 1940s. By 1950, over 1 million acres were under lease.

In 1951, El Paso Natural Gas completed the first interstate pipeline out of the San Juan Basin to California. That same year, oil was discovered in the Mancos Shale in Dogie Canyon (Barnes 1951). Since that time, over 30,000 oil and gas wells have been drilled in the San Juan Basin with approximately 16,000 associated rights-of-way. Approximately 23,000 wells are currently producing. Since Stanolind Oil introduced hydraulic fracturing in 1949, nearly every well in the San Juan Basin has been fracture stimulated.

Intensity

1. The activities described in the proposed action do not include any significant beneficial or adverse impacts (40 CFR 1508.27(b)(1)). Per 40 CFR 1500.1(b), the EA concentrated on issues that are truly significant to the action in question, rather than amassing needless detail. Issues have a cause and effect relationship with the proposed action or alternatives; are within the scope of the analysis; have not been decided by law, regulation, or previous decision; and are amendable to scientific analysis rather than conjecture (BLM 2008, page 40). The following issues were identified related to the proposed action.

- How would the proposed project impact air resources?

- How would the proposed project impact surface water resources?
- Where will water for drilling be sourced from and how much water will be needed?
- How would vegetation-clearing, project activities, and final reclamation impact soils?
- How would vegetation-clearing, project activities, and final reclamation associated with the project impact upland vegetation?
- How would the proposed project impact noxious weeds?
- How would the proposed project impact rangeland resources, grazing livestock and the grazing permittee(s)?
- How would vegetation-clearing, project activities, and final reclamation impact wildlife, including migratory birds?
- How would vegetation-clearing, project activities, and final reclamation impact the following BLM Special Status Species: American peregrine falcon *(Falco peregrinus anatum*), prairie falcon (*Falco mexicanus*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), yellow-billed cuckoo *(Coccyzus americanus*), mountain plover *(Charadrius montanus*), western burrowing owl (*Athene cunicularia*), Aztec gilia (*Aliciella formosa*) and Brack's hardwall cactus (*Sclerocactus cloveriae* var*. brackii*)?
- How surface-disturbing activities would associate with the proposed project impact cultural resources?
- How would the proposed project impact paleontological resources?
- How would the proposed project impact environmental justice?
- How would the proposed project impact public health and safety?

The EA includes a description of the expected environmental consequences of the proposed activities for those issues in Chapter 3.

2. The activities included in the proposed action would not significantly affect public health or safety (40 CFR 1508.27(b)(2)). The following design features have been included in the proposed action to address any impacts to public health and safety. 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 and drilling, traffic levels would be similar to 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.

The proposed project area is fairly remote. The nearest town, Bloomfield (population 8112 [U.S. Census Bureau 2010]), is approximately 54 road miles to the north-northwest, and U.S. Highway 550 is located approximately 3.7 miles to the south. 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 2.0 miles southwest.

Air quality may effect health and safety. Air quality for San Juan County and for the State of New Mexico is described earlier in Air Resources section 3.2.1. of the EA (page(s) 24 thru 30.

Changes to air quality from the proposed action are expected to be relatively minor, as discussed in Section 3.2 of the EA. It is unclear whether these air pollutants would affect the health of nearby residents or workers closest to the well. Workers in closest proximity to the drilling activity use engineering controls and protective gear to minimize risk of effects.

Cumulative impacts: The emissions calculator estimated that there could be very small direct and indirect increases in several criteria pollutants, HAPs, and GHGs as a result of implementing the Proposed Action

(Alternative B). The very small increase in emissions that could result 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 Action (Alternative B) 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 (USDI BLM 2014) 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. The proposed activities would not significantly affect any unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas (40 CFR 1508.27(b)(3)). Unique characteristics are generally limited to those that have been identified through the land use planning process or other legislative, regulatory or planning processes (BLM 2008, page 71). The FFO does not contain any prime and unique farmlands, suitable or designated wild and scenic rivers, or designated caves.

Table 1 discloses the distance of the proposed activities to wetlands delineated by the Army Corps of Engineers. Table 2 discloses the distance of the proposed activities to National Park Service units and Congressionally designated areas. The proposed action and alternatives are not located within an Area of Critical Environmental Concern. Impacts to historic or cultural resources are described in the Cultural Resources section of the EA and discussed further under item 8.

Table 1. Distance of the Proposed Activities from Wetlands

Delineated Wetlands	Distance from Proposed Activities
Bancos	56 – 57 miles
Blanco	40– 41 miles
Bloomfield	43 – 44 miles
Cutter Canyon	34– 35 miles
Carrizo Oxbow	30 – 33` miles
Desert Hills	48– 49 miles
Valdez	43 – 44 miles

Table 2. Distance of the Proposed Activities from Park Lands and Ecologically Critical Areas

Park Land or Ecologically Critical Area	Distance from Proposed Activities
Ah-Shi-Sle-Pah Wilderness Study Area	16 – 17 miles
Aztec Ruins National Monument	54 - 55 miles
Bisti De-Na-Zin Wilderness Area	22 – 23 miles
Chaco Culture National Historical Park	21 – 22 miles
Fossil Forest Research Natural Area	28 – 29 miles

4. The activities described in the proposed action do not involve effects on the human environment that are likely to be highly controversial (40 CFR 1508.27(b)(4)). Controversy in this context means disagreement about the nature of the effects, not expressions of opposition to the proposed action or preference among the alternatives (BLM 2008, page 71). Oil and gas development has occurred in the San Juan Basin for more than 60 years. While there may be controversy over the appropriateness of oil and gas development, there is not a high level of controversy or substantial scientific dispute over the impacts of that activity. The impacts of the proposed activities are described in Chapter 3 of the EA.

5. The activities described in the proposed action do not involve effects that are highly uncertain or involve unique or unknown risks (40 CFR 1508.27(b)(5)). As described under Context, oil and gas development has occurred in the San Juan Basin since the late 1940s and early 1950s. The field office has permitted over 30,000 wells and 16,000 rights-of-way. Hydraulic fracturing has occurred on nearly every well in the San Juan Basin since the 1950s. As such, the FFO has decades of experience and is knowledgeable about the impacts and risks associated with the proposed activities.

6. My decision to implement these activities does not establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration (40 CFR 1508.27(b)(6)). Approval of these activities in no way assures approval of any future activities.

7. The effects of the proposed activities would not be significant, individually or cumulatively, when considered with the effects of other actions (40 CFR 1508.27(b)(7)). Direct, indirect, and cumulative impacts are described in Chapter 3 of the EA.

8. I have determined that the activities described in the proposed action will not adversely affect or cause loss or destruction of scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places (40 CFR 1508.27(b)(8)). The proposed activities are not located in an ACEC containing relevant and important cultural values. Cultural resource surveys). Cultural resource surveys were completed (BLM Report Numbers 2015 (II) 008F). Cultural resources were identified within the project areas. The identified sites will be avoided in all cases and monitoring and installing site protection fencing will be required during construction, drilling and reclamation as discussed in the Cultural Resources section 3.10. (page(s) 64 thru 66 of EA.

The BLM fulfills its responsibilities under the National Historic Preservation Act (NHPA) through a number of agreements. The National Programmatic Agreement (NPA; 2012) between the BLM, Advisory Council on Historic Preservation (ACHP), and the National Council of State Historic Preservation Officers (NCSHPO) allows the agency to fulfill its NHPA responsibilities according to the provisions of the NPA in lieu of 36 CFR 800.3 through 800.7 regulations. The NPA, which applies to all BLM activities below specified thresholds, provides among other things, regulatory relief in many instances from the requirement for case-by-case review by State Historic Preservation Officers (SHPOs) and the ACHP, in exchange for managers' maintenance of appropriate staff capability and observance of internal BLM standards as set out in the 8100 Manual series.

The New Mexico BLM has a two-party protocol with the New Mexico SHPO (2014) specifically encouraged by the NPA. This protocol details how the New Mexico BLM and SHPO will regulate their relationship and consult. Specifically, this document outlines among other things, how and when consultation will be conducted between the BLM, SHPO, Tribes, and the public. The protocol also outlines when case-by-case SHPO consultation is or is not required for specific undertakings and the procedures for evaluating the effects of common types of undertakings and resolving adverse effects to historic properties. These common types of undertakings regularly include the common actions undertaken in the BLM FFO.

9. The proposed activities are not likely to adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (40 CFR 1508.27(b)(9)).

Impacts to migratory birds would be greater if construction occurs during the breeding season, which is May 15th through July 31st. Construction during this period could result in nest destruction or may cause nest abandonment in adjacent areas. Pre-construction nest surveys would be conducted to identify any active nests should construction occur between May 15th and July 31st (see **SECTION 2.2.11**).

Some birds would be attracted to the vertical and complex structures at the production site, including warm equipment, though composition of species would differ from those occupying the area prior to disturbances. Resultantly, migratory birds could come into contact with chemicals or fluids stored on-site. Open pits would be netted and vent caps placed on all open pipes to prevent bird entry and nesting. Any spills would be promptly cleaned up. Although individual migratory birds could be impacted by the Proposed Action, no population level impacts are expected.

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Direct impacts would include the disturbance to 17.16 acres of previously undisturbed habitat for the identified species. The analysis area provides potential foraging habitat for golden eagle, ferruginous hawk, American peregrine falcon and prairie falcon. No potential nesting habitat for these species would be removed or modified by the Proposed Action. No active or abandoned prairie dog burrows were observed within the project area, therefore no suitable western burrowing owl nesting habitat is present. The erection of power poles in the project area under the Proposed Action, would improve the availability of high raptor perches in the area. The poles and lines may also be used by songbirds for perching. The removal of about 123 juniper and piñon trees of various ages and sizes by the Proposed Action would result in a long term loss of potential perch sites. This loss of perch habitat is not expected to adversely affect the foraging abilities of these raptor species, given the abundance of suitable sites in the surrounding area. After reclamation, there would be a long term change in vegetation density and composition. This could affect the prey base for these raptors. Additional impacts may include avoidance of the analysis area by these raptor species during construction, drilling and operation phases due to habitat disturbance, human and vehicle presence, and associated noise

The analysis area provides suitable foraging and nesting habitat for mountain plover, pinyon jay, and Bendire's thrasher. Impacts to these species are consistent with those identified for migratory birds; avoidance of the analysis area during project activities due to habitat disturbance, human and vehicle presence, and associated noise. After reclamation, there would be a long term change in vegetation density and composition. This would result in long-term alteration in these species occupation patterns.

The proposed action area is within the BLM/FFO designated potential habitat area for Brack's hardwall cactus (*Sclerocactus cloveriae* var. *brackii*) and Aztec gilia *(Aliciella formosa*).

Coordinates taken from the Brack's hardwall cactus surveys were entered into a GIS system and were analyzed in relation to areas of existing and proposed project disturbances (road and existing pipelines). The proposed Chaco 23-08 3 #1H well-tie pipeline and the proposed Chaco 23-08 3 power line were moved closer to existing and proposed disturbances, minimizing Brack's hardwall cacti and habitat impacts. As a result of the realignments, 237 Brack's hardwall cacti were identified within the Proposed Action area. One Brack's hardwall cactus was found on the well pad, 59 Brack's hardwall cacti were located on the access road, 83 Brack's hardwall cacti were located on the Chaco 23-08 3 #1H well-tie pipeline, and approximately 94 Brack's hardwall cacti are intersected by the proposed proposed project's power line. The remaining 389 Brack's hardwall cacti were located on the buffer areas. A total of up to 237 Brack's hardwall cacti would require transplanting under the Proposed Action.

The transplanted Brack's hardwall cactus would to be expected have mortality, although the percentage of transplant success is not known. Positively, scientific information may be gained by monitoring transplanted Brack's hardwall cactus populations. Impacts to Brack's hardwall cacti resulting from the Proposed Action would affect individuals and habitats, but are not expected to result in population-level impacts.

The exposed Nacimiento Formation soils in the analysis area provide potential habitat for the Aztec gilia. No Aztec gilia were observed during field surveys.

The proposed action would have a negligible impact on Special Status Species. The spatial analysis area for cumulative impacts to special management wildlife species is the proposed project area and a 2 mile buffer corresponding to the wildlife analysis area (**SECTION 3.7.2)**. As discussed above, habitat disturbance and fragmentation in the analysis area is primarily the result of oil and gas development (including well pads, access roads, and pipeline corridors) as well as the other identified reasonably foreseeable actions within the analysis area. Relative to the existing and likely future impacts to special status birds in the area, Proposed Action impacts would have a minimal additive effect to cumulative impacts. As discussed in section 3.9 Special Status Species page(s) 58 thru 64.

10. The proposed activities will not threaten any violation of Federal, State, or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)). Sections 1.4 and 1.5 of the EA describe the relationship of the proposed activities to relevant laws, policies, regulations, and plans.

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REFERENCES

Barnes, Frank C., 1951. History of development and production of oil and gas in the San Juan Basin. In *The south and west sides of the San Juan Basin, New Mexico and Arizona*, Smith, C.T.; Silver, C. ed(s), New Mexico Geological Society, Guidebook, 2nd Field Conference, pp. 155-160.

BLM. 2008. *National Environmental Policy Handbook. H-1790-1.* Bureau of Land Management. National Environmental Policy Act Program.

APPROVED:

/s/Timothy J. Wakefield
Timothy J. Wakefield
Acting Field Manager
Farmington Field Office

9/24/15
Date