United States Department of the Interior
Bureau of Land Management

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Glenn's Water Well Service, Inc.
Delaware River to COG's Honeygraham Frac Pond Fresh Water Pipeline
NM-132228

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TABLE OF CONTENTS

1. Purpose and Need for Action 3
1.1. Background 3
1.2. Purpose and Need for Action 3
1.3. Decision to be Made 3
1.4. Conformance with Applicable Land Use Plan(s) 3
1.5. Relationship to Statutes, Regulations or Other Plans 3
1.6. Scoping, Public Involvement, and Issues 4
2. Proposed Action and Alternative(s) 4
2.1. Proposed Action 4
2.2. Alternative A 9
2.3. Alternative B 11
2.4. No Action 12
2.5. Alternatives Considered but not Analyzed in Detail 12
3. Affected ENVIRONMENT AND Environmental Consequences 13
3.1. Range 13
3.2. Soils 14
3.3. Vegetation 15
3.4. Fish & Wildlife Resource Management 16
3.5. Delaware Riparian Area 23
3.6. Noxious Weeds and Invasive Plants 25
3.7. Cultural Resource Management 26
3.8. Visual Resource Management 27
3.9. Water Resources 28
3.10. Special Designations (ACECs, WSR) 29
3.11. Impacts from the No Action Alternative 34
3.12. Cumulative Impacts 34
4. Supporting information 34
4.1. List of Preparers 34
4.2. References 35

1. PURPOSE AND NEED FOR ACTION

1.1. Background

Glenn's Water Well Service, Inc. has submitted a Standard Form (SF) 299 application to the Bureau of Land Management (BLM) Carlsbad Field Office (CFO) on March 13, 2014, to request a Fresh Water pipeline on federal lands, located approximately 14.6 miles southwest of Malaga, New Mexico.

1.2. Purpose and Need for Action

The purpose of this action is to provide Glenn's Water Well Service, Inc. with legal access across public lands managed by the BLM. The need for this action is established by the BLM's responsibility under Title V of the Federal Land Policy and Management Act (FLPMA) of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761) to respond to a request for a Right-of-Way (ROW) grant for legal access.

1.3. Decision to be Made

Based on the information in this Environmental Assessment (EA), the BLM/CFO would decide whether to approve the action, and if so, under what terms and conditions. Under the National Environmental Policy Act (NEPA), as amended (Public Law [PL]. 91-90, 42 USC 4321 et seq.), the BLM/CFO 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/CFO Field Manager is the responsible officer who would decide one of the following:

- To approve the proposed ROW grant with design features as submitted
- To approve the proposed ROW grant with additional mitigations
- To analyze the effects of the proposal in an EIS
- To deny the action

1.4. Conformance with Applicable Land Use Plan(s)

The 1988 Carlsbad Resource Management Plan, as amended by the 1997 Carlsbad Approved Resource Management Plan Amendment and the 2008 Special Status Species Approved Resource Management Plan Amendment have been reviewed, and it has been determined that the proposed action conforms with the land use plan terms and conditions as required by 43 CFR 1610.5.

Name of Plan: 1988 Carlsbad Resource Management Plan

Date Approved: September 1988

Decision: [Page 10] "In general, public lands are available for utility and transportation facility development…" [Page 13] "BLM will encourage and facilitate the development by private industry of public land mineral resources so that national and local needs are met, and environmentally sound exploration, extraction, and reclamation practices are used."

Name of Plan: 1997 Carlsbad Approved Resource Management Plan Amendment

Date Approved: October 1997

> Goal: [Page 4] "Provide for leasing, exploration and development of oil and gas resources within the Carlsbad Resources Area." The proposed action aids in the development of oil and gas resources and complies with the Surface Use and Occupancy Requirements.

1.5. Relationship to Statutes, Regulations or Other Plans

The Carlsbad Field Office Geographic Information Systems in order to identify resources that may be affected by the proposed action. A map of the project area is prepared to display the resources in the area and to identify potential issues. Resources in the project area include, but are not limited to range,

wildlife, and hydrology. There could be concerns over the introduction and spread of noxious weeds, effects of livestock grazing, effects to threatened and endangered species, and a drainage feature.

This proposed project involves a total of 270.6 acres of surface water rights, with accompanying supplemental groundwater rights, from the Delaware River, which were adjudicated by 1994 and 2006 Consent Orders. The recognized amounts of water include a farm delivery requirement for irrigation of 3.697 acre – feet per acre per annum, and a consumptive irrigation requirement of 2.218 acre – feet per acre per annum.

This proposed project is tied to a temporary permit request, with the water rights to revert back to the adjudicated place and purpose of use by December 31, 2020, subject to an earlier reversion upon the written request of the applicant.

1.6. Scoping, Public Involvement, and Issues

The Carlsbad Field Office (CFO) publishes a NEPA log for public inspection. This log contains a list of proposed and approved actions in the field office. The log is located in the lobby of the CFO as well as on the BLM New Mexico website (http://www.blm.gov/nm/st/en/prog/planning/nepa_logs.html).

In addition the final Environmental Assessment was publicly scoped for two weeks at the In the Spotlight section of Calsbad Field Office's web site at: http://www.blm.gov/nm/st/en/fo/Carlsbad_Field_Office.html.

The CFO uses Geographic Information Systems (GIS) in order to identify resources that may be affected by the proposed action. A map of the project area is prepared to display the resources in the area and to identify potential issues.

The proposed action was circulated among CFO resource specialists in order to identify any issues associated with the project. The issues that were raised include:

- How would air quality be impacted by the proposed action?
- How would climate change be impacted by the proposed action?
- How would range management be impacted by the proposed action?
- How would soils be impacted by the proposed action?
- How would water resources be impacted by the proposed action?
- How would vegetation be impacted by the proposed action?
- How would Visual Resource Management be impacted by the proposed action?
- How would wildlife be impacted by the proposed action?
- How would threatened and endangered species be impacted by the proposed action?
- How would noxious weeds be impacted by the proposed action?
- How would cultural resources be impacted by the proposed action?
- How would special designations (ACECs, WSRs) be impacted by the proposed action?

2. PROPOSED ACTION AND ALTERNATIVE(S)

2.1. Proposed Action

Glenn's Water Well Service, Inc. is proposing to construct, maintain, and operate two 10-horse power fresh water pumps in the Delaware River at Brantley's diversion point and a fresh water pipeline to provide fresh water to COG's Honeygraham Frac Pond (figure 1). There would be a need for this project over two different times of the year; the first time being from January 1st thru June 30th and a second time September 1st through December 31 st,for a total of ten months, or once there is no outflow from the pool. Once pumping ceases the proponent would remove all equipment (generator, fuel tanks, pumps, electrical supply line) until the water outflow resumes and pumping begins. The project is anticipated to continue for up to five years.

There would be a generator and propane fuel tank used to power electricity that would be placed within the parking lot approximately 200 feet north of the proposed diversion point. Coming from the generator there would be a surface electrical supply line that would power the two pumps.

The project would require two 10 horsepower (HP) pumps to deliver a combined total of approximately 200 gallons per minute (GPM) that would be installed in the river pool inside two PVC casings. Two hundred GPM is equivalent to 0.45 cubic feet per second (cfs). The casings would have 0.040 inch (approximately 1,000 µm) factory cut slots to allow incoming water.

There would also be a need for a 4 inch fresh water supply pipeline from the Delaware River pumps to COG's Honeygraham Frac Pond. The applicant requested right of way area for the 4 inch surface fresh water pipeline that would be approximately 4,752.0 ft. in length, 30 ft. width, for 3.09 acres. The surface pipeline would remain in place outside of the authorized months to pump.

The location of the proposed action is in Eddy County, New Mexico, with the legal lands description as follows:

T. 26 S., R. 28 E., NMPM
sec. 29: NW¼SE¼.

Authority of this action is under Title V of the Federal Land Policy and Management Act (FLPMA) of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).

The proposed action is to grant Glenn's Water Well Service, Inc.'s proposal in accordance with the Stipulations for surface installed pipelines, and project-specific cultural stipulations for the Carlsbad Field Office, BLM, currently in effect.

2.1.1. Design Features and Applicant proposed mitigation:

- Remove generator, propane fuel tank, and pumps during non-use.
- Leave pipeline to frac pond in place
- Place generator and propane tanks at parking area where already disturbed

Standard Stipulations: The standard stipulations include:

1. Standard Surface Installed Pipeline Stipulations
2. Site Specific Cultural Stipulations
3. Wildlife noise stipulation
4. Removal of all associated equipment during non-interval (inactivity)
5. Keep in place equipment during pumping intervals when awaiting water level return to pumping minimum threshold level.

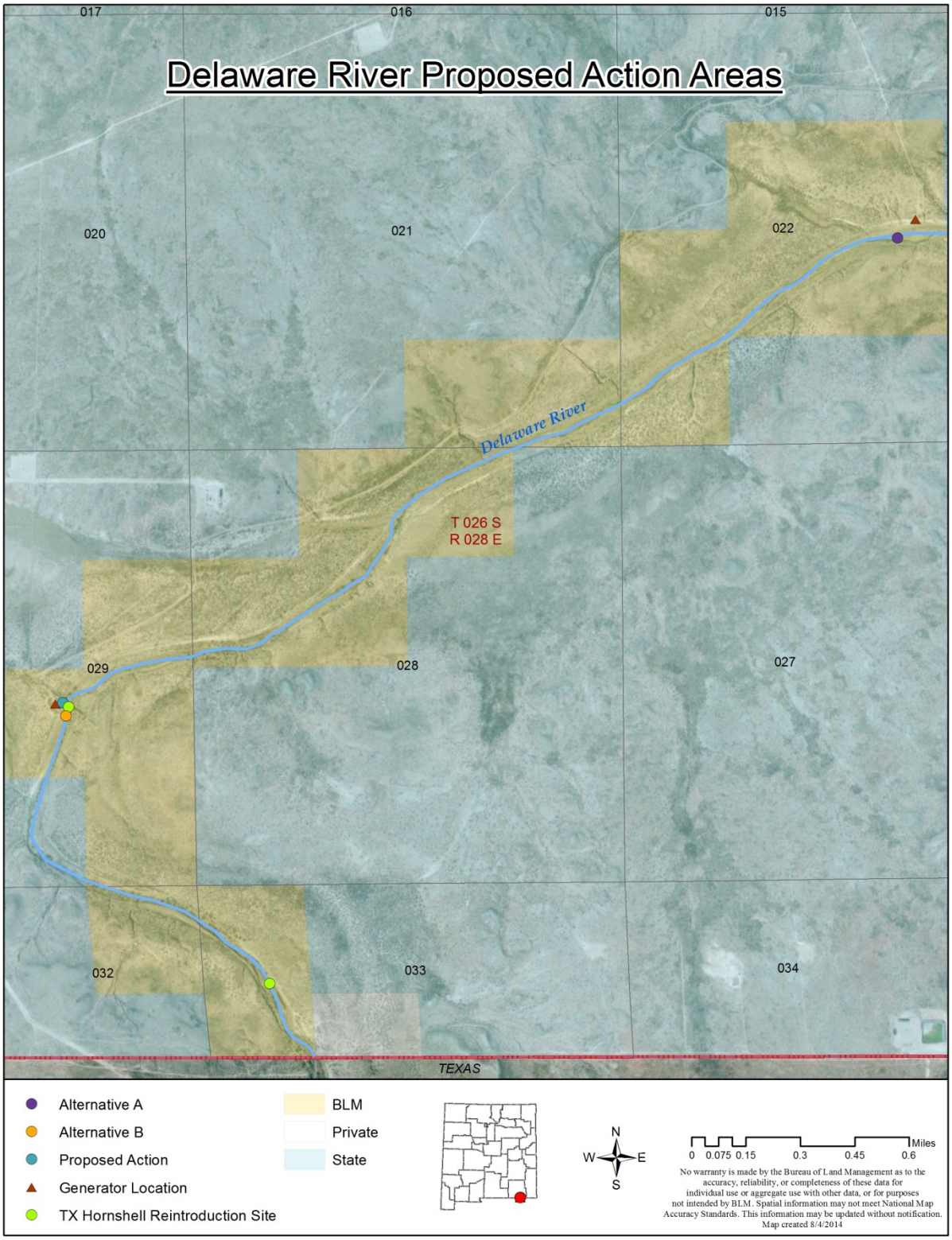

Figure 1. Proposed Action and Alternatives

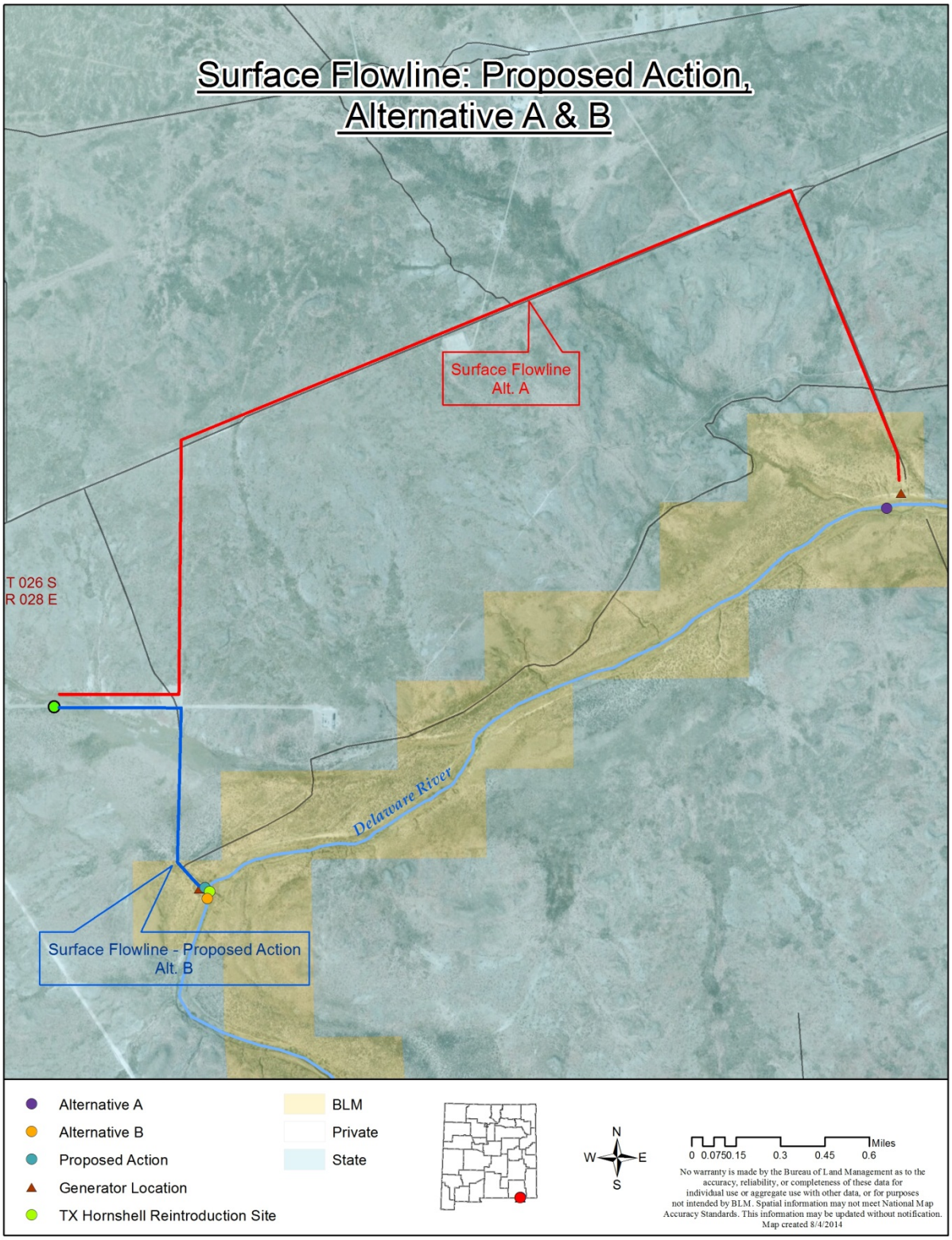

Figure 2. Proposed Action and Alternatives with assosiated surface flow lines

Figure 3. Proposed Action & Alternative B

Alternative A

An alternative location for the placement of the pump(s) approximately 2.5 miles downstream at the pipeline crossing (in T 26 R 28 Section 22) is being analyzed (Figure 2) in this EA. This alternative would incorporate the same design features identified in the proposed action.

The purpose of this alternative is to: 1) assess any difference in impacts from an alternative surface pipeline route to the Honeygraham frack pond, and 2) assess any difference in impacts from the proposed action to the aquatic habitat and Texas hornshell mussel (mussel) from a decrease in the water level of the Delaware by pumping operations in an alternative location 2.5 miles downstream. The alternative surface pipeline route would follow existing roads from the pipeline crossing to the frac tank. This linear disturbance would be approximately 4 miles.

There would also be a need for a 4 inch fresh water supply pipeline from the Delaware River pumps to COG's Honeygraham Frac Pond. This alternative would result in a right of way area for the 4 inch surface fresh water pipeline that would be approximately 4.0 miles. in length, 30 ft. width, for 6.28 acres. The surface pipeline would remain in place outside of the authorized months to pump.

Figure 4. Alternative A location

2.1.2. Design Features:

- Remove generator, propane fuel tank, and pumps during non-use.
- Leave pipeline to frac pond in place
- Placing generator and propane tanks at identified previously disturbed area

2.2. **Alternative B**

This alternative considers a water extraction point located approximately 55 feet upstream from the proposed action location (figure 5). The purpose of this location would be to minimize the impact to the mussel during the reproduction cycle (larval stage) of the reintroduced population. The extraction point for Alternative B would occur in a separate pool than that of the proposed action. Alternative B affords protections to the larval stage of the mussel by having the extraction point located outside of the reintroduction site, which minimizes the impact to the mussel, by eliminating the threat entering into pumping system. The two pools are separated by a 55 foot run and an approximate 23 inch gradient change (figure 5).

Figure 5. Extraction points for the Proposed Action & Alternative B

Figure 6. Gradient change between pools at Alternative B location.

2.3. No Action

The BLM NEPA Handbook (H-1790-1) states that for Environmental Assessments (EAs) on externally initiated proposed actions, the No Action Alternative generally means that the proposed activity would not take place. This option is provided in 43 CFR 2804.26 (a) (1-6b). This alternative would deny the approval of the proposed application, and the current land and resource uses would continue to occur in the proposed project area. No mitigation measures would be required. See section 3.11, Impacts from the No Action alternative for more information.

2.4. Alternatives Considered but not Analyzed in Detail

Using the old diversion point inside the stantion pipe at the proposed action location was initially considered, however, the proponent informed the CFO that due to several years of heavy siltation build up, they could not obtain enough water to supply the necessary volume to the frac tank and the alternative was not analyzed further.

A third location was considered, specifically placing the generator and fuel tank at the old caliche pit located at in T 26 R 28 Section 23 and drawing water from the pools directly to the south. The proposed surface disturbance and potential impacts to natural and cultural resources would not be substantially different than those in Alternative A. Due to the similarity in potential impacts from this alternative and alternative A, this alternative was not analyzed further.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Projects requiring approval from the BLM such as right of way grants can be denied when the BLM determines that adverse effects to resources (direct or indirect) cannot be mitigated to reach a Finding of No Significant Impact (FONSI).

During the analysis process, the interdisciplinary team considered several resources and supplemental authorities. The interdisciplinary team determined that the resources discussed below would be affected by the proposed action. The project file displays the complete list of resources and supplemental authorities that were considered and the reasons why these resources were not analyzed further.

3.1. **Range**

3.1.1. Affected Environment

The proposed fresh water facility is within the Delaware River West (No.78142) grazing allotment. This allotment is a yearlong cow-calf deferred rotation operations. Range improvement projects such as windmills, water delivery systems (pipelines, storage tanks, and water troughs), earthen reservoirs, fences, and brush control projects are located within the allotment. In general, an average rating of the range land within this area is 6 acres per Animal Unit Month (AUM). In order to support one cow, for one year, about 72 acres are needed. This equals about nine cows per section.

3.1.2. Impacts from the Proposed Action

About 0.46 acres would be occupied by the placement of the fresh water facility. Since this area is already disturbed and has very little vegetative cover, it would not affect the Animal Unit Months (AUMs) which are authorized for livestock use on any single allotment. There are occasional livestock injuries or deaths due to accidents such as collisions with vehicles, falling into open trenches, and ingesting plastic or other materials present at the work site. If further development occurs, the resulting loss of vegetation could reduce the AUMs authorized for livestock use in this area. If fences are damaged, cattle can cross from one pasture to the next or get out into the highway right-of-way. This could disrupt any rest/rotation grazing scheme currently in place. If water lines or drinking troughs are damaged, animal health can be impacted.

Impacts to the ranching operation are reduced by the following standard practices which include: avoiding damage to existing range improvement projects (fences, water troughs, range study points, and pipelines), utilizing existing surface disturbance, and minimizing vehicular use, placing parking and staging areas on caliche surfaced areas, reclaiming the areas not necessary for production, and quickly establishing vegetation on the reclaimed areas.

Mitigation

None

3.1.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.1.2 above.

Mitigation Measures

None

3.1.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.1.2 above.

Mitigation Measures

None

3.2. **Soils**

3.2.1. Affected Environment

The soils that would be affected under the Proposed action is mapped as **RA- Reagan Loam** (0 to 3% slopes). These are loamy soils and are described below:

Loamy

Generally these soils are deep, well-drained, moderately dark colored, calcareous, and loamy. These soils typically occur on gently undulating plains and in the broader valleys of the hills and mountains. Permeability is moderate, water-holding capacity is moderate to high, and runoff is likely after prolonged or heavy rains. Careful management is needed to maintain a cover of desirable forage plants and to control erosion. Reestablishing native plant cover could take 3-5 years due to unpredictable rainfall and high temperatures.

These soils generally have cyanobacteria throughout the area, while squamulose, crustose, and gelatinous lichens are occasionally present. These soil crusts are important in binding loose soil particles together to stabilize the soil surface and reduce erosion. Biological soil crusts can contribute positively to soil stability, fixing atmospheric nitrogen, nutrient contributions to plants, water infiltration, and plant growth. They function in the nutrient cycle by fixing atmospheric nitrogen, contributing to soil organic matter, and maintaining soil moisture. In addition, they can act as living mulch which discourages the establishment of annual/invasive weeds. Structurally they form an uneven, rough carpet that reduces rain drop impact and slows surface runoff. Below the surface, lichen and moss rhizines, fungal hyphae, and cyanobacterial filaments all act to bind the soil surface particles just below and at the surface. Horizontally, they occur in nutrient-poor areas between plant clumps. Because they lack a waxy epidermis, they tend to leak nutrients into the surrounding soil. Vascular plants such as grasses and forbs can then utilize these nutrients.

3.2.2. Impacts from the Proposed Action

Direct and Indirect Effects

Since the pump system would be placed on a previously disturbed site, no additional soil impacts are expected. Since this site is hardened with a surfacing material, no wind or water erosion is expected.

There is always the potential for soil contamination due to spills or leaks. Soil contamination from spills or leaks can result in decreased soil fertility, less vegetative cover, and increased soil erosion.

Impacts to soil resources would be reduced by following standard practices such as utilizing existing surface disturbance, no clearing of the right-of-way, and quickly establishing vegetation on the disturbed areas.

Mitigation Measures

The pump system would be placed on an impervious material to prevent spills or leaks from reaching the soil. The pump system would be bermed, to contain any spill or leak on the impervious material.

3.2.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.2.2 above.

Mitigation Measures

None

3.2.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative B. See Impacts from the Proposed Action, section 3.2.2 above.

Mitigation Measures

None

3.3. **Vegetation**

3.3.1. Affected Environment

Loamy Soil Type Plant Communities
This is a grassland site with warm season mid and short grass aspect. There is a fair scattering of shrubs and half-shrubs throughout the landscape. Forb production fluctuates greatly from season to season and year to year. Gramas, tridens, threeawns, muhlys, dropseeds, tobosa, and burrograss are the dominant grasses. The most common shrubs in the area are tarbush, creosote, mesquite, cactus, and yucca. Forbs include filaree, croton, bladderpod, and globemallow.

3.3.2. Impacts from the Proposed Action

Direct and Indirect Effects

About 0.46 acres would be occupied by the placement of the fresh water line, generator and propane tank. Since this area is already disturbed and has very little vegetative cover , no additional impacts to the vegetation are expected. The installation of the flow line would be along an existing road, so some vegetation would be flattened by the pipe, but it should grow up around the pipe once precipitation is received.

Impacts to vegetation would be reduced by following standard practices such as utilizing existing surface disturbance, no clearing of the right-of-way, and quickly establishing vegetation on the reclaimed areas.

Mitigation Measures

None

3.3.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.3.2 above.

Mitigation Measures

None

3.3.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative B. See Impacts from the Proposed Action, section 3.3.2 above.

Mitigation Measures

None

3.4. **Fish & Wildlife Resource Management**

3.4.1. Affected Environment

This project occurs in the Chihuahuan Desert habitat type. The Chihuahuan desert is one of the four most biologically rich and diverse desert ecoregions in North America. Numerous plant species live in this desert. The Chihuahuan Desert stretches from the southeastern corner of Arizona across southern New Mexico and west Texas to the Edwards Plateau in the United States. It runs deep into central Mexico, including parts of the states of Chihuahua, northwest Coahuila, northeast Durango and several others. This Desert is bounded by the Sierra Madre Occidental to the west and the Sierra Madre Oriental to the east, extending as far south as San Luis Potosi and to the isolated islands of the Chihuahuan vegetation in the Mexico states of Queretaro and Hidalgo. In New Mexico, Chaves and Eddy Counties, west of the Pecos River, consist largely or entirely of Chihuahuan Desert habitat type. The dominant plant species throughout the Chihuahuan desert is creosote bush. Depending on diverse factors such as type of soil, altitude, and degree of slope, creosote bush, can be found in association with other woody and grass species.

Wildlife

A number of big game species have the potential to occur in and around the project area including mule deer *(Odocoileus hemionus),* collard peccary *(Peccari tajacu)* and wild turkey *(Meleagris gallopavo).* Small game species could include scaled quail *(Callipepla squamata),* northern bobwhite quail. Racoon *(Procyon lotor),* badger *(Taxidea taxus),* long tailed weasel *(Mustela frenata),* gray fox *(Urocyon cinereoargenteus),* ringtail *(Bassariscus astutus),* bobcat *(Lynx rufus)* and muskrat *(Ondatra zibethicus)* also have potential to occur in the area. A number of waterfowl species may also utilize the area.

Non-game mammals with the potential to occur in the project are desert cottontail *(Sylvilagus audubonii),* black-tailed jackrabbit *(Lepus californicus),* coyote *(Canis latrans)*, striped skunk *(Mephitis mephitis),* ground squirrels, mice, rats and shrews. Two bat species are also known to occur in or surrounding the analyzed areas including Mexican free-tailed bat (*Tadarida brasiliensis)* and Cave Myotis *(Myotis velifer).*

Various reptiles and amphibians have the potential to occur in the analyzed areas, including but not limited to western diamondback rattlesnake *(Crotalus atrox),* coachwhip *(Masticophis flagellum)*, common kingsnake *(Lampropeltis getula)*, bull snake *(Pituophis melanoleucus),* plain-bellied watersnake (*Nerodia erythrogaster), c*heckered gartersnake *(Thamnophis marcianus*), round-tailed horned lizard *(Phrynosoma modestum)*, common side-blotched lizard *(Uta stansburiana),* common spotted whiptail *(Aspidoscelis gularis),* little striped whiptail *(Aspidoscelis inornata),* marbled whiptail (*Aspidoscelis marmorata),* eastern collared lizard *(Crotaphytus collaris)*, great plains skink *(Plesiodon obsoletus)* leopard lizard *(Gambelia wislizenni),*southwestern fence lizard *(Sceloporus cowlesi)* ornate box turtle *(Terrapene ornate)*, twin-spotted spiny lizard *(Sceloporus bimaculosus),* Texas banded gecko *(Coleonyx brevis),* western river cooter *(Pseudemys gorzugi),* Red-eared Slider *(Trachemys scripta),* Spiny Softshell *(Apalone spinifera),* Northern Cricket Frog *(Acris crepitans)* Rio Grande leopard Frog *(Lithobates berlandieri)* plains leopard frog *(Rana blairi)*, Great Plains toad *(Bufo cognatus)*, New Mexico spadefoot toad *(Spea multiplicata)*, Couch's spadefoot toad *(Scaphiopus couchii)* and tiger salamander *(Ambystoma tigrinum).*

An abundance of non-game species are also known to occur within the analyzed areas, including mammals, reptiles and amphibians not discussed above.

Fish and Aquatic species The Delaware River is a spring fed, intermittent stream beginning in the foothills of the Guadalupe Mountains National Park in Texas. Mean discharge during a recent study, measured at the USGS stream gauge at U.S. Highway 285 bridge, measured >2 cfs with spikes ranging in excess of 43 cfs (Brandenburg et.al. 2009). However, spikes due to seasonal thunderstorms can exceed that amount by orders of magnitude. Generally, however, the river is a slow moving stream comprised of pools, runs and riffle habitats that are approximately equally distributed throughout the length, with marsh and backwater habitats also present. Pool habitats average 1m deep while some pools are in excess of 2m with velocities averaging 0.03m/s. Average depth of run-riffle habitats is 0.20m with a mean velocity of 0.2 m/s (Brandenburg et.al. 2009). Backwater and marsh habitats are generally <1m deep with mean velocities near 0 m/s.

Twenty-seven species of fish have been collected from the Delaware through collections beginning with a survey by Pope in 1854 and continuing with surveys throughout last century. The most recent comprehensive survey, conducted in 2008, found only 14 species of fishes, representing eleven families (see table1). Fish species ranged from the longnose gar (Lepisosteus osseus) to the common carp (Cyprius carpio) and the red shinber (Cyprinella lutrnsis). Among the native fish fauna, two New Mexico state listed species were present including the headwater catfish (*Ictalurs lupus*) and the Mexican tetra (*Astyanax mexicanus*) (Brandenburg et.al. 2009).

Table 1: Species found during a 2008 survey of the Delaware River.

Scientific Name Common Name Species Code
Order Lepisisteiformes
Family Lepisosteidae gars
Lepisosteus osseus ..... longnose gar
Order Clupeiformes
Family Clupeidae herrings
Dorosoma cepedianum..... gizzard shad
Order Cypriniformes
Family Cyprinidae carps and minnows
Cyprinella lutrensis ..... red shiner ()
Cyprinus carpio ..... common carp ()
Dionda episcopa..... roundnose minnow
Notemigonus crysoleucas ..... golden shiner
Notropis girardi ..... Arkansas River shiner
Notropis stramineus ..... sand shiner
Pimephales promelas ..... fathead minnow ()
Family Catostomidae suckers
Carpiodes carpio ..... river carpsucker ()
Order Characiformes
Family Characidae tetras
Astyanax mexicanus ..... Mexican tetra ()
Order Siluriformes
Family Ictaluridae North American catfishes
Ameiurus melas..... black bullhead ()
Ictalurus lupus ..... headwater catfish ()
Ictalurus punctatus ..... channel catfish ()
Order Atheriniformes
Family Atherinopsidae New World silversides
Menidia beryllina ..... inland silverside
Table 2. continued.
Scientific Name Common Name Species Code
Order Cyprinodontiformes
Family Fundulidae topminnows

Fundulus grandis ..... Gulf killifish ()
Fundulus zebrinus ..... plains killifish
Lucania parva ..... rainwater killifish
Family Poeciliidae livebearers
Gambusia affinis ..... western mosquitofish ()
Family Cyprinodontidae pupfishes
Cyprinodon pecosensis ..... Pecos pupfish
Cyprinodon variegatus..... sheepshead minnow
Order Perciformes
Family Centrarchidae sunfishes
Lepomis cyanellus ..... green sunfish ()
Lepomis gulosus ..... warmouth
Lepomis macrochirus ..... bluegill
Lepomis megalotis ..... longear sunfish
Micropterus punctalatus ..... spotted bass ()
Micropterus salmoides ..... largemouth bass ()

Migratory Birds

Executive Order 13186, dated January 17, 2001, calls for increased efforts to more fully implement the Migratory Bird Treaty Act (MBTA) of 1918. The federal MBTA prohibits the taking, hunting, killing, selling, purchasing, etc., of migratory birds, parts of migratory birds, or their eggs and nests. Most bird species native to North America are covered by the MBTA. All birds known to occur in the project area, with the exception of the previously mentioned game birds are covered by the MBTA (USFWS 2013b). No active bird nests were observed in or within 200 meters of the analyzed areas during July 2014 surveys.

A variety of riparian obligate and/or dependent avian species have the potential to occur in the proposed action area and two alternative areas, including but not limited to Belted Kingfisher (*Megaceryle alcyon)*, Bell's Vireo *(Vireo bellii),* Painted Bunting (*Passerina ciris)*, Summer Tanager (*Piranga rubra)*, Wilson's Warbler (*Cardellina pusilla)*, Yellow-billed Cuckoo (*Coccyzus americanus)*, Black-chinned Hummingbird *(Archilochus alexandri)*, Blue Grosbeak (*Passerina caerulea*), Bullock's Oriole (*Icterus bullockii)*, Cooper's Hawk (*Accipiter cooperii)*, Cordilleran Flycatcher (*Empidonax occidentalis)*, Lesser Goldfinch (*Spinus psaltria)*, Red-eyed Vireo (*Vireo olivaceus)*, Swainson's Hawk (*Buteo swainsoni)*, Warbling *Vireo (Vireo gilvus)*, and Western Wood-pewee (*Contopus sordidulus).* A myriad of raptor species may also be found in the analyzed areas.

Texas hornshell mussel (*Popenaias poeii*)

The Texas hornshell mussel (mussel) historically occurred in the Pecos River system from the North Spring River, near Roswell, Chaves County, New Mexico (Cockerell 1902), throughout the Pecos River and in the lower Rio Grande to Brownsville, Cameron County, Texas (Neck and Metcalf 1988). In 1992, Texas Parks and Wildlife Department (TPWD) personnel found shells of Texas hornshell between Big Bend and the mouth of the Pecos River (Howells and Ansley 1999, Strenth et al.2004). The species inhabits approximately 12% of its historic range in New Mexico, where the population is limited to an 8.7 mile stretch from Black River Village downstream to the Carlsbad Irrigation District (CID) dam, of the Black River in Eddy County (Carman, S.M. 2007). Additionally, New Mexico Department of Game & Fish in partnership with the BLM and USFWS moved 40 adult Texas hornshell in equal sex ratios from the Black River to Delaware River in May 2013. Reintroduction efforts will continue through May 2017.

Probable causes of their decline include: habitat modification in the form of impounds, diversions for agriculture and flood control, contamination of water from oil and gas industry, increased deposition of soft silt due to excessive run-off, scouring of stream beds during storm events, increased amounts of aquatic vegetation and the introduction of exotic species. Much of the river habitat within the historic

range of Texas hornshell has experienced tremendous increases in salinity as a result of agricultural returns to the rivers. Salinity in particular is thought to limit Texas hornshell distribution (Lang 2001).

Freshwater mussels (Bivalvia, Unionidae) are an important component of a healthy stream or river ecosystem. In addition, mussels often are used by various agencies to monitor environmental quality (Rosenberg and Resh 1992). However, native freshwater mussel populations are declining rapidly, both globally and in the United States (Lydeard et al. 2004). Native mussels belonging to the Unionidae family have life spans of approximately 30 years. Mussels are natural filters, feeding on algae, plankton, and silts; they help purify the aquatic system. As adults, mussels have very limited mobility. Mussels have a muscular foot that protrudes out between the shells, wedges into the substrate, and contracts to pull the animal a short distance. Consequently, it's not easy for mussels to escape disturbances that threaten them, like droughts, floods, dredging or excessive contaminants.

Mussels are able to spread through river systems because of a unique parasitic relationship with one or more host fish species that help disperse mussel larvae, called glochidia. During spawning, male mussels release their sperm into the water where it is filtered by female mussels. Her eggs are fertilized in specialized brood chambers located in her gills where the glochidia grow and develop. The female mussel then releases her glochidia, which must attach to a suitable host fish for several weeks to complete their metamorphosis into juvenile mussels. Only when metamorphosis has occurred can the juveniles drop from the host fish, which are generally unharmed by the glochidia, to live independently in the sediment.

The U.S. Fish and Wildlife Service designated the Texas hornshell as a candidate for listing under the Endangered Species Act in 1989. At that time, the agency identified a series of threats to the species, including alteration of stream habitat from land uses; water pollution; water diversion and groundwater pumping; contamination from oil and gas operations; siltation and sedimentation; and a lack of legal protections.

As of the November 2013 Candidate Notice of Review (Federal Register Vol. 78, No.226), the hornshell is retained as a Candidate, with a listing priority of 8. Given the current Federal Candidate status of this species, the Bureau of Land Management is mandated to carry out management, consistent with the principles of multiple use, for the conservation of candidate species and their habitats and shall ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as Threatened or Endangered (Bureau Manual 6840.06).

New Mexico Department of Game & Fish in partnership with the BLM and USFWS moved 40 adult Texas hornshell in equal sex ratios from the Black River to Delaware River in May 2013. All mussels were marked with Floy tags and specific location information (GPS coordinates) was recorded. Reintroduction efforts will continue through May 2017. The Texas hornshell relocation site is the same river pool as the proposed action.

Yellow-billed Cuckoo (*Coccyzus americanus*)

Yellow-billed Cuckoo (YBC) is a riparian obligate species that has experienced significant declines in recent decades, particularly in the western United States. Riparian obligate species such as the YBC will have >90% of their nests in riparian vegetation or for which >90% of their abundance occurs in riparian vegetation during the breeding season. They may forage outside riparian vegetation. Without riparian vegetation in good ecological condition, these species will not occur in a given area (BLM).

In New Mexico, Yellow-billed Cuckoos can be found locally along lowland drainages where stands of multi-structured native riparian woodlands occur, often containing a variable combination of Fremont cottonwoods and willows.

The Yellow-billed Cuckoo has declined precipitously throughout its range in southern Canada, the United States, and northern Mexico. It is nearly extinct west of the Continental Divide having disappeared from British Columbia in the 1920's, from Washington in the 1930's, from Oregon in the 1940's, and from northern-most California in the 1950's. It is extremely rare in the interior West. Its only remaining western "strongholds" are three small populations in California, scattered populations in Arizona (especially on the

San Pedro River) and New Mexico (especially the Gila River), and an unknown number of birds in northern Mexico. The breeding range extends south to central Mexico along both the Pacific and Atlantic slopes, and to parts of the Yucatan Peninsula and the Greater Antilles. Yellow-billed Cuckoos winter primarily in South America east of the Andes (Hughes 1999). The species is vulnerable to loss, fragmentation, and degradation of riparian habitat.

On July 25, 2001, the USFWS published notice in the *Federal Register (66 FR 38611-38626)* that the petition to list the western Yellow-billed Cuckoo under the ESA is warranted, but precluded by higher listing actions. On October 3, 2013 the USFWS announced the proposal to list the Yellow-billed Cuckoo in the western portion of the United States, Canada, and Mexico as a threatened distinct population segment (DPS) under the Endangered Species Act of 1973, as amended (ACT). This proposed threatened status does not apply to the population of Yellow-billed Cuckoo known to occur within the analyzed areas. A Yellow-billed Cuckoo was detected approximately .5 mile upstream from the Proposed Action during July 2012 surveys. No Yellow–billed Cuckoos were detected during August 2014 surveys. The species is a BLM sensitive status species.

3.4.1 Impacts from the Proposed Action

Direct and Indirect Effects

Wildlife

Impacts of the proposed action to wildlife in the localized area may include but are not limited to: possible mortality, habitat degradation, fragmentation and avoidance of habitat during pumping activities.
After pumping operations commence, most species should become acclimated to the operational activity associated with maintenance and operations of the pump as wildlife typically habituate to and become accustomed to new noise and activity over the long term. The ecology of wildlife species is related closely to the species composition, structure and spatial arrangements of their required habitat components. Wildlife habitats respond to management practices more quickly than wildlife populations. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Migratory Birds

Adult migratory birds would not be directly harmed by the Proposed Action and Alternatives because of their mobility and ability to avoid areas of human activity. No nests were observed during surveys in July 2014. Any nests within the project area at the time of installation, along with eggs and juveniles, may be directly impacted during installation of equipment. The increased human presence and noise levels may indirectly disturb or displace adults from nests and foraging habitats within and surrounding the project area. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Texas hornshell mussel (Popenaias poeii)

Information suggests that mussels prefer well-oxygenated water flowing over a stable substrate, usually comprised of sand and gravel with some silt. The base water flow sustained by ground water discharge or surface runoff must be adequate to moderate seasonal changes in stream flow and water temperature, dilute contaminants in surface water runoff, and withstand periods of drought. Because mussels are dependent on fish hosts, any effects of hydrologic alterations on fish hosts also impacts mussel populations. Freshwater mussels possess a suite of traits that make them especially vulnerable to habitat disturbances. Delayed reproductive maturity limits the number of breeding individuals entering the population each year. Additional constraints on the ability of mussels to respond to environmental changes include limited dispersal abilities, poor juvenile survival, high toxin accumulation rates, limited refugia, and host specificity. If the pool continues to have water discharge during the course of pumping activities, the mussel will still be submerged in water. However with pumping occurring in the same pool of water as the mussel, reproduction success of the mussel may be impacted.

Yellow-billed Cuckoo (*Coccyzus americanus)*

Adult Yellow-billed Cuckoo would not be directly harmed by the Proposed Action because of their mobility and ability to avoid areas of human activity. No nests were observed during surveys in July 2014. Any nests within the project area at the time of installation, along with eggs and juveniles, may be directly impacted during installation of equipment. The increased human presence and noise levels may indirectly disturb or displace adults from nests and foraging habitats within and surrounding the project area. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Mitigation Measures

Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 49 db measured at 30 ft. from the source of the noise to minimize the impacts to avian and terrestrial species.

To ensure stream flow at the mussel reintroduction site a staff gage will be placed and monitored at the introduction site. The staff gage will be used to measure water surface elevation and to determine the rise/fall of the water surface during pumping operations. Once the water level reaches 1.30 feet as established by the staff gage water pumping activities will be stopped.

3.4.2. Impacts from Alternative A

Direct and Indirect Impacts

By moving the point of water draw downstream of the habitat it would eliminate impacts to both the adult re-established population and to the larval or reproductive phases of the hornshell.

The proposed action area is approximately 2.5 miles downstream from the reintroduction site which would eliminate the potential threats to the reintroduction site and efforts for the mussel.

Wildlife
Impacts of Alternative A to wildlife in the localized area may include but are not limited to: possible mortality, habitat degradation, fragmentation and avoidance of habitat during pumping activities.
After pumping operations commence, most species should become acclimated to the operational activity associated with maintenance and operations of the pump as wildlife typically habituate to and become accustomed to new noise and activity over the long term. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Migratory Birds
Adult migratory birds would not be directly harmed by the Alternative A because of their mobility and ability to avoid areas of human activity. No nests were observed during surveys in July 2014. Any nests within the project area at the time of installation, along with eggs and juveniles, may be directly impacted during installation of equipment. The increased human presence and noise levels may indirectly disturb or displace adults from nests and foraging habitats within and surrounding the project area. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Texas hornshell mussel (Popenaias poeii)
Information suggests that mussels prefer well-oxygenated water flowing over a stable substrate, usually comprised of sand and gravel with some silt. The base water flow sustained by ground water discharge or surface runoff must be adequate to moderate seasonal changes in stream flow and water temperature,

dilute contaminants in surface water runoff, and withstand periods of drought. Because mussels are dependent on fish hosts, any effects of hydrologic alterations on fish hosts also impacts mussel populations. Freshwater mussels possess a suite of traits that make them especially vulnerable to habitat disturbances. Delayed reproductive maturity limits the number of breeding individuals entering the population each year. Additional constraints on the ability of mussels to respond to environmental changes include limited dispersal abilities, poor juvenile survival, high toxin accumulation rates, limited refugia, and host specificity. Alternative A may minimize the impact to the Texas hornshell. Alternative A is located approximately 2.5 miles downstream, therefore the effects on the water level and water chemistry should be minimal. Also, potential impacts during reproduction may be minimized.

Yellow-billed Cuckoo (*Coccyzus americanus*)

Adult Yellow-billed Cuckoo would not be directly harmed by the Alternative A because of their mobility and ability to avoid areas of human activity. No nests were observed during surveys in July 2014. Any nests within the project area at the time of installation, along with eggs and juveniles, may be directly impacted during installation of equipment. The increased human presence and noise levels may indirectly disturb or displace adults from nests and foraging habitats within and surrounding the project area. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Mitigation Measures

Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise to minimize the impacts to avian and terrestrial species.

3.4.3. Impacts from Alternative B

Direct and Indirect Impacts

The impacts to the adult population will be similar to that in proposed action. However by moving the water pump (water intake) to the pool 55 feet upstream allow for improved dispersal of the reproductive spawn and larval stages of essential development for the mussel.

The impacts to the reintroduction site will be similar to that of the proposed action. However, by locating the extraction point to the pool approximately 55 feet upstream, dispersal and survival during the larval life stage of the mussel would be greatly improved.

Wildlife

Impacts of the proposed action to wildlife in the localized area may include but are not limited to: possible mortality, habitat degradation, fragmentation and avoidance of habitat during pumping activities.
After pumping operations commence, most species should become acclimated to the operational activity associated with maintenance and operations of the pump as wildlife typically habituate to and become accustomed to new noise and activity over the long term. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Migratory Birds

Adult migratory birds would not be directly harmed by the Alternative B because of their mobility and ability to avoid areas of human activity. No nests were observed during surveys in July 2014. Any nests within the project area at the time of installation, along with eggs and juveniles, may be directly impacted during installation of equipment. The increased human presence and noise levels may indirectly disturb or displace adults from nests and foraging habitats within and surrounding the project area. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Texas hornshell mussel (Popenaias poeii)
Information suggests that mussels prefer well-oxygenated water flowing over a stable substrate, usually comprised of sand and gravel with some silt. The base water flow sustained by ground water discharge or surface runoff must be adequate to moderate seasonal changes in stream flow and water temperature, dilute contaminants in surface water runoff, and withstand periods of drought. Because mussels are dependent on fish hosts, any effects of hydrologic alterations on fish hosts also impacts mussel populations. Freshwater mussels possess a suite of traits that make them especially vulnerable to habitat disturbances. Delayed reproductive maturity limits the number of breeding individuals entering the population each year. Additional constraints on the ability of mussels to respond to environmental changes include limited dispersal abilities, poor juvenile survival, high toxin accumulation rates, limited refugia, and host specificity. If the pool continues to have water discharge during the course of pumping activities, the mussel will still be submerged in water. However with pumping occurring in the immediate upstream pool the amount of discharge into the downstream pool may be affected. As a potential result, the dissolved oxygen (DO) and water temperature may be affected in the downstream pool.

Yellow-billed Cuckoo (*Coccyzus americanus)*

Adult Yellow-billed Cuckoo would not be directly harmed by the Alternative B because of their mobility and ability to avoid areas of human activity. No nests were observed during surveys in July 2014. Any nests within the project area at the time of installation, along with eggs and juveniles, may be directly impacted during installation of equipment. The increased human presence and noise levels may indirectly disturb or displace adults from nests and foraging habitats within and surrounding the project area. The potential lowering of the water level could lead to the loss of saturated soils and a deepen water table which in turn may contribute to a degraded riparian area.

Mitigation Measures

Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 45 db measured at 30 ft. from the source of the noise to minimize the impacts to avian and terrestrial species.

To ensure stream flow at the mussel reintroduction site a staff gage will be placed and monitored at the introduction site. The staff gage will be used to measure water surface elevation and to determine the rise/fall of the water surface during pumping operations. Once the water level reaches 1.30 feet as established by the staff gage water pumping activities will be stopped.

3.5. Delaware Riparian Area

3.5.1. Proposed Action

Riparian areas are located adjacent to rivers, creeks, lakes, springs, and wetlands. They are a transition zone between the upland and aquatic ecosystems. The increased moisture found in these areas

produces unique plant communities that differ noticeably from surrounding range land. A properly functioning riparian/wetlands system has the ability to perform the following: to purify water by removing sediments and other contaminants, lessen excessive erosion, carbon sequestration, diminish the impact of floods, preserve perennial stream flow, recharge ground water, provide corridors for flora and fauna, provide critical habitat for birds, wildlife, fish and other aquatic organisms and produce abundant, high quality forage for wildlife.

Riparian areas support the greatest diversity of plant and animal life of all habitat types. These areas are important to a large number of wildlife migrants, as well as to a diverse population of seasonal residents. Most terrestrial animal and terrestrial and aquatic insects depend on riparian and/or wetland areas as sources of water, forage, and cover. Riparian/wetland areas comprise less than one percent of the land mass in the State of New Mexico. It has been estimated that 80% of all wildlife in New Mexico spends at least some portion of its life cycle in riparian/wetland areas.

Riparian vegetation in the Delaware River floodplain consists of scattered groups of trees and shrubs with gramanoids and forb ground-cover. The scattered canopy vegetation is almost exclusively Gooding's willow *(Salix gooddingii)* with an occasional Fremont cottonwood *(Populus fremontii)*. Seepwillow *(Baccharis glutinosa)* is the dominant shrub.

The BLM uses Proper Functioning Condition (PFC), a qualitative method for assessing the condition of riparian areas and wetlands. PFC refers to both the assessment process and the on-the-ground condition of a riparian areas and wetlands. The assessment process consists of an approach that considers the hydrology, vegetation, and erosion/deposition attributes of the area. The on-the-ground condition refers to how well the physical processes are functioning. This condition is a state of resiliency that allows a riparian area or wetland to hold together during high-flow events with a high degree of reliability. This resiliency allows an area to then produce desired values over time, including aquatic species habitat, neotropical bird and other animal (including game and non-game species) habitat or forage. Riparian areas and wetlands that are not functioning properly cannot sustain these values. PFC assessments performed between 2003 -2012 have determined that the Delaware River riparian area is at proper functioning condition.

Direct and Indirect Effects

The pump location regarding this project will be associated with preexisting surface disturbances. Surface lines needed for water extraction will be placed on the surface. There may be an impact to bank storage (i.e. the lowering of the water level could lead to the loss of saturated soils and deepens water table), which may effect riparian vegetation health, survivability and susceptibility to invasion by exotic species.

3.5.2. Impacts from the Proposed Action

Direct and Indirect Effects

About 0.46 acres would be occupied by the placement of the fresh water generator and propane tank. Since this area is already disturbed and has very little vegetative cover, no additional impacts to the vegetation are expected. The installation of the flow line would be along an existing road, so some vegetation would be flattened by the pipe, but it should rejuvenate around the pipe once precipitation is received.

Impacts to vegetation would be reduced by following standard practices such as utilizing existing surface disturbance, no clearing of the right-of-way, and quickly establishing vegetation on the reclaimed areas.

Mitigation Measures

If there is any loss of ground cover associated with this action, re-seeding of native grass species will be required.

3.5.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.2.2 above.

Mitigation Measures

If there is any loss of ground cover associated with this action, re-seeding of native grass species will be required.

3.5.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.2.2 above.

Mitigation Measures

If there is any loss of ground cover associated with this action, re-seeding of native grass species will be required.

3.6. **Noxious Weeds and Invasive Plants**

3.6.1. Affected Environment

There are four plant species within the CFO that are identified in the New Mexico Noxious Weed List Noxious Weed Management Act of 1998. These species are African rue, Malta starthistle, Russian olive, and salt cedar. African rue and Malta starthistle populations have been identified throughout the Carlsbad Field Office and mainly occur along the shoulders of highway, state and county roads, lease roads and well pads (especially abandoned well pads). No populations are known in the area of the proposed action and no treatments have occurred in this area. The CFO has an active noxious weed monitoring and treatment program, and partners with county, state and federal agencies and industry to treat infested areas with chemical and monitor the counties for new infestations.

3.6.2. Impacts from the Proposed Action

Direct and Indirect Effects

Any surface disturbance can increase the possibility of establishment of new populations of invasive, non-native species. The construction of the proposed action may contribute to the establishment and spread of African rue and Malta starthistle. The main mechanism for seed dispersion would be by equipment and vehicles that were previously used and/or driven across noxious weed infested areas. Noxious weed seed could be carried to and from the project area by construction equipment and transport vehicles.

Mitigation Measures

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

3.6.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.6.2 above.

Mitigation Measures

None

3.6.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative B. See Impacts from the Proposed Action, section 3.6.2 above.

Mitigation Measures

None

3.7. Cultural Resource Management

3.7.1. Affected Environment

The project falls within the Southeastern New Mexico Archaeological Region. This region contains the following cultural/temporal periods: Paleoindian (ca. 12,000 – 8,000 B.C.), Archaic (ca. 8,000 B.C. – A.D. 950), Ceramic (ca. A.D. 600 – 1540), Protohistoric and Spanish Colonial (ca. A.D. 1400 – 821), and Mexican and American Historical (ca. A.D. 1822 to early 20th century). Sites representing any or all of these periods are known to occur within the region. A more complete discussion can be found in Living on the Land: *11,000 Years of Human Adaptation in Southeastern New Mexico; An Overview of Cultural Resources in the Roswell District, Bureau of Land Management* published in 1989 by the U.S. Department of Interior, Bureau of Land Management.

Native American Religious Concerns

The BLM conducts Native American consultation regarding Traditional Cultural Places (TCP) and Sacred Sites during land-use planning and its associated environmental impact review. In addition, during the oil & gas lease sale process, Native American consultation is conducted to identify TCPs and sacred sites whose management, preservation, or use would be incompatible with oil and gas or other land-use authorizations. With regard to Traditional Cultural Properties, the BLM has very little knowledge of tribal sacred or traditional use sites, and these sites may not be apparent to archaeologists performing surveys in advance of drilling. However, to date no TCPs or sacred sites have been identified in the vicinity of the current project area.

3.7.2. Impacts from the Proposed Action

Direct and Indirect Effects

The proposed action is a surface fresh water poly line that would be adjacent to an existing two-track road or an established access road. The pipeline would have no direct impacts to cultural resources. The generator and propane tank would set at the top of the river at the parking area on disturbed lands and this would have no direct impacts to the cultural resources.

3.7.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.7.2 above.

Mitigation Measures

None

3.7.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.7.2 above.

Mitigation Measures

None

3.8. Visual Resource Management

3.8.1. Affected Environment

The Visual Resource Management (VRM) program identifies visual values, establishes objectives in the RMP for managing those values, and provides a means to evaluate proposed projects to ensure that visual management objectives are met. This proposed project occurs within a Visual Resource Management Class IV zone. The objective of VRM Class IV is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic landscape elements of color, form, line and texture.

3.8.2. Impacts from the Proposed Action

Direct and Indirect Effects

This project would cause some short term and long-term visual impacts to the natural landscape. Short term impacts occur during construction operations. These include the presence of construction equipment vehicle traffic.

Long term impacts are visible to the casual observer through the life of the pipeline. These include the visual evidence of piping which cause visible contrast to form, line, color, and texture. Those contrasts would be visible to visitors in the area.

After final abandonment, the pipeline and associated infrastructure would be removed, reclaimed, recontoured and revegetated, if necessary, thereby eliminating visual impacts.

Short and long term impacts are minimized by best management practices such as utilizing existing surface disturbance, no blading in the right-of-way, color selection and screening facilities with natural features and vegetation.

Mitigation Measures

All surface pipelines would not be placed on top of bushes or trees.

3.8.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.8.2 above.

Mitigation Measures

None

3.8.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative B. See Impacts from the Proposed Action, section 3.8.2 above.

Mitigation Measures

None

3.9. Water Resources

3.9.1. Affected Environment

The area of the proposed action drains in a southernly direction towards the Delaware River. Stream flow occurs in the Delaware River nearly yearlong, with occasional periods of no flow during hot summer months, and it is likely a source of groundwater recharge. The average base flow is 2.6 cubic feet per second (cfs) and measured flow in March was 2.1 cfs. The ground water recharge is from local precipitation entering through playas, sinkholes and swallets. Water quality and quantity is influenced by physical, chemical, and biological reactions that occur as water moves over and through the land surface toward streams and into aquifers. The rate at which water moves through the watershed strongly affects these reactions.

3.9.2. Impacts from the Proposed Action

Direct and Indirect Effects

Ephemeral surface water from local rain events would wash down-slope through the area of the proposed action. Localized decreases in vegetative surface cover combined with the caliche covering the road could result in decreased infiltration rates and increased runoff volume and velocity. This causes increased erosion, top soil loss, and sedimentation. However, since the pump would be placed on existing disturbed surface, on an impervious material and bermed, no additional erosion related impacts are expected.

Water quality can be adversely affected following the occurrence of an undesirable event such as a leak or spill or gasoline or oil from the compressor and/or pump. Water quantity downstream can be impacted if the pump removes more water that is flowing in the Delaware River. However, since the current proposal is to pump 0.45 cfs and the measured flow is 2.1 cfs, the proposed action should not stop downstream flow.

Standard practices or design features of the proposed project that minimize impacts to the watershed and water quality include: utilizing existing surface disturbance, minimizing the access road total surface disturbance, minimizing vehicular use, placing the generator/pump within a bermed area and on top of an impervious layer, and stopping the pumping process once the pond no longer has outflow.

Mitigation Measures

- When downstream discharge out of the pond drops below the staff guage level, then pumping of water would no longer be allowed. Once the pumping stops, flow into the pond would refill the pond and water and downstream flow would be resumed.
- The pump system would be placed on an impervious material to prevent spills or leaks from reaching the soil. The pump system would be bermed, to contain any spill or leak on the impervious material.

3.9.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.9.2 above.

Mitigation Measures

None

3.9.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative B. See Impacts from the Proposed Action, section 3.9.2 above.

Mitigation Measures

None

3.10. **Special Designations (ACECs, WSR)**

3.10.1. Affected Environment

Carlsbad Chihuahuan Desert Rivers (Potential ACEC)

The proposed action falls within an area that is a proposed as the Carlsbad Chihuahuan Desert Rivers Area of Critical Environmental Concern (ACEC), and would appear in at least one alternative in the CFO Resource Management Plan Revision (RMPR) Draft Environmental Impact Statement (DEIS). Carlsbad Chihuahuan Desert Rivers ACEC encompasses an area of approximately 103,833 BLM acres.

An ACEC is an area that is highlighted for special management attention to protect and prevent irreparable damage to important historic, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards. ACEC nominations that meet the relevance and importance criteria are incorporated in appropriate RMP alternatives. Management is developed for each potential ACECs and it is included as a recommended ACEC in at least one RMP alternative.

For an area to be considered as a potential ACEC and analyzed in a resource management plan alternative, an area must meet the criteria, of relevance and importance (R&I), as established and defined in 43 CFR 1610.7-2, and BLM Manual 1613 (Areas of Critical Environmental Concern).

Carlsbad Chihuahuan Desert Rivers potential ACEC met the relevance and importance criterion for:

Relevant and Important Criterion:	Importance Value met
Historic, cultural, or scenic value	Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
	Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
Fish and Wildlife Resources	Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
Natural Process or System	Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
	Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
Natural hazards	Poses a significant threat to human life and safety or to property.

Note: The R&I worksheets for each potential ACEC contain more information on how the area met or did not meet the R&I criterion and is available for review in the CFO Planning and Environmental department.

The primary management objectives of the proposed Carlsbad Chihuahuan Desert Rivers ACEC are to protect the sites and areas of traditional cultural important to Native American tribes; sensitive cave and karst features; threatened vegetative species; and paleontological resources.

Gypsum Soils (Potential ACEC)

Same as Carlsbad Chihuahuan Desert Rivers

Wild and Scenic Rivers (Potential Designation)

The proposed action falls within an area that is proposed as eligible as a Wild and Scenic River. The Bureau of Land Management (BLM) Carlsbad Field Office (CFO) completed the eligibility phase of a Wild and Scenic Rivers (WSR) evaluation as part of a Resource Management Plan (RMP) revision process. In May 2012, the BLM identified two segments, one on the Black River and another on the Delaware River, as eligible for inclusion in the National Wild and Scenic Rivers System (NWSRS). The BLM studied one additional river for eligibility, the Pecos River (three segments), and found that there were no segments along the river that would be eligible for inclusion in the NWSRS.

Congress enacted the WSR Act on October 2, 1968, to address the need for a national system of river protection. As an outgrowth of a national conservation agenda in the 1950s and 1960s, the WSR Act was in response to the dams, diversions, and water resource development projects that occurred on America's rivers between the 1930s and 1960s. The WSR Act stipulated that selected rivers should be preserved in a free-flowing condition and be protected for the benefit and enjoyment of present and future generations. Since 1968, the WSR Act has been amended many times, primarily to designate additional rivers and authorize the study of other rivers for possible inclusion in the NWSRS.

River segments are only added to the NWSRS through an act of Congress or by an act of the legislature of the state upon submission by the governor and approval by the Secretary of the Interior.

3.10.2. Impacts from the Proposed Action

Carlsbad Chihuahuan Desert Rivers (Potential ACEC)

Direct and Indirect Effects

See Riparian Areas Resources section 3.5, Fish or Wildlife Resources section 3.4, Cultural Resource section 3.7, and Vegetation Resource section 3.3 above for further discussion.

Potential threats to the relevant and important values of the proposed ACEC	Potential impact of proposed action
Loss of shoreline habitat	Proposed project would not contribute to additional loss of shoreline habitat
Vertical structures in close proximity to shoreline (within 2 miles)	Proposed project would not contribute to additional vertical structures
Noise disturbance	Proposed project may contribute to additional noise disturbance
Increased areas of surface disturbance	Proposed project would not contribute to additional surface disturbance
Alteration in overland hydrology flow regime	Proposed project would not contribute to an alteration in overland hydrology flow regime

Mitigation Measures

Mitigation measures were developed to mitigate impacts to Wildlife Resources section 3.4, Cultural Resource section 3.7, and Vegetation Resource section 3.3 above.

The following mitigation measures are to be set forth in order to protect the relevant and important value(s) of the proposed Carlsbad Chihuahuan Desert Rivers potential ACEC:

- During nesting season (May 1 – August 31) noise levels will not exceed 49 decibels (dB) at 30 feet
- All active shorebird nests will be avoided by 200 meters.

Gypsum Soils (Potential ACEC)

Direct and Indirect Effects

Same as Carlsbad Chihuahuan Desert Rivers.

Mitigation Measures

Same as Carlsbad Chihuahuan Desert Rivers

Wild and Scenic Rivers (Potential Designation)

3.10.3. Impacts from Proposed Action

Direct and Indirect Effects

To see the Direct and Indirect Effects to the outstanding remarkable values see the resource sections above. Visual Resource section 3.8, Fish and Wildlife section 3.4, and Cultural Values section 3.7.

Mitigation Measures

Reduce the amount of water that can be taken out of the river to ensure that we are still maintaining the free flowing. Ensure that we are protecting the outstanding remarkable values. Ensure that there is no adverse impact to the outstanding remarkable values or the free flow of the river.

3.10.4. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.10.3 above.

Mitigation Measures

None

3.10.5. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative B. See Impacts from the Proposed Action, section 3.10.3 above.

Mitigation Measures

None

3.11. **Air Resources**

3.11.1. Affected Environment

The two components of air resources are air quality and climate. 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.

Air Quality

Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility. The area of the proposed action is within the Pecos River airshed and is classified as a Class II Air Quality Area. A Class II area allows moderate amounts of air quality degradation. The primary causes of air pollution in the project area are from motorized equipment and dust storms caused by strong winds during the spring. Particulates from nearby oil and gas production, agricultural burning, recreational and industrial vehicular traffic and ambient dust can also affect air quality. Air quality in the area near the proposed action is generally considered good, and the proposed action is not located in any of the areas designated by the Environmental Protection Agency (EPA) as “non-attainment areas” for any listed pollutants regulated by the Clean Air Act.

The EPA’s Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2012 found that in 2012, total U.S. GHG emissions were over 6 billion metric tons and that total U.S. GHG emissions have increased by 4% from 1990 to 2012. The report also noted that GHG emissions fell by 3% from 2011 to 2012. This decrease was, in part, attributed to the increased use of natural gas and other alternatives to burning coal in electric power generation (U.S. Environmental Protection Agency, 2014).

Climate

The 2013 Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) states that the atmospheric concentrations of well-mixed, long-lived greenhouse gases (GHGs), including carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), have increased to levels unprecedented in at least the last 800,000 years. Further, human influence has been detected in warming of the atmosphere and the ocean, in changes in the global water cycle, in reductions in snow and ice, in global mean sea level rise, and in changes in some climate extremes. It is *extremely likely* (95 – 100% probability) that human influence has been the dominant cause of the observed warming since the mid-20th century (Intergovernmental Panel on Climate Change, 2013).

Global mean surface temperatures have already increased 1.5 degrees F from 1880 to 2012. Additional near-term warming is inevitable due to the thermal inertia of the oceans and ongoing GHG emissions. Assuming there are no major volcanic eruptions or long-term changes in solar irradiance, global mean surface temperature increase for the period 2016 – 2035 relative to 1986-2005 will likely be in the range of 0.3 – 0.7°C (0.5 – 1.3°F). Global mean temperatures are expected to continue rising over the 21st century under all of the projected future RCP concentration scenarios. Global mean temperatures in 2081 – 2100 are projected to be between 0.3 – 4.8°C (0.5 – 8.6°F) higher relative to 1986 – 2005. The IPCC projections are consistent with reports from other organizations (e.g. NASA Goddard Institute for Space Studies, 2013; The National Academy of Sciences, 2005).

Climate change will impact regions differently and warming will not be equally distributed. Both observations and computer model predictions indicate that increases in temperature are likely to be greater at higher latitudes, where the temperature increase may be more than double the global average. Warming of surface air temperature over land will very likely be greater than over oceans (Intergovernmental Panel on Climate Change, 2013). There is also high confidence that warming relative to the reference period will be larger in the tropics and subtropics than in mid-latitudes. Frequency of warm days and nights will increase and frequency of cold days and cold nights will decrease in most regions. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures are more likely than increases in daily maximum temperatures. Models also predict increases in duration, intensity, and extent of extreme weather events. The frequency of both high and low temperature events is expected to increase. Near- and long-term

changes are also projected in precipitation, atmospheric circulation, air quality, ocean temperatures and salinity, and sea ice cover.

Several activities contribute to the phenomena of climate change, including emissions of GHGs (especially carbon dioxide and methane) from fossil fuel development, large wildland fires and activities using combustion engines; changes to the natural carbon cycle; and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs will have a sustained climatic impact over different temporal scales. For example, recent emissions of carbon dioxide can influence climate for 100 years.

3.11.2. Impacts from the Proposed Action

Air Quality

The winds that frequent the southeastern part of New Mexico generally disperse odors and emissions, however, air quality would be impacted temporarily from exhaust emissions, chemical odors, dust caused by vehicles traveling to and from the project area and from motorized equipment used during construction. Impacts to air quality will diminish upon completion of the construction of the proposed action.

The EPA has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. The state of New Mexico has an EPA-approved state implementation plan that regulates air quality throughout the state, except on tribal lands and within Bernalillo County. The New Mexico Air Quality Bureau's (NMAQB) mission is to protect the inhabitants and natural beauty of New Mexico by preventing the deterioration of air quality. The NMAQB is responsible for: ensuring air quality standards are met and maintained; issuing air quality Construction and Operating Permits; enforcing air quality regulations and permit conditions. Any emission source must comply with the NMAQB regulations.

Impacts to air quality on lands managed by BLM in southeastern New Mexico are reduced by the following standard practices which include: utilizing existing disturbance; minimizing surface disturbance; reclaiming and quickly establishing vegetation on areas not necessary for production; periodic watering of access roads during dry periods; removal and reuse of caliche for building other projects.

Climate Change

Climate change analyses are comprised of several factors, including GHGs, land use management practices, and the albedo effect. The tools necessary to quantify incremental climatic impacts of specific activities associated with those factors are presently unavailable. As a consequence, impact assessment of effects of specific anthropogenic activities cannot be performed. Additionally, specific levels of significance have not yet been established. Qualitative and/or quantitative evaluation of potential contributing factors within the project area is included where appropriate and practicable. When further information on the impacts to climate change in southeastern New Mexico is known, such information will be incorporated into the BLM's NEPA documents as appropriate.

Environmental and economic climate change impacts from commodity consumption are not effects of the proposed planning decisions and thus are not required to be analyzed under the NEPA. They are not direct effects, as defined by the Council on Environmental Quality (CEQ), because they do not occur at the same time and place as the action. Neither are they indirect effects because the proposed plan actions and resulting greenhouse gas emissions production are not a proximate cause of the emissions or other factors resulting from consumption. The BLM does not determine the destination of the resources produced from Federal lands. The effects from consumption are not only speculative, but beyond the scope of agency authority or control. Therefore, this document does not include analysis of the consumption of resources produced as a result of planning decisions.

3.11.3. Impacts from Alternative A

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative A. See Impacts from the Proposed Action, section 3.11.3 above.

Mitigation Measures

None

3.11.4. Impacts from Alternative B

Direct and Indirect Impacts

There is no appreciative difference between the proposed action and alternative B. See Impacts from the Proposed Action, section 3.11.3 above.

Mitigation Measures and Residual Impacts

None

3.12. Impacts from the No Action Alternative

The No Action Alternative is used as the baseline for comparison of environmental effects of the analyzed alternatives. Under the No Action Alternative, the proposed project would not be implemented and there would be no new direct or indirect impacts to natural or cultural resources from the proposed project. The natural and cultural resources in the project area would continue to be managed under the current land and resource uses.

The potential exists, that should the BLM deny the application under the no action scenario, the proponent could choose a location off public lands on State or private land in Texas, to develop their water right. This could potentially be more detrimental to the natural resources than any of the action alternatives, as the agency would have no ability to impose mitigation, COAs, or BMPs to address the location or routing of infrastructure; exceedance of water volume, or water levels dropping below acceptable standards.

3.13. Cumulative Impacts

Cumulative impacts are the combined effect of past projects, specific planned projects, and other reasonably foreseeable future actions within the project study area to which oil and gas exploration and development may add incremental impacts. This includes all actions, not just oil and gas actions, that may occur in the area including foreseeable non-federal actions.

The combination of all land use practices across a landscape has the potential to change the visual character, disrupt natural water flow and infiltration, disturb cultural sites, cause minor increases in greenhouse gas emissions, fragment wildlife habitat and contaminate groundwater. However, the likelihood of these impacts occurring is minimized through standard mitigation measures, special Conditions of Approval and ongoing monitoring studies.

All resources are expected to sustain some level of cumulative impacts over time, however these impacts fluctuate with the gradual abandonment and reclamation of wells. As new wells are being drilled, there are others being abandoned and reclaimed. As the oil field plays out, the cumulative impacts would lessen as more areas are reclaimed and less are developed.

4. SUPPORTING INFORMATION

4.1. List of Preparers

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Date: March 27, 2014

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Pecos District
Carlsbad Field Office
620 E Greene Street
Carlsbad, NM 88220
Finding of No Significant Impact
DOI-BLM-NM-P020-2014-0794-EA

Glenn's Water Well Service, Inc.
Delaware River to COG's HoneyGraham Frac Pond Fresh Water Pipeline
Serial No.: NM-132228

FINDING OF NO SIGNIFICANT IMPACT:

I have determined that the proposed action, alternative A and alternative B, as described in the EA would 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:

1. The activities described in the proposed action, alternative A and alternative B do not include any significant beneficial or adverse impacts (40 CFR 1508.27(b) (1)). The EA includes a description of the expected environmental consequences of the proposed action and all practical means to avoid or minimize environmental harm have been adopted.

2. The activities included in the proposed action, alternative A or alternative B would not significantly affect public health or safety (40 CFR 1508.27(b) (2).

3. The proposed activities would not significantly affect any unique characteristics (40 CFR 1508.27(b) (3)) of the geographic area such as prime and unique farmlands, caves, wild and scenic rivers, designated wilderness areas, wilderness study areas, or areas of critical concern. No such areas exist in the project area to be affected.

4. The activities described in the proposed action, alternative A and alternative B do not involve effects on the human environment that are likely to be highly controversial (40 CFR 1508.27(b) (4). The effects on the quality of the human environment are not likely to be highly controversial because there is no known scientific controversy over the impacts of the project.

5. The activities described in the proposed action, alternative A and alternative B do not involve effects that are highly uncertain or involve unique or unknown risks (40 CFR 1508.27(b) (5). The BLM has considerable experience with the types of activities to be implemented. The effects analysis (EA, Chap 3) shows the effects are not uncertain, and do not involve unique or unknown risk.

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) because it conforms to all existing BLM plans and is applicable to the project area.

7. The effects of the placement of the pump and construction of the pipeline would not be significant, individually or cumulatively, when considered with the effects of other actions (40 CFR 1508.27(b)(7)). The EA discloses that there are no other connected or cumulative actions that would cause significant cumulative impacts. The cumulative impacts are not significant.

8. I have determined that the activities described in the proposed action, alternative A and alternative B would 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)).

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)). The action would not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species act of 1973.

10. The proposed activities would 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)). Applicable laws and regulations were considered in the EA (See EA Chap 1.4). This action is consistent with the Resource Management Plan, pages AP2-8, AP2-9.

APPROVED:

George MacDonell Field Manager Carlsbad Field Office	Date