ENERGEN
RESOURCES

November 11, 2003

New Mexico Oil Conservation Division
Attn: Michael E. Stogner
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: ADMINISTRATIVE APPROVAL OF UNORTHODOX LOCATION
ELKHORN #101
1975' FNL & 1870' FEL
SECTION 29-T32N-R5W
RIO ARRIBA COUNTY, NEW MEXICO

Dear Mr. Stogner:

Pursuant to Energen Resources Corporation's (Energen) letter dated November 7, 2003, erroneously the letter from the Bureau of Land Management (BLM) along with the Environmental Assessment was not enclosed.

Enclosed is a well plat showing the dedicated acreage, a topographic plat of the area, a map showing offsetting operators or owners, a letter from the BLM and Environmental Assessment.

I apologize for any confusion this may have caused and if you should have any questions please contact Richard Corcoran at the number listed.

Sincerely,

Gillian Armenta

Gillian Armenta
Land Assistant

ga

Enclosures

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

Farmington Field Office
1235 La Plata Highway, Suite A
Farmington, New Mexico 87401

TAKE PRIDE IN AMERICA

In Reply Refer to:
NMNM4461 (07300)

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ENERGEN
FARMINGTON

Mr. Rich Corcoran, Lands Manager
Energen Resources Corporation
2198 Bloomfield Highway
Farmington, NM 87401

Dear Mr. Corcoran:

The intent of this letter is to document the Bureau of Land Management's (BLM) position concerning the relocation of the Elkhorn 101 gas well located at: T.32N, R5W, 755' FNL 2,375' FEL of section 29. As you know the original location of this well was on top of Quintana Mesa in an area that has been identified as important winter range for mule deer and as an elk calving area in the Farmington Proposed Resource Management Plan and Final Environmental Impact Statement (2003). Over the past 6-to-7 years this area has been the focus of considerable wildlife habitat improvement activity. The BLM has been implementing a series of thinning, burning, and seeding projects in the pinyon-juniper habitat type which pervades Quintana Mesa. Additional prescribed fire will be applied to some of the thinned areas this fall followed by the seeding of cool season grasses, forbs, and browse species conducive to use by wintering mule deer. In addition, the BLM is going to replace the existing wildlife guzzler on Quintana with a new one in the spring of 2004. Old roads leading up to and across Quintana Mesa were closed 10-to-15 years ago to provide wildlife a more secure area. The culmination of these projects represents a long-term commitment of considerable effort and expense by the BLM and sportsmen's groups to improve the habitat on Quintana Mesa for mule deer and elk.

It should be noted also that the habitat improvements on top of Quintana Mesa represent an effort to mitigate the extensive and highly disruptive natural gas activity in the lowlands to the west of Quintana Mesa. Considerable habitat has been lost or fragmented in this area due to roads, pipelines, and well pads. The intent of improving the habitat on top of Quintana Mesa was to provide wintering deer an alternative to massing in the degraded habitat below. Field observations over the past several years have noted a dramatic decline in the quantity and quality of the deer winter habitat in Eul Basin and the area north of Cabresto Canyon. Thus, when the BLM was presented with a request to build 4,300 feet of new roads, install 9,300 feet of gas and water pipelines, and drill 3 new wells on Quintana Mesa, our wildlife biologist felt that the mitigation efforts on top of Quintana Mesa would be compromised if this action went forward as proposed.

BLM believes that the natural gas reserves associated with the Elkhorn 101 can be adequately retrieved with a non-standard location and that requesting this action is commensurate with the BLM's mandate, and the public's desire, for multiple resource management. The Quintana Mesa area is the most densely populated and heavily used deer winter range in northwest New Mexico. It is the BLM's belief that given the magnitude of the existing and future perturbations in this area that mitigation work of the type currently underway on Quintana Mesa is essential to the well being of the mule deer population. In the absence of this type of mitigation work, it is BLM's belief that the mule deer population in this area will

suffer. Therefore, BLM believes that it is justified and appropriate for the Elkhorn 101 to be drilled in a non-standard location.

A copy of the environmental assessment of the Elkhorn wells, access roads, and pipelines is enclosed for your reference. Questions of a specific nature concerning the wildlife resources in the Quintana Mesa area can be directed to John Hansen of my staff at 505-599-6325.

Sincerely,

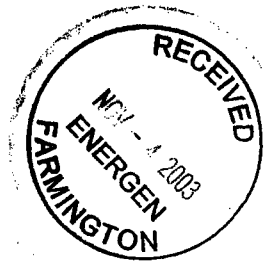
Robert Moore

for Steve Henke
Field Manager

1 Enclosure

Project: Elkhorn # 100S, Elkhorn # 101, Elkhorn # 101S
EA Log #: NM-070-03-669, Location(s) T. 32N., R. 05 W., Sec. 29, Lease # NM-4461

FINDING OF NO SIGNIFICANT IMPACT AND DECISION OF RECORD



Project: Three Fruitland Coal Wells Pipelines and Access Roads
Applicant: Energen Resources, Corp.
Address: 2198 Bloomfield HWY, Farmington NM 87401

BLM Office Farmington District Office Phone # (505) 599-8900

FINDING OF NO SIGNIFICANT IMPACT

Impact identification and analysis of approving the project and/or alternative(s) has been completed. A complete and comprehensive environmental analysis has been conducted. Completion of the environmental assessment (see attachment 1), along with implementation of required stipulations and/or mitigating measures, will result in (projected) impacts to resource values being restored to pre-projected conditions and/or acceptable post-project standards. Further analysis in an environmental impact statement is not needed.

DECISION OF RECORD

DECISION: Based upon the analysis, it is my decision to approve the relocation alternative # 3. A coordination meeting will be scheduled in the near future with Energen to find a location to directionally drill the Elkhorn # 101S and the Quintana Mesa # 100 pipeline addressed in this EA. A portion of the Quintana Mesa # 100 pipeline (approximately 400') is on lands administered by the U.S. Forest Service, Jicarilla Ranger District and is addressed in this EA.

RATIONAL: This determination is made considering the following factors:

1. If the APD's are approved, the BLM would review the surface use plans and identify site-specific mitigation and constraints to protect surface resources.

2. The context for this decision involves potential impacts to wildlife habitat, soil erosion on steep slopes, cultural and visual resources. Because of the small amount of surface disturbance associated with relocation alternative # 3 compared to the other alternatives, mitigation measures such as APD conditions of approval will avoid or minimize potential impacts to these resources.

3. Production history in the San Juan Basin has demonstrated that there are no unique risks. An Environmental Analysis for APD's would address additional mitigation. The effects of oil and gas exploration and production are known and based on experience will be mitigated.

4. The effects on the human environment have not been controversial in the past and the public has not voiced opposition to new wells being drilled in this area.

5. Cumulative or secondary effects on soil erosion, culture resources, wildlife resources and habitat were considered and found acceptable with mitigation. Partial reclamation will occur during the production phase of these wells and full reclamation will occur after final abandonment.

6. A lease bond is required for all Federal leases.

7. Federal and State of New Mexico Threatened and Endangered species have been considered. There are no known Federal or State listed species in the area.

8. A culture and historic resource level 3 inventory has be conducted on the area approved for relocation alternative # 3. Impacts to cultural and historic resources will be avoided and/or mitigated. This will be done under the direction of the Farmington Districts Cultural Resource Specialist(s).

9. The relocation alternative # 3 is consistent with the Farmington Districts EIS-RMP.

10. The scope of this action, alternatives, and impacts has been considered in relation to 40 CFR 1508-24. The direct, indirect, and cumulative impacts have been considered in relation to 40 CFR 1508-24 and will not affect the quality of the human environment.

STIPULATIONS

Stipulations and/or mitigating measures were considered and analyzed in the environmental assessment. Based on impact analysis, specific stipulations and/or mitigating measures have been selected (see attachment 2) and are attached to the approved
The applicant is responsible for implementing these stipulations to prevent and/or reduce impacts projected to occur during and after project completion.

Prepared by Bill Ness Date 7/31/03

Reviewed by _____ Date 7/31/03
Lead Environmental Protection Specialist

Reviewed by _____ Date 8/4/03
Assistant Field Manager for L&RR

Approved by _____ Date 8/7/03
Farmington Field Office Manager

Project
Location(s) T. 32 N., R. 5 W., Sec. 29
File Code 4211

EA Log # NM070-03-669
Lease/Serial # NM-4461

PROGRAM CONSULTATION & COORDINATION/EA CHECKLIST

Project: Elkhorn # 101, 101S, 100S
Applicant: Energen Resources, Corp.
Address: 2198 Bloomfield HYW, Farmington, NM 87401

BLM Office Farmington District Office Phone # (505) 599-8900

The following resource components, as well as the standard program requirements, have been considered in this environmental document. Resource staff and/or specialists have signed and dated each section as review and/or preparation of these sections has been completed for this environmental assessment.

Will Be Impacted		Can Be Mitigated			Specialist Signature/Date
Yes	No	Yes	No		
( )	(X)	( )	(X)	T&E Plants/Animals	BML 7-28-03
( )	( )	( )	(X)	Floodplains and Wetlands	- -
( )	( )	( )	(X)	Wilderness Values	- -
( )	(X)	( )	( )	ACECs/SMAs	- -
( )	(X)	( )	( )	Hazardous or Solid Wastes	- -
( )	(X)	( )	( )	Water Quality/Drinking/Ground	- -
( )	(X)	( )	( )	Air Quality	BML 7-28-03
( )	( )	( )	( )	Cultural or Historic Resources	
( )	(X)	( )	( )	Paleontological Resources	BML 7-28-03
( )	(X)	( )	( )	Prime or Unique Farmlands	BML 7-28-03

Consultation and/or Coordination with appropriate resource (and district) staff specialist has been completed with specialists signing and dating each section as review(s) and information is provided for this environmental assessment.

Conflict Map Ck'd		Will Be Impacted		Can Be Mitigated			Specialist Signature/Date
Yes	No	Yes	No	Yes	No		
(X)	( )	( )	(X)	( )	( )	Lands	BML 7-28-03
(X)	( )	(X)	( )	(X)	( )	Minerals	- -
(X)	( )	(X)	( )	(X)	( )	Wildlife	- -
(X)	( )	(X)	( )	(X)	( )	Recreation	- -
(X)	( )	(X)	( )	(X)	( )	Range	- -
(X)	( )	( )	(X)	( )	( )	Forestry	BML 7-28-03
(X)	( )	(X)	( )	(X)	( )	Cultural	
(X)	( )	( )	(X)	( )	( )	Air/Soil/Water	BML 7-28-03

STIPULATIONS

Project: Locations of the Elkhorn # 101, 101S and 100S
Applicant: Energen Resources Corporated
Address: 2198 Bloomfied HWY, Farmington, NM 87401

BLM Office Farmington District Office Phone # (505) 599-8900

The following stipulations and/or approved mitigating measures will be implemented during (1) the various stages (if specified) of project development/operation and (2) up to 30 Years after construction is completed for this project. If problems arise during or after field work is completed, the applicant/contractor(s) is required to promptly notify the authorized representative. Consultation between the applicant/contractor(s) and the Bureau's authorized representative may result in additional field work being required of the applicant/contractor(s) to fully implement one or more of the following stipulations.

(Note: Short listings of stipulations may be presented in the order they would be required during project development. Longer lists of stipulations, if applicable, would be presented by stages of development for each resource components(s). The last approach is to be considered and used for more complex projects to (1) insure all stips/mitigating measures are included in the list of stipulations and (2) facilitate the applicant/contractor(s) use and implementation of the list of required actions.)

1. All standard Conditions of Approval will apply.

2. All special APD conditions of Approval will apply.

3. A level 3 cultural and historic resource inventory will be performed and any impacts to cultural resources mitigated before any area is disturbed.

4. All standard and special right-of-way stipulations will apply.

ENVIRONMENTAL ASSESSMENT FOR

ENERGEN RESOURCES, CORP.

Quintana Mesa Fruitland Coal Project

RIO ARRIBA COUNTY, NEW MEXICO
FARMINGTON FIELD OFFICE
BUREAU OF LAND MANAGEMENT

Prepared By: Farmington District Office
Bureau of Land Management
June 16, 2003

INTRODUCTION (HISTORY)

A pinyon/juniper habitat type dominates the top of Quintana Mesa. This area provides critical winter habitat for 60 to 100 mule deer. In the 1960s approximately 250 acres, or the majority of the mesa top, was chained as a means to increase the available forage for livestock and wildlife. This treatment resulted in a proliferation of understory browse, grasses and shrubs. Over time the pinyon/juniper re-invaded the treatment area. In response to this the BLM embarked upon a vegetation treatment program utilizing a different method. In 1997, using chainsaws, the BLM initiated a systematic thinning of the pinyon/juniper. This was followed up with the application of prescribed fire and seeding into the ash. Thus far, the results of these efforts have been very encouraging. The total scope of the completed and planned treatments on Quintana Mesa will be about 250 acres. In addition, a project of a similar nature is also planned for this year on the north face of Quintana as it drops down into Eul canyon. The intent of this project (about 170 acres) is to provide additional deer winter range. The deer winter range in the lowlands below has been severely degraded, thus it is imperative that other forage be generated. The estimated total cost of all these projects combined is approximately $50,000.

In addition to the above measures, the Farmington BLM negotiated a retirement of the livestock grazing in this area as a means to reduce any competition between livestock and mule deer for browse such as antelope bitterbrush and mountain mahogany. Compensation to achieve this retirement cost approximately $60,000.

The BLM also intends to construct a new inverted umbrella watering device on Quintana Mesa to provide water for wildlife. This will augment a pond in Eul Canyon, a guzzler on the North face of Eul Canyon, 2 ponds on Carracas Mesa, and a solar powered well in the bottom of Eul Canyon. Installing a new inverted umbrella and removing the old worn out one will cost about $14,000.

In summary, the Quintana Mesa area is an integral part of the most heavily used deer winter range in the Farmington Field Office. It is extremely important that this area be retained free from human intrusion so that continued habitat improvements can take place without fear of their benefits being compromised by human activity.

There is only one well in the vicinity of the mesa top, this is the Quintana Mesa # 100. The Quintana Mesa # 100 was drilled in 1992 by Meridian Oil Company (now Burlington Resources), but has never been produced because a pipeline to transport gas from this well was never constructed. Energen has recently obtained these leases and wants to put the Quintana Mesa # 100 in to production and bring water and gas pipelines to the bottom of the mesa. These pipelines would hook up to Energen's San Juan 32-5 Unit water system and Williams Field Service gas system. Therefore, the proposed action and all alternatives will include pipelines from the Quintana Mesa # 100 to systems in the 32-5 Unit.

I. PURPOSE AND NEED

This environmental assessment (EA) is prepared to address the impacts of Applications for Permit to Drill (APD), a new road and two pipelines (gas and water) for the Elkhorn #

100S, 101, 101S and the Quintana Mesa # 100 (pipeline only). These wells would be drilled to the Basin Fruitland Coal formation, and would be drilled on public land located on Quintana Mesa, Rio Arriba County, New Mexico. The company filed APDs for the Elkhorn # 101and 100S with the Bureau of Land Management (BLM), Farmington Field Office. These APD's are filed to initiate development of the Elkhorn # 101, and 100S on Federal Lease NM 4461. The Elkhorn 101S has not been stake as of yet, but Energen will want this well on top of the mesa. These wells are proposed by Energen as part of their continued development of this lease. The access roads would be constructed in an area with topographic constraints. Because of the type and extent of the influencing effects associated with drilling these wells and the impacts associated with the proposed locations, pipelines and access are considered in this EA.

PROPOSED ACTION AND ALTERNATIVES

PROPOSED ACTION: Energen proposes to construct access roads, gas and water pipelines and well pads to drill the Elkhorn # 101, 100S and the 101S. The wells would be drilled to the Fruitland Coal formation and upon completion of the drilling phase, equipment would be moved onto the location to complete work on these wells and place them into production. The three wells are located in Township 32 North, Range 5 West, section 29. There is a substantial change in elevation from the top of this mesa into Eul Canyon. This mesa is fairly flat through its entire length and can accommodate the 225 foot by 275 foot pads required for the drilling and use of a Fruitland Coal gas well. As a result the company proposes to build 4300 feet of new access road to access these locations. The access will begin at the existing Quintana Mesa # 100 located in section 28, Township 32 North, Range 5 West on US Forest Service lands and will transverse 3800 feet of mesa top to the Elkhorn # 101, then from the Elkhorn # 101 to the location of the Elkhorn # 100S, which will need another 1500' of road for a total of 4300 feet of new access on top of Quintana Mesa. Two gas and water pipelines would follow the new road 4300 feet then another 5000 feet of pipeline will be built to Energen's water and Williams gas systems located at the bottom of the mesa. Total pipeline disturbance is approximately 9300 foot long. Total disturbance for the proposed action would be 15.62.

RELOCATION ALTERNATIVE # 1

The relocation alternative #1 would change the way that Energen would access the Mesa top but would not change the positions of the three well pads. This access road would begin at the existing Elkhorn # 100 well pad located in the SW quarter of section 29, Township 32 North, Range 5 West, 725 feet from the south (section) line and 800 feet from the west (section) line, and proceed up-slope northeast approximately 4500 feet onto the mesa top, then another approximately 4400 feet across Quintana Mesa to where the proposed well locations are located. This road will follow a existing closed road for its entire length except where archeology forces Energen not to use existing disturbance. The access will also disturb pristine benches on the northwest side of Quintana Mesa; these benches below the mesa are unparalleled for the vegetation they support and big game habitat, with p-j, ponderosa pine, mountain mahogany, bitterbrush, and Gambel's oak making up most of the vegetation represented in this environment. This alternative would also create more disturbance even though this

access will follow an existing abandoned road. Total disturbance for the Relocation Alternative # 1 is 18.61 acres.

RELOCATION ALTERNATIVE #2

This alternative would change the location of the Elkhorn # 100S, 101. and 101S well pads and the access roads from the mesa top to the bottom on previous disturbed lands. If geology is important to the location of these wells then this alternative will consider a different drilling location but the same bottom hole locations stated in the Notice of Staking (NOS). The most feasible methods to do this is to find locations for this well (on lease) close to existing roads and well pads then use the latest technology to either directionally drill to the geological formation or drill to the depth of this formation and then horizontally drill until the bottom hole legal description is reached. This alternative could possibly be done without any new road construction, which would limit the total disturbance to three, 225 foot, by 275 foot drilling pads or 8.39 acres of disturbance.

RELOCATION ALTERNATIVE # 3

The relocation alternative # 3 would use the # 2 alternative road for approximately 3000 feet up towards the top of Quintana Mesa. Then the road would drop off onto a fairly flat bench on the north side of Quintana Mesa and proceed along this bench to a 225' X 275' well pad in the NW quarter of section 29. This location would be to the Elkhorn # 100S and would be in the New Mexico Oil Conservation Division (NMOCD) spacing window for Fruitland Coal gas wells in that quarter section. This location would not require directional or horizontal drilling and could be a vertical well bore. The access road would then leave the well pad of the Elkhorn # 100S and continue east along the same bench for approximately 2200' to the well pad for the Elkhorn # 101. With no road being built on top of Quintana Mesa, the Elkhorn # 101S would require Energen to directional drill from the NE quarter of section 32, T32N, R5W. This directional well would need the Bureau of Land Management inspector and an Energen representative to find an appropriate area for the well pad to be built. Preliminary investigations in this area found that a well pad should not be a problem to build and technology on directional drilling is in place. This alternative will require two pipelines (gas and water) from the Quintana Mesa # 100 well across the mesa top and continue on down the road that will be used in alternatives 2 and 3. These pipelines will be placed within a 40' right-of-way and will connect to Energen's water system to their Salt- water disposal will in Eul Canyon and Williams gas system. A portion (approximately 400') of both the gas pipeline and the water pipeline is on lands administered by the U.S. Forest Service, Jicarilla Ranger District. The impacts to Forest Service lands are minimal in that 200'of these pipeline rights of Ways are on the previously disturbed well pad of the Quintana Mesa # 100. Therefore the total new disturbance on lands managed by the Forest Service will be 0.39 acres, which should all be recontoured and seeded thus minimizing the impacts on Forest Service lands.

ALTERNATIVES CONSIDERED BUT DROPPED FROM FURTHER CONSIDERATION

The NO ACTION alternative is to deny Energen's APDs. Under this alternative, the

Elkhorn # 100S, 101 and 101S would not be drilled. Current land and resource uses would continue to occur in the areas for access road and well pad construction. Under the terms of valid federal mineral leases, the lessee has the right to develop mineral resources. Other laws, regulations, and policy include provisions for the economic development of existing leases. By federal law, the government must abide by the terms, conditions, and provisions agreed to when leases are issued. In the Council of Environmental Quality (CEQ) regulations (40 CFR 1500.3), it states that Parts 1500 - 1508 of this Title provide regulations applicable to and binding on all Federal agencies for implementing the procedural provisions of the National Environmental Policy Act of 1969,..."**except where compliance would be inconsistent with other statutory requirements**". The No Action Alternative is, therefore, not considered or analyzed in this environmental assessment. Emphasis will be placed on other sections of the CEQ regulations, particularly section 1500.2 "**....to restore and enhance the quality of the human environment**" and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment.

II. AFFECTED ENVIRONMENT

There are no Wilderness or Wilderness Study Areas that will be affected and there are no known Threatened or Endangered species, wetlands, prime farmlands, ACEC's, or Paleontology resources that will be impacted by either the proposed action or the relocation alternatives. The Proposed Action and Alternatives are within the same geographical area, therefore a discussion of affected environment will be for the proposed action and all alternatives.

The topography and slope in the area of the proposed action and alternatives have discouraged attempts to develop minerals for thirty years or more. Near vertical steep sided canyons with narrow intermittent benches best describes the affected area **(a topographical map of the area is included)**. The vegetation found in the affected area is characteristic of an arid plant community, which consists of a wide variety of vegetation types depending on the elevation and soil type. Grasses in this area range from Indian rice grass in the lower elevations to galleta and blue grama in the higher elevations. The dominant shrub species on the mesa tops and uplands consists of pinon-juniper with sagebrush interspersed as the dominant shrub species at the lower elevations. Within the sagebrush community, there are areas along the drainage bottoms that are dominated by rabbit brush. This species seems to form a buffer between the arroyos and areas dominated by sagebrush. Above the arroyos the badland shale-clay soil type becomes dominant and this soil type supports very little vegetation, with a variety of buckwheat species becoming the more aggressive species in the badland type soils.

The area of the proposed action and the relocation alternatives are in the San Juan River Basin. The San Juan River and Navajo Reservoir is the only perennial water in the immediate area (two miles west). Washes and arroyos flow only during and after thunderstorms. These storms can be very intense, but localized, and can create sizeable stream flows in washes and arroyos, with flash flooding being a common occurrence in this area. The type of soil and vegetation has a major effect on the amount of precipitation that becomes runoff. Storm and annual runoff varies in this

area with the amount of bare ground, vegetative cover and litter from vegetation (as runoff increases, vegetation and litter decrease). Increased runoff amounts increases water velocity, which in turn causes proportionally greater erosion and generates more transported sediments and channel pollutants. Water quality of both perennial streams and ephemeral runoff decrease with (1) lower stream flows and (2) in the middle and lower reaches of streams and arroyos. Soil conditions that result in the formation and development of canyons, arroyos, and gullies also contribute to poor water quality in this area.

A cultural resource inventory is required prior to any surface disturbance on either the proposed action or the relocation alternatives. Cultural resources are prevalent throughout the project area, but APD Conditions of Approval state that if during any surface disturbing operations, the operator discovers any previously unidentified historic or prehistoric cultural resources, work will be suspended in the area and a discovery will be reported to the BLM immediately. The cultural report for Alternative # 3 has been submitted to the BLM, FFO Cultural specialists and will be approved with Cultural stipulations.

The proposed development of the Energen's wells, pipelines and access roads to all four alternatives may present watershed concerns in this area. Poor soils, sparse vegetation, steep topography, and short duration - high intensity precipitation events are factors that have an effect on this watershed. Disturbance associated with the Proposed Action and Alternative # 1, 2 and 3 may result in changing the existing soil integrity. Consequently, the soil in the area of the disturbance will become loose, friable and easily susceptible to rill, gully, and wind erosion. Loss of vegetative cover can further accelerate the existing erosion problem. Vegetation helps intercept rainfall by absorbing the energy of falling raindrops, decreases surface run-off velocity, restrains soil particle movement, and improves soil aggregation and porosity resulting in increased storage capacity of any soil.

The proposed construction activities from all alternatives may impact water quality in the watershed. The susceptibility of the soils in this area to wind and water erosion can result in increased siltation and sediment loads to the watershed. Precipitation events will dissolve and percolate salts from the disturbed soils at a higher rate, which can increase the salt content of the precipitation that becomes runoff.

Air quality will be affected for a short duration during the initial construction phase of development but should subside after partial reclamation and reseeding of disturbed areas.
There may be some effect if compressors are used on these locations, but the New Mexico State Environmental Division will manage air quality.

Production history in the affected area has demonstrated that there are no unique or unknown risks to ground water. The effects of oil and gas exploration and production on ground water are known, and based on experience will be mitigated before ground water is affected.

Narrow steep sided canyon land, and nearly flat mesa tops best describes the area of

the proposed action and alternatives. The canyon type topography of this area deters any type of normal oil field construction practices for access roads because of the near vertical canyon faces and intermittent benches located above the canyon floor. The proposed access roads onto the mesa will transverse prime and unique big game habitat. The primary soil type affected by all alternatives consists of a sandy clay loam upland soil type with scattered washes or arroyo bottoms draining away from the mesa rim. This soil type has less erosion potential because it supports a variety of vegetation, which consists mainly of pinon-juniper, bitterbrush, sagebrush, blue grama, Indian rice grass and galleta. The primary vegetation affected in this area will be a pinon-juniper, bitterbrush community with very little grass being supported in the understory. Low numbers of grasses and forbs are characteristic of this habitat type.

III. ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION AND RELOCATION ALTERNATIVES # 1, 2 and 3

The proposed action and Alternatives will not affect any T&E species, floodplains, wetlands, wilderness values, ACEC's, paleontological resources, cultural resources, or prime and unique farmlands. The Proposed Action is within a Special Management Area (SMA) for wintering habitat for big game animals, therefore a timing stipulation will be attached for big game winter range.

WATERSHED AND EROSION: The topography and slope in the area of the proposed action and alternatives is characterized by steep pinon / juniper ridges and nearly flat mesa tops which assend to canyon bottoms dominated by sagebrush **(a topographical map of the area is included in the APD).** The vegetation found in the affected area is characteristic of an arid plant community, which consists of a wide variety of vegetation types depending on the elevation and soil type. Grasses in this area range from Indian rice grass in the lower elevations to galleta and blue grama in the higher elevations. The dominant shrub species on the mesa and arroyo uplands consists of pinon-juniper at higher elevations and sagebrush at lower elevations. The area of the proposed action is in the San Juan River Basin. The San Juan River arm of Navajo Reservoir is the only perennial water in the immediate area (2 miles west). Washes and arroyos flow only during and after thunderstorms. These storms can be very intense, but localized, and can create sizeable stream flows in washes and arroyos, with flash flooding being a common occurrence in this area. The type of soil and vegetation has a major effect on the amount of precipitation that becomes runoff. Storm and annual runoff varies in this area with the amount of bare ground, vegetative cover and litter from vegetation (as runoff increases, vegetation and litter decrease).
The proposed development of the Elkhorn # 100S, 101 and 101S and Alternatives may present watershed concerns in this area. Poor soils, sparse vegetation and short duration - high intensity precipitation events that are prevalent in the area are factors that have an effect on this watershed. Disturbance associated with the Proposed Action and alternatives can result in changing the existing soil integrity. Consequently, the soil in the area of the disturbance may become loose, friable and easily susceptable to rill, gully, and wind erosion. Loss of vegetative cover can further accelerate the existing erosion problem. Vegetation helps intercept rainfall by absorbing the energy of falling raindrops, decreases surface run-off velocity, restrains

soil particle movement, and improves soil aggregation and porosity resulting in increased storage capacity of any soil.

The proposed locations, access roads and pipelines are located in a p-j woodland area. They are situated on a mesa top or benches that over looks and drains into the Eul Canyon and the San Juan River arm of Navajo Reservoir. The thin soils and poor strength bearing capabilities can make for frequent maintenance problems on well pads and roads. This is evident by the existing roads in the area, which are heavily rutted and have severe drainage problems. The under story of the piñon-juniper is very sparsely vegetated. Very few soil binding grasses and forbs are present. Revegetation and slope stability can be difficult to achieve and maintain. Any disturbance to these thin and sparsely vegetated soils can increase soil erosion and sediment load to the watershed.

The proposed construction activities for the proposed action and alternatives may impact water quality in the watershed. The susceptibility of the soils in this area to wind and water erosion can result in increased siltation and sediment loads to the watershed. Precipitation events will dissolve and percolate salts from the disturbed soils at a higher rate increasing the salt content of the precipitation that becomes runoff.

CULTURAL RESOURCES: A cultural resource inventory is required prior to any surface disturbance activities on the proposed action. Cultural resources are prevalent throughout the project area of the Proposed Action and Alternatives, but APD Conditions of Approval state that if during any surface disturbing operations, the operator discovers any previously unidentified historic or prehistoric cultural resources, work will be suspended in the area and the discovery will be reported to the BLM immediately. A cultural clearance has been approved for this project with cultural stipulations .

AIR QUALITY: Air quality will be affected for a short duration during the initial construction phase of development and for the long-term if a compressor is placed on this location but should subside after pipeline pressure is reduced.

GRUOND WATER: Production history in the affected area has demonstrated that there are no unique or unknown risks to ground water. The effects of oil and gas exploration and production are known, and based on experience will be mitigated before ground water is affected. The area of the Proposed Action and alternatives is not within the New Mexico Oil Conservation Division and BLM's Vulnerable Area for ground water concerns.

SOILS: The entire disturbance for the proposed action and alternatives will be subject to erosion for possibly two years until seeding matures, then portion of the roads and well pads will remain as bare, compacted soil for the life of the project (plus or minus 30 years) ..... The proposed location is located in the Rock-outcrop-Travessilla-Weska complex, extremely steep mapping unit (see Rio Arriba County Soil Survey). This map unit is found on hills, breaks, and mesas. The slopes vary from 30 to 70 percent. The predominate vegetation is piñon and juniper on the ridge tops and sagebrush in the lower elevations.

The Travessilla soil is a sandy loam that is shallow and well drained. It was formed in residuum derived mainly from sandstone. The permeability is moderately rapid and available water capacity is very low. Runoff is very rapid and the hazard of water and wind erosion is severe.
The Weska soil is also shallow and well drained. It was formed mainly in residuum derived mainly from shale. It has a moderately slow permeability and an available water capacity that is very low. Runoff is very rapid and the hazard of water erosion is severe. The hazard of soil blowing is moderate.

The potential plant community on the Travessilla and Weska soils is mainly juniper, piñon, sideoats grama and blue grama. This soil type is not suited for earthen structures, road building, etc because of the shallow soil depths, slopes, and low weight bearing strengths. An estimated average sediment yield of 2.75 tons/acre/year is characteristic for this soil type.

Soils disturbed by these actions can result in a temporary displacement, compaction and mixing of soils within the area of disturbance. Due to the moderate to severe potential of project area soils for water and wind erosion, the entire disturbance will be subject to an undetermined amount of erosion until vegetation is established. All disturbed areas not utilized by the roadway or supporting equipment will be contoured and seeded with the appropriate (stipulated) seed mixture. Seeding will reduce or minimize the effects of wind and water erosion. Diversions above and below the cut slopes will keep a majority of the run-off away from the disturbance, thus reducing the impacts associated with water erosion. Culvert pipes, water bars, drainage dips and humps will keep water from eroding the pipeline and access road to these projects. A complete description of this soil type can be found in the Rio Arriba County Soil Survey.

RANGE: The area of the proposed action and alternatives have been retired from grazing and does not have any livestock grazing except for feral horses that inhabit the area. This area is basically undisturbed containing native vegetative communities and once disturbed and rehabed the setting will become more attractive to free roaming horses. The proposed action and the alternatives are located within p-j woodland habitat; seeding grass species would benefit a grazing allottee and diversify the species composition. This disturbance will create a long-term scar within the existing vegetation community. The critical part of any range management plan is to maintain enough vegetation cover to protect the soil profile from erosion, therefore, several mitigation measures will be implemented to minimize the affects resulting from the construction of the proposed action.

Following the construction, all disturbed cut and fill slopes will be reseeded using BLM specified seed mixture. Following the removal of the vegetation, there will be a change in species composition. The seed mixture is designed with emphases on native species to facilitate the growth of vegetation and reduce the impacts of soil erosion.

The top 6" of soil will be stripped off and stockpiled in the construction zone of the well pad. This topsoil will then be spread on the reclaimed portions of the well pad prior to

seeding. After 90 days from well completion the reserve pit will be filled in and recontoured before seeding. After installation of the pipeline the R/W ditch will be backfilled and recontoured, then seeded.

In order to decrease erosion and help seed germination, the final cut and fill slopes will not exceed a 2:1 slope ratio. To obtain this ratio, cut and fills will be back sloped into the well pad. Production Equipment will be placed on the well pad, so as not to interfere with the proper reclamation of the cut and fill slopes. If equipment interferes with this reclamation, Energen will be required to move such equipment.

RECREATION: The area of the proposed action is located in a FFO designated recreation Special Management Area (SMA). This area is managed for disbursed recreational activities such as hunting, camping, hiking, horseback riding and pinon nut gathering. The proposed action and alternatives may affect these activities for the short-term when construction starts and when the wells are being drilled and completed. After this period the well will be in the production phase and human disturbance will be reduced to a Energen employee visiting the location twice a week.

WILDLIFE: The location of the Proposed Action is located within a designated big game wintering and elk calving SMA. Typical wildlife associated with the p-j woodland / sage grassland ecosystem exist in the proposed project area. Resident populations of mule deer and elk occupy the general area throughout the year. The proposed action would remove food and cover for wildlife and displace a limited number of big game animals that use this area. An *edge effect* will be created by the proposed action and alternatives in that a change of species composition will result from the seeding and most wildlife species require several types of vegetation to meet their needs. The top of Quintana Mesa is the area that the Farmington Field Office wildlife biologist has concentrated on for most of the big game mitigation projects in the resource area. Thinning and burning of monoculture p-j has been very successful in the propagation of browse species and grasses. There are several projects still in the planning stages that will encompass approximately another 250 acres in the area of Quintana Mesa. Also, the FFO wildlife biologist feels that any human disturbance on top of Quintana Mesa would be detrimental to wintering big game herds that use this area and would compromise existing and future projects.

A wide variety of songbirds and neotropical migratory birds use this region during migration and the proposed action may affect them in some way. The location of the wells, pipelines, and roads being proposed for construction lie within a pinyon pine/juniper habitat type. The vegetation found in this plant community supports a broad array of avian species. Executive Order 13186 dated January 17, 2001 calls for increased efforts to more fully implement the Migratory Bird treaty Act of 1918. In keeping with this mandate, the Farmington BLM has consulted the Partners In Flight Bird Conservation Plan for the State of New Mexico and the U.S. Fish & Wildlife Service's list of Birds of Conservation Concern. A review of these documents, specifically, as they pertain to the Colorado Plateau physiographic area, indicates there are 7 "priority" avian species that utilize the pinyon/juniper habitat type (with a known range of distribution in the FFO area) and may be impacted by various types of perturbations.

These species and a brief assessment of the effects of the Proposed/Preferred Alternative on their habitat is as follows:

a. Gray Flycatcher – The gray flycatcher utilizes pinyon pine and juniper, and in some cases the bases of sagebrush (Ehrlich, 1988) for nesting during the period of May through July. Insects taken in flight, on the ground, or from the branches/bark of trees are the flycatcher's primary food source. Thus, the Proposed Action will result in the loss of a relatively small amount of potential nesting and foraging habitat. Conversely, the production of arthropods should be significantly increased on those portions of the project site that are revegetated (well pads and pipeline ROWs) due to the expected proliferation of herbaceous vegetation. At this point in time, given the amount of pinyon and juniper remaining elsewhere in the FFO area, it is anticipated that the Proposed Action will have no negative impacts to the gray flycatcher (Sterling, 1999).

b. Gray Vireo- The gray vireo prefers mixed pinyon/juniper and Gambel's oak for nesting and foraging. Barlow et al. (1999) found 26 of 27 gray vireo nests in the Colorado National Monument to be located in Utah juniper. The most common foraging technique of the gray vireo is gleaning insects from the inner limbs and leaves of shrubs and trees with occasional forays to the ground. The literature is unclear as to the site fidelity of this species relative to nesting and foraging. The Proposed Action may displace some vireos but given the pervasive nature of pinyon/juniper it is assumed that adequate suitable nesting/foraging habitat exists adjacent to the proposed treatment area.

c. Black-throated Gray Warbler – The black-throated warbler's habitat needs are similar to the gray vireo and gray flycatcher. It is also largely insectivorous with its feeding behavior given to hovering, gleaning and hawk-like tactics. Nest location is usually far out on a horizontal branch (Ehrlich et al., 1988). Again, the Proposed Action would eliminate some nesting habitat but may increase the available prey base.

d. Ash-throated Flycatcher- The ash-throated flycatcher is an omnivorous cavity nesting bird (Ehrlich et al., 1988). Insects, berries, and an occasional small lizard are its primary foods. The Proposed Action may eliminate some trees that currently support cavity nests or potentially could become nest sites but only if they were first excavated by a primary cavity nesting species such as a hairy or downy woodpecker. In the absence of such excavation (and abandonment) there would be no nest site available to the ash-throated flycatcher. In addition, the Proposed Action will increase herbaceous/shrubby vegetation and the production of arthropods which will provide more food for the flycatchers.

e. Cassin's Kingbird- Nests and forages in pinyon/juniper/Gambel's oak. Feeds on insects captured in flight and fruits when available. Prefers to nest on horizontal tree branch near trunk (Ehrlich et al., 1988). The Proposed Action

will eliminate some nesting habitat but should result in an increased prey base due to more insect production.

f. Pinyon Jay- The pinyon jay is a colonial nester and has a high nest site fidelity, i.e., large numbers of jays will return to the same area to nest year after year. Breeding/nesting activity begins early in winter (February). Nests are relatively large, well insulated, and usually placed on the south sides of trees, one per tree. Past field visits to the project site, while not of an intensive grid-like protocol, do not indicate any colony nests on the project site. However, point count survey data does suggest that a nesting site might be located somewhere on Pump Mesa approximately 12 miles to the west. Although the pinyon jay has a strong mutualistic relationship with pinyon nuts, it is an omnivore, feeding on a variety of insects, fruits, small reptiles and mammals. The pinyon jay spends much of its time foraging on the ground (Balda, 2002). Therefore, it is expected that the Proposed Action will not have any negative impacts to the jays.

g. Juniper Titmouse- The juniper titmouse is an omnivorous secondary cavity nesting species (Cicero, C. 2000). It is anticipated that the proposed action could increase the production of arthropods which will be beneficial to the titmouse but could potentially destroy some existing cavity nests or the potential for future nests. Given the probability that the Proposed Action will increase the food resources for the juniper titmouse, it is anticipated that the overall effects of the project, at this time, will not have a negative impact.

Summary: It is important to consider the cumulative effects of the disturbance regime that exists in the area administered by the BLM's Farmington Field Office. While no quantitative analysis of the amount of pinyon/juniper, either removed or available has been done, a general review of recent aerial photography and extensive field visits suggests that the amount of pinyon/juniper available to woodland obligate species is adequate at the present time.

VISUAL RESOURCES: The proposed project would not be visible from any highway or County road. However, BLM has developed a Visual Resource Management (VRM) classification designed to maintain and enhance visual qualities and describe the different degrees of modification to the landscape. The project area is within an area, which has a classification of IV, which provides for major modification to the landscape, and the level of change in the landscape due to management can be high.

IV. ENVIRONMENTAL IMPACTS

The disturbance required to build the proposed pads, access roads and pipelines is not considered a significant impact with mitigation. Although, not considered significant as

a whole, the primary resource affected by the proposed action is the watershed because of erosion. Bureau of Land Management (BLM) mitigation measures, conditions of approval and stipulations are pointed at reducing the impacts to the watershed. Energen and its contractors when following the BLM mitigation measures and stipulations will reduce the impacts to the watershed and effectively mitigate the erosional aspect of the proposed action and alternatives.

PROPOSED ACTION: Approximately 14.36 acres will be disturbed to construct the well pads along with 3.31 acres of disturbance to construct a 4800 foot-long, (30 foot-wide) access road. The pipeline, which will start at the Quintana Mesa # 100 will require 4.59 acres of disturbance. A maximum of 14.36 acres will be disturbed during the short-term. Upon completion of the well, it will be put into production. Reclamation activities will then be instituted for all disturbed areas not needed during the production and maintenance activities associated with the well. Production facilities and equipment located on the well pad precludes reclamation measures be instituted on approximately 6.91 acres of the well pad, pipelines and access road. Maintenance of no vegetation around production equipment is a requirement by the Department of Transportation. As a result, this area will generally remain in an ongoing disturbed state while the well is in the production phase, which is usually 20 to 30 years. This area will be reclaimed and revegetated when the well is plugged and abandoned by the company. Energen's employees for maintenance purposes will use the access road during the life of the producing well.

The pads, pipelines and access road are located in an area of highly erosive soils with sparse vegetation. Multiple factors such as soil type, degree of slope, type and amount of precipitation, duration and volume of runoff, plus operation and maintenance activities determine the extent of the increased erosion and runoff. Because of the type, number, and degree of variability of any of these factors, the amount of erosion and sedimentation that might occur as a result of this action cannot be determined. The primary long-term impact is the building of 4800 foot of access, 10,000 foot of pipeline and three 2.80-acre well pads. Runoff from the mesa across and along the road may result in reestablishment of the old drainages or more probably the development of new drainages.

These factors, plus the amount of maintenance required to keep a functional access in this area would influence the extent that the area could be rehabilitated and the establishment of vegetation once the road, pipelines and pads have been built.

RELOCATION ALTERNATIVE # 1

The environmental impacts of Relocation Alternative # 1 will be about the same as the proposed action, but the access road and pipelines will be following the same route. This route will be from the Elkhorn # 100 at the bottom of the mesa to the top and through Quintana Mesa. While the proposed action will have 4.12 acres of long-term disturbance the acres of long-term disturbance for the access this Alternative's access road alone would be 5.37 acres. With the pipeline following the access road it would require another 20 foot of disturbance to be cut from the uphill side of the access. Disturbance for the three well pads measuring 225' x 275' will be 8.39 acres Total

disturbance for this alternative is 18.35 acres with approximately 8.97 acres being long-term disturbance that will last +- 30 years.

RELOCATION ALTERNATIVE # 2

This alternative would change the locations of the three well pads and the access from the mesa top referred to in the proposed action to an area at the bottom of the mesa. If geology is important to the location of these wells then this alternative will consider different drilling locations but the same bottom hole locations. The most feasible methods to do this is to find locations for these wells (on lease) close to existing roads and well pads then use the latest technology to either directionally drill to the geological formation or drill to the depth of this formation and then horizontally drill until the bottom hole legal description is reached. This alternative could possibly be done without any new road construction, which would limit the total disturbance to three 225 foot by 275 foot drilling pads. Another inspection will be needed to find new locations for the three wells. The environmental impacts are not known at this time, however the possibility of multiple wells being drilled from the same location, existing access roads being used, as well as these well locations being "twinned" to existing locations would create less disturbance. Although this Alternative will be the least intrusive of the four (4) proposed Alternatives, Energen feels that it is the least viable in an economic standpoint. These wells are not located in the Fruitland Coal drilling fairway and the economics of drilling these wells directionally or horizontally would make the wells uneconomic to drill.

RELOCATION ALTERNATIVE # 3

The environmental impacts for Alternative # 3 will be for 6500 feet of road, 9,300 of water and gas pipelines and three 225' x 275' well pads. Approximately 3500' of the access is on previously disturbed lands. The pipelines from the Quintana Mesa # 100 will use two-track disturbance as much as possible and these pipelines will be put in the road from the top of the mesa to the tie-in point at the bottom (approximately 4500').
The pipelines will be put in a 50' right-of-way on the mesa top for 4,800' then use existing two-track for the rest of their length.
Total new disturbance for this alternative is 15.97 acres with 5.67 acres being long-term disturbance that will last for the life of the wells (+- 30 years).

IV. CUMULATIVE IMPACTS

The impacts of the Proposed Action and the Relocation Alternatives have been evaluated and are considered in the following narrative.

In summary, the Quintana Mesa area is an integral part of the most heavily used deer winter range in the Farmington Field Office. It is extremely important that this area be retained free from human intrusion so that continued habitat improvements can take place without fear of their benefits being compromised by human activity.
The construction of access roads and well pads of the Proposed Action and Relocation Alternatives will create a vast amount of loose and disturbed soil. This may allow increased erosion from all disturbed areas, but especially on the cut and fill slopes, and

access roads. Most of these accesses will be built on extreme northern exposures, which will hold moisture long after precipitation falls in this area. This may cause increased maintenance, increased disturbance, and with an increase in the fore mentioned factors, increased erosion and watershed degradation. This increase in erosion can affect the soil integrity in the watershed and possibly preclude plant establishment throughout the affected watershed. Also, the integrity of the access roads would be continuously threatened by runoff in this area. These access roads would open up previously undisturbed areas. Precluding oil field traffic, the public would have access to these new areas creating disturbance to wildlife as well as creating another probable maintenance problem on the access roads for Energen. Increased maintenance in this area will increase erosion therefore; increase detrimental effects to the watershed.

The esthetics of the area will be affected by the proposed action and alternatives and the amounts of cut needed to establish access into this area. These cut slopes will preclude the establishment of vegetation thus possibly making these cuts seem out of place and contrast sharply with the physiography of the affected area.

Wildlife use of this bench will be affected during the construction phase of this project. The long-range affects, which are inherent with production and maintenance phases, are associated with wells located in a relatively small area. This area is used by raptors for perching and hunting and is suitable for nesting of those raptor species that prefer cliff location nesting sites. The Ponderosa pine in and around the mesa top provide nesting and perching habitat for many raptor species. The roads proposed to access the all four alternatives may alter predator-prey interactions for rodents and nesting raptors as it will allow increased access to this area that was not available before access road construction. How these factors will affect the ecology of this area cannot be determined without further studies into the impacts of this type of disturbance.

PREFERRED ALTERNATIVE

The on-site inspector, representatives from Energen and the wildlife biologist from FFO, believe that Alternative # 3 is the most promising alternative. This alternative will essentially keep the disturbance off the mesa top and away from the big game habitat enhancement projects that have already been done and future projects that are in the planning stages. This alternative will also, use more existing disturbance than the proposed action and the other alternatives. Relocation Alternative # 2 can possibly be done with less disturbance, but Energen has made an emphatic statement that directional or horizontal drilling of these wells would make them uneconomic. If Alternative # 2 is picked, then the possibility of these wells being drilled is in jeopardy and federal minerals would not be developed.

V. MITIGATION

A steel pipe gate will be erected at the entrance to the reopened road on the west face of Quintana Mesa. This gate will be kept locked on a yearlong basis to reduce the potential for unauthorized activity on top of Quintana Mesa. All disturbed areas (well pads and pipelines) will be seeded with a seed mixture beneficial to big game. The seed mix will consist of the following:

Species	PLS
Antelope Bitterbrush	2.0 lbs/acre

True Mountain Mohogany	2.0 lbs/acre
Western Wheatgrass	2.0 lbs/acre
Pubescent Wheatgrass	2.0 lbs/acre
Indian Ricegrass	2.0 lbs/acre
Delar Small Burnett	3.0 lbs/acre
Wyoming Big Sage	0.2 lbs/acre

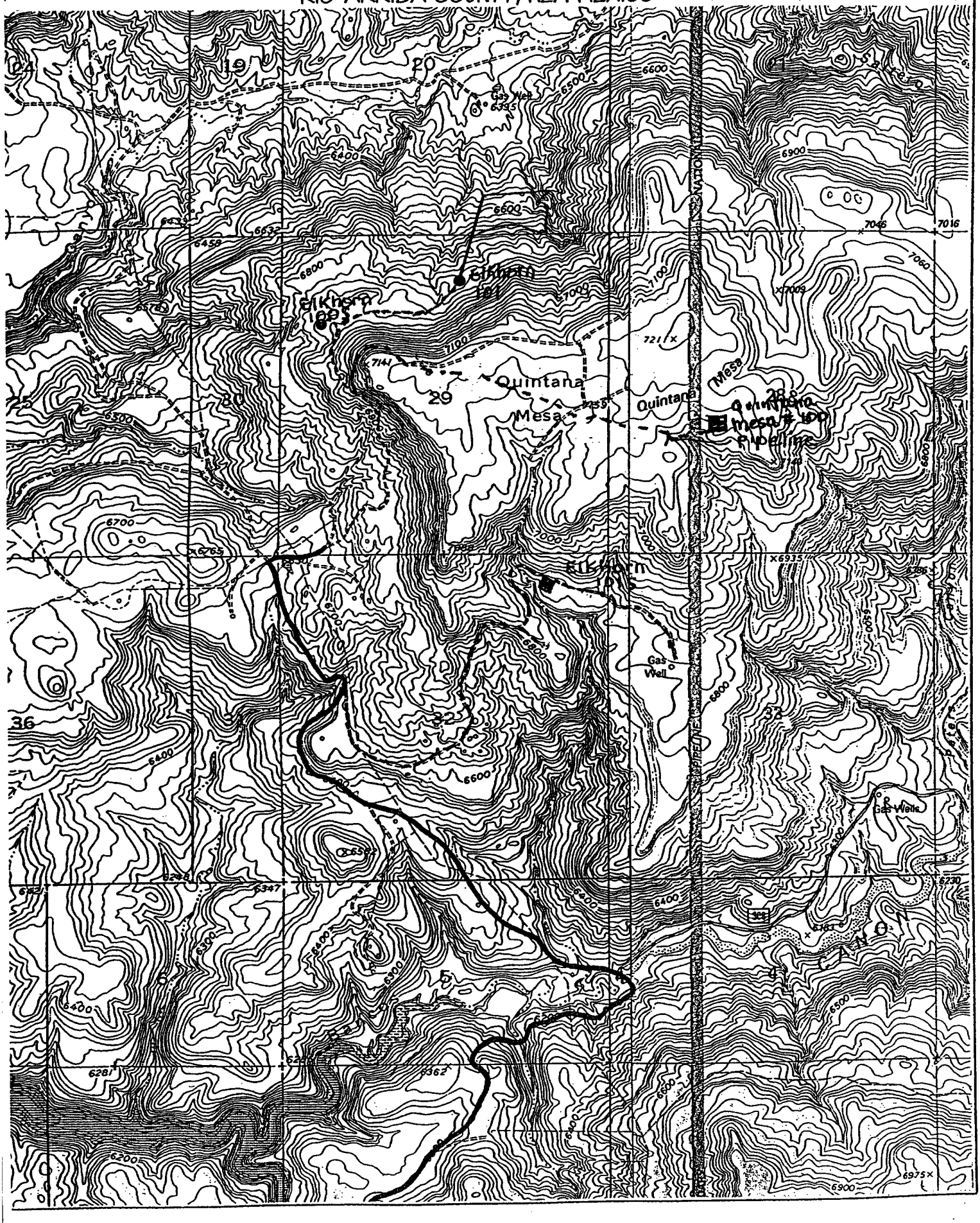
VI. CONSULTATION and COORDINATION

Energen Representatives...Doug Thomas, Rich Corcoran, Gary Brink
US Forest Service...John Reidinger, Mark Catron
NCE Surveys...Jason Edwards
Williams Field Service Representative...Louis Chavez
BLM Representatives...Bill Liess, Ray Sanchez, Jim Lovato, Dave Mankievietz, Joel Farrel, John Hanson

ENERGEN RESOURCES CORPORATION ELKHORN #101

755' FNL & 2375' FEL, SECTION 29, T32N, R5W, N.M.P.M.

RIO ARRIBA COUNTY, NEW MEXICO



FIELD INSPECTION SHEET

No.

GENERAL INFORMATION

EA #

Operator Energen
Well Name & No. Elkhorn #101
Lease No. NM 4461 Oil ☐ Gas ☑
Type: CO2 ☐ WC ☐ DEV ☑
Formation Fruitland Coal Depth
Circulation Med.: Mud ☑ Gas ☐ Air ☑

Date: 12/2/02
By: Tony
Surface Ownership Federal
County Rio Arriba State NM
Footages 755' FNL & 2375' FEL
Sec. 29 T. 32 N., R. 5 W

ROAD:

1. Utilizing existing road ON lease: Yes ☑ No ☐
2. NEW (access road) - ON lease
   b. length 6500' width 30'
3. NEW (access road) - OFF lease/unit
   a. Realty ROW: Yes ☐ No ☑
   b. length N/A width

PIPELINE:

1. Proposed P/L ON lease: Williams
   a. length 7101' width 40'
   b. line: surface ☐ or underground ☑
   c. pressure: high ☐ or low ☐
   d. tie in well name:
2. Inspected OFF Lease/Unit Pipeline:
   a. Realty ROW: Yes ☐ No ☑
   b. length N/A width

SURFACE OBSERVATION:

a. Topography p-j woodland
b. Soil type(s) rock outcrop
c. Vegetation p-j, bitterbrush, mt. mahogany, sage, gambels oak, galleta, grama

1. Slope:
   a. natural slope direction north
   b. cardinal direction faced by the slope occupied by the project north
2. Drainage:
   a. natural drainage direction west
   b. drainage ☑ below or ☐ above the cut on the south side draining west & side draining off the well pad.

NAMES of Individuals on Joint Inspection:

WELL SITE:

Location moved: Yes ☐ No ☐
From: To:
Pad Size 250'x275'
Laydown N82°E Pit location NW
Cut (ft.) 17' Direction SE
Fill (ft.) 11' Direction NW
Paint green Seed mix special

ADDITIONAL INFORMATION:

1. land use grazing, minerals, big game
2. water source unknown
3. dwelling (¼ mi.) none
4. utility ROW none (Williams)
5. well (nearest to location) none

CONFLICT/VULNERABLE MAP CHECK:

RMP SMA
T & E PALEO
ARCH WILDLIFE
VULNERABLE AREA: Yes ☐ No ☑

SPECIAL STIPULATIONS:

#2 big game
#4 6"... rehab
#6 line reserve pit
#8 SE-NW... excess disturbance
#10 south... below... west terrace thru the middle of cut
#11 18"... where diversion puts water onto access @ the pa and N all low spots...
#14 2:1 ↑
#15 green... special
#23 trees

step down pits 50% into cut
a steel pipe gate will be put at the beginning of access