

**U.S. Department of the Interior  
Bureau of Land Management  
Little Snake Field Office  
455 Emerson Street  
Craig, CO 81625-1129**

## **ENVIRONMENTAL ASSESSMENT**

**EA-NUMBER:** CO-100-2008-057 EA

**CASEFILE/PROJECT NUMBER/LEASE NUMBER:** COC72946

**PROJECT NAME:** Durham Ranch 3D Seismic Survey

**LEGAL DESCRIPTION:** T4N R89W, Secs. 7 & 18; T4N R90W, Secs 7-18, 20-24, 26-27; T4N R91W, Sec. 12; T5N R89W, Sec. 31; T5N R90W, Secs. 19-23, 25-36; T5N R91W, Secs. 24-26, 35-36; 6<sup>th</sup> PM, Moffat and Routt Counties, Colorado

**APPLICANT:** East Resources, Inc.

**PLAN CONFORMANCE REVIEW:** The proposed action is subject to the following plan:

Name of Plan: Little Snake Resource Management Plan and Record of Decision (ROD) approved on April 26, 1989; and the Colorado Oil and Gas Leasing & Development EIS and the ROD signed on November 5, 1991.

Remarks: The proposed Durham Ranch 3D seismic survey is located primarily within MU 1 of the BLM-designated Resource Management Units (MUs) described on the Little Snake Resource Management Plan and Record of Decision, 1989. Resource Management Unit 1 (MU-1) is the "Eastern Yampa River" unit. MU 1 management objectives are to realize the potential for development of coal, oil, and gas resources.

The proposed action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The proposed action is in conformance with the objectives for this management unit.

**NEED FOR PROPOSED ACTION:** The BLM's need for the project is to respond to the proponent's application. The BLM is considering approval of the proposed Durham Ranch 3D seismic project because the activity is an integral part of BLM's oil and gas program under authority of the Mineral Leasing Act of 1920, as amended; the Federal Land Policy and Management Act of 1976, as amended; and the Federal Onshore Oil and Gas Leasing Reform Act of 1987, as amended. Additionally, 3D seismic activity is recognized as an appropriate use of BLM-administered public lands in the Little Snake Resource Management Plan (1989).

The proponent's need is to further locate and identify oil and natural gas reservoirs that may be present in geologic formations beneath the surface of the project area. A 3D seismic survey provides information about underground geology by utilizing a 3D seismograph data collection system to analyze and three-dimensionally image subsurface geologic structures and stratigraphy. The prospect overlies an area of high oil and gas potential, as identified by the Little Snake Draft RMP.

**PUBLIC SCOPING PROCESS:** The Notice of Intent is posted in the Little Snake Field Office for a 30-day public review period and may be viewed during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays. The project is posted on the 2008 NEPA log on the Little Snake Field Office web site.

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:**

**PROPOSED ACTION:**

East Resources Inc. is proposing to conduct an exploratory, three-dimensional (3D), geophysical seismic survey for the Durham Ranch 3D project in Moffat and Routt Counties, Colorado (Attachment 1). The final project outline would encompass 31 square miles of receiver positions and 21 square miles of source locations. The survey is located between Townships 4 – 5N and Ranges 89 – 91W. The surface ownership is composed of 27 square miles of private surface ownership, 3 square miles of BLM administered surface and 1 square mile of Colorado State administered surface. The proposed project area includes approximately 329 linear miles of receiver line and 226 linear miles of proposed source lines. Actual surface use by the proposed project would be restricted to 100-foot corridors along the seismic lines and staging and survey base station areas. The proponent would utilize the FireFly technology, which features a database system containing all routes, source points and avoidance areas. Additionally, the receiver devices used are self-contained units, requiring no connection cables.

The exploratory seismic survey would involve four phases:

Phase 1: Planning Surveys and Pre-Approval Actions. The area would be surveyed and source and receiver lines would be laid.

Phase 2: Source generation. Vibroseis techniques would be used to create seismic (sound) waves that would be reflected from various sub-surface features back to the surface.

Phase 3: Data acquisition. These reflected seismic (sound) waves and patterns arising from the different underground geologic strata would be recorded for subsequent processing and evaluation.

Phase 4: Demobilization. Subsequent project clean up and reclamation activities would be performed.

Phase 1: Planning Surveys and Pre-Approval Actions: Planning surveys for the proposed seismic

exploration project have commenced and are expected to be completed by October, 2008. To accurately define the extent and location of project activities, a survey crew would locate and place temporary markers (including lathes, pin flags, flagging and/or spray paint as appropriate) at receiver and source points using a high-accuracy global positioning system (GPS). The survey crew would establish and flag the receiver and source point locations and travel routes between them. This work would be completed both on foot, in trucks, and/or using ATVs from existing roads and trails including off-road travel as necessary or required. Vehicles bringing surveyors to and from the project area would remain on existing roads and trails. The survey crew would be responsible for positioning source point stations such that they avoid all known and apparent cultural, natural, and existing land use features of importance.

All hazards and access information would be loaded into a database (FireFly CONNEX Planner), which would be utilized in a parallel process to determine the best positioning of all source and receivers. Source and receiver points would be positioned to maximize the best imaging of the subsurface while avoiding all known cultural, natural and existing land use features. Additionally, travel routes would be developed for the vibroseis buggies, and programmed into their navigation systems based on avoidance of identified features.

Phase 2: Source generation: Vibroseis buggies would be used as the primary method of source generation and would be utilized to the greatest extent possible in all accessible areas. Source lines would be oriented Northwest-Southeast on 495-foot line spacing. There are 7,271 source points in the project area with a 165-foot source interval. Receiver lines are oriented in a Northeast-Southwest direction, spaced 495 feet apart. There are approximately 10,597 receiver points within the project area at a 165-foot interval. Locations have been positioned to avoid rough terrain, existing facilities, or other areas of concern such as drainages, wetland areas, archaeological and paleontological sites, or biological sites. The GPS travel routes would be loaded into a navigation system (FireFly CONNEX Vibroseis NavTool) that is installed within each vibroseis unit and carried by individuals on foot. The navigation system directs the operators of the vibroseis buggies where to travel and notifies them when a source point is reached. The FireFly system will not allow vibration waves to be generated in a location that is not a source point. All the routes that the vibroseis buggies have traveled would be recorded in the system to show the production of the vibroseis buggies. Up to 10 vibrator buggies may be working independent of each other in predetermined designated areas.

To generate ground vibration waves, a buggy vibrator would lower an approximately rectangular 26.9 square feet (2.5 m<sup>2</sup>) metal pad onto the ground surface at a pressure of up to 64,000 pounds of peak force. The buggy vibrator would then cause the pad to generate a pulse which inputs a series of ground vibrations. Modern vibrator electronics provide force control on the metal pad resulting in consistent ground contact and minimizing surface disturbance and compaction. Duration and frequency of buggy vibrator shaking would be a single sweep of a duration totaling 24 seconds long, at 6 to 120 hz start/end frequency pulse. By varying the frequency of vibration, optimal transmittance can be obtained. Additional data regarding the character of the imaged rocks can be obtained using vibroseis.

The vibroseis buggies are would likely be AHV IV buggies or similar in design and would weigh approximately 64,000 pounds and would be equipped with standard flotation tires approximately 43 inches in width. Surface contact pressures on the ground surface would be approximately 12 psi for each tire. No additional clearing or grading of the existing roads and trails would be required. Buggy vibrators would only be refueled at the designated staging areas and on existing roads/trails or source line/road intersections during seismic survey operations.

In the case where the vibroseis method cannot be utilized, such as areas with steep slopes or rough terrain, source location would be designated as dynamite shot hole. The primary method to prepare a dynamite shot hole is to utilize a single buggy drill rig. This buggy drill rig is similar to a buggy vibroseis with the exception of the weight of the vehicle, ranging between 10,000 to 25,000 pounds. At each location one hole would be drilled at a depth of 40 feet and loaded with a 5.5lb charge of pentolite. In cases where terrain, accessibility and other factors would preclude use of the buggy, other drilling methods might be utilized including hand-portable drills and heli-portable drills. All shot holes are drilled, loaded and plugged according to the procedures set by the State of Colorado Oil and Gas Conservation Commission. The drill contractor will utilize staging areas to locate the mag (dynamite charge) storage site and follows federal (ATF) guidelines for storage, transport and handling.

Phase 3: Data acquisition: Ground crew members would walk on their receiver line and using a portable GPS and navigation device (FireFly CONNEX NavTool), would navigate from receiver location to receiver location to determine the proper positioning of the FireFly equipment on the receiver location. After determining the location, a small hole is drilled into the surface and the Vectorseis phone (the receiver device) is placed into the hole by one of the crew members by hand. Each FireFly receiver unit is self-contained; the Vectorseis phones are not connected by cables. All the routes that the receiver equipment crews have traveled as well as the positions of all equipment placed in the field would be logged in the system. All Vectorseis phones would be laid out in this manner at each station across the project area.

Once an area has been shot, ground crew members would walk on their receiver line using the portable navigation device loaded with the positions of the receiver devices. Crew members would navigate to each receiver location to pick up all FireFly equipment.

Phase 4: Demobilization: The demobilization task would proceed concurrently with data acquisition. All pin flags, flagging, lathe and other “trash” would be gathered daily as the field groups and crew members complete data-acquisition portions of the project. ATVs would be utilized to clean up flagging on/along the source lines and all “trash” would be collected at points on roads or trails and transported by vehicle to staging areas where personnel would organize materials, handle equipment, and dispose of used/unusable materials. A follow up or “trash” crew would make a complete sweep of the project area to ensure that no trash or equipment has been left behind upon completion of data acquisition and prior to a filing of a completion report. This task is usually planned to be completed within a week subsequent to the conclusion of data acquisition.

**NO ACTION ALTERNATIVE:** Under the No Action Alternative East Resources Inc's application would be denied. Implementation of the No Action Alternative would likely result in the continuation of current land uses and the maintenance of resource development trends on BLM-administered lands in the project area. The BLM has leased a majority of the Federal minerals, including oil and gas, within the boundaries of the project area. These Federal leases grant to the lessee the right to explore, drill, and remove the leased resource in the leasehold. Although selection of this alternative would preclude implementation of the proposed geophysical seismic exploration project, this alternative would not preclude other oil and gas exploration or development on BLM-administered lands based on future analyses and approval of specific proposals. In addition, oil and gas exploration activities could still occur on state and private lands in the project area.

## **AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION MEASURES**

### **SURFACE DISTURBANCE ESTIMATES**

#### *Proposed Action:*

Surface disturbance as a direct result of the seismic survey operations including buggy passage to source locations would total approximately 164 total acres (less than one percent) of the estimated 19,840 acre total project area.

Surface disturbance from each vibroseis buggy would typically consist of two, 3-foot wide tracks (total disturbance of six feet per vibroseis buggy) from the floatation tire-equipped, 11.5-foot wide vibroseis buggies. Total surface disturbance from a single vibroseis buggy was multiplied by a factor of two to account for tortuosity of travel corridors, double passes, and travel between lines. On upland areas, four vibroseis buggies would travel abreast in a box formation and the single vibroseis buggy disturbance is multiplied by an additional factor of two.

Actual surface disturbance resulting from buggy vibrator travel would typically consist of two, 36 inch wide tracks (total disturbance of approximately six feet per buggy) from the buggies. The use of floatation tires on the buggies with surface contact pressures ranging between 9 and 15 psi would minimize the direct and/or indirect impacts to biological and physical resources encountered on/along the route with these impacts primarily limited to:

- Crushing of grass/shrub stems encountered on cross-country routes;
- Some visible soil disturbance from vehicle passage due primarily to the lugs (cleats) on the floatation tires - particularly in areas devoid of or with sparse vegetative cover; and
- Minor rutting may occur in loose soils devoid of vegetative cover or in those cases where sudden precipitation events overtake source generation activities and equipment must be moved back to existing roads/staging areas until soil conditions are more favorable.

The crushing of grass/shrub stems and “visible” tracks are expected in conjunction with routine seismic survey activities. These impacts are expected to be apparent immediately following seismic survey activities, but would diminish through time (TRC 2007). Minor rutting as defined above is possible, particularly in areas devoid of vegetation or where loose soils are encountered, but would not be expected to be commonplace or widespread in nature. Major rutting (ruts in excess of two inches) would be avoided to the greatest extent possible, but is possible under certain meteorological conditions as outlined above. East Resources would take every precaution to ensure that surface disturbances resulting from off-road activities are limited to the crushing of vegetation and minor soil disturbances related to tire configurations. In cases where soil conditions (wet and/or saturated soils) are such that rutting may occur, operations would be suspended and the equipment would be moved back to existing roads or staging areas until such time as cross-country operations could proceed with a minimal amount of surface disturbance.

Any surface disturbance resulting from project-related activities including, but not necessarily limited to, repeated vehicle use of staging areas, inadvertent rutting along source lines, etc. would be repaired and re-seeded with a seed mixture appropriate for the area as recommended by the AO. Repair of existing disturbances would involve leveling of ruts and limited leveling of other irregularities where necessary (including access routes, staging areas and shot points) as approved by the AO. Repairs would be conducted using hand tools or small, motorized pieces of equipment (such as a bobcat or skid steer) with AO approval.

*No Action Alternative:*

Under the No Action Alternative, the Durham Ranch 3D Project would not be conducted and therefore there would be no surface disturbance associated with the project.

## **CRITICAL RESOURCES**

### **AIR QUALITY**

**Affected Environment:** There are no special designation air sheds or non-attainment areas nearby that would be affected by the proposed action.

**Environmental Consequences, Proposed Action:** Short term, local impacts to air quality resulting from combustible engine exhaust and dust from surface operations would result during operations. The emissions from these activities consist of both gaseous and particulate fractions. Gaseous constituents from diesel engine exhaust include carbon dioxide, carbon monoxide, nitric oxide, nitric dioxide, oxides of sulfur and hydrocarbons.

Fine particulates of soot from diesel exhaust and fugitive dust from soils would be localized to the project area. The health effects of these emissions are largely from long-term and occupational exposure. The proposed action would not adversely affect the regional air quality. Vehicle traffic could loosen the soil surface in the short term, but this would only be a problem in areas having exposed soil surfaces; localized dust could be generated by traffic or wind erosion in the short term. Once the soil surface receives

some amount of moisture, physical or biological crusts would likely ameliorate this impact. Most of the affected area on BLM lands that would have vehicle travel would be existing roads or on soils well covered by vegetation and litter.

Environmental Consequences, No Action: Under the No Action Alternative, the Durham Ranch 3D Project would not be conducted and therefore air quality would not be affected.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen, 7/11/08

#### **AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

Affected Environment: Not Present.

Environmental Consequences, both alternatives: Not Applicable.

Mitigative Measures: Not Applicable.

Name of specialist and date: Rob Schmitzer, 6/2/08

#### **CULTURAL RESOURCES**

Affected Environment: Cultural resources, in this region of Colorado, range from late Paleo-Indian to Historic. For a general understanding of the cultural resources in this area of Colorado, see *An Overview of Prehistoric Cultural Resources, Little Snake Resource Area, Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, *An Isolated Empire, A History of Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resource Series, Number 2 and *Colorado Prehistory: A Context for the Northern Colorado River Basin*, Colorado Council of Professional Archaeologists.

Environmental Consequences, Proposed Action: The proposed project(s), Durham Ranch Seismic, has undergone a Class III cultural resource survey:

Witt, Thomas A.  
2008 Class III Cultural Resource Investigation of the Durham Ranch 3-D Geophysical Exploration Project, Moffat County, Colorado. (BLM#127.2.08)

The survey identified no eligible to the National Register of Historic Places cultural resources. The proposed project may proceed as described in this EA with the following mitigative measures in place.

Mitigative Measures: The following standard stipulations apply for this project:

1. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:
  - Whether the materials appear eligible for the National Register of Historic Places;
  - The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and
  - Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.
2. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

Name of specialist and date: Robyn Watkins Morris, 08/01/08

## **ENVIRONMENTAL JUSTICE**

Affected Environment: The proposed action is located in an area of isolated dwellings. Ranching, farming and oil/gas development are the primary economic activities.

Environmental Consequences, all alternatives: The project area is relatively isolated from population centers, so no populations would be affected by physical or socioeconomic impacts of the proposed or alternative actions. Neither alternative would directly affect the social, cultural or economic well-being and health of Native American, minority or low-income populations.

Mitigative Measures: None.

Name of specialist and date: Mike Andrews, 5/9/08



## **FLOOD PLAINS**

Affected Environment: No large floodplain areas are present on BLM lands in the affected areas. Several small floodplains are present within the gulches along the northern edge of the project area where geophones and cables or other receiver devices will be used. Activities along source lines where vibroseis buggies may cross drainages or drilled shot holes are established are primarily headwater stream segments draining ridges and hill slopes. Gradients on these systems are generally too high for continuous active floodplains to develop.

Environmental Consequences, both alternatives: None.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen, 7/11/08

## **INVASIVE, NONNATIVE SPECIES**

Affected Environment: Invasive and noxious weeds are present in the affected area. Invasive annuals such as downy brome (cheatgrass), tarweed, blue mustard and yellow alyssum commonly occur in the affected area and become established on disturbed areas. Invasive annual weeds are typically established in disturbed and high traffic areas, whereas, biennial and perennial noxious weeds are less common in occurrence. Downy brome is on the Colorado List C of noxious weeds, as are common mullein and poison hemlock, which could also be found in the project area. Colorado List B noxious weeds that are present in the project area include Russian knapweed, diffuse knapweed, spotted knapweed, leafy spurge, dalmation toadflax, yellow toadflax, oxeye daisy, black henbane, houndstongue, hoary cress (whitetop), Canada thistle, musk thistle, bull thistle and other biennial thistles. The BLM is in cooperation with the Moffat County Cooperative Weed Management program to employ the principals of Integrated Pest Management to control noxious weeds on public lands.

Environmental Consequences, Proposed Action: Existing roads and rangeland would be traversed by vehicles that may have noxious weed seeds caught on the vehicles or in dried mud adhered to vehicles. Vehicles moving through brush can easily dislodge any seed that may be carried into the project area. Any establishment of biennial and/or perennial weeds that may result from these operations would likely not be identified for a few years following operations.

Environmental Consequences, No Action: Operations would not be conducted and no invasive or noxious weeds would be introduced.

Mitigative Measures: Prior to commencing operations on BLM lands, all surface vehicles

used to perform the proposed activity must be washed, especially the under-carriage, to remove mud and weed seed. The operator will be responsible for treating any noxious or poisonous weeds introduced as a result of the geophysical project. The BLM will monitor the area for 3 years after project completion and will notify the operator if noxious weeds develop. If noxious weed infestations develop during the monitoring period, the operator will be required to obtain a pesticide use permit and have a licensed applicator treat the affected areas.

Name of specialist and date: Ole Olsen, 7/11/08

## **MIGRATORY BIRDS**

**Affected Environment:** Historical records show that golden eagles are known to use the project area. A raptor survey was conducted during June of 2008. Results of this survey found two inactive golden eagle nest sites and one active prairie falcon nest site. Both golden eagles and prairie falcons are on the USFWS 2002 Birds of Conservation Concern List.

**Environmental Consequences, Proposed Action:** The proposed seismic project is not likely to impact nesting golden eagles because no active nests were located. There is potential to disturb nesting prairie falcons if survey activities are conducted within ¼ mile of the active nest site during the nesting season (February 1 – August 15). No surface disturbing activities should be allowed within 1/8 of a mile of any of these nests sites in order to ensure the integrity of the nest site is maintained. If conducted outside of this time period, there is little chance that prairie falcons would be disturbed. As mitigated, chance of take is very low.

**Environmental Consequences, No Action Alternative:** There would be no impacts to any migratory birds as a result of the No Action Alternative.

**Mitigative Measures: CO-18:** No surface disturbing activities between February 1 and August 15<sup>th</sup> within ¼ mile of active raptor nests.

**CO- 03:** No surface Occupancy within 1/8 mile of a raptor nest site. This stipulation is intended to protect the integrity of the nest site.

Name of specialist and date: Timothy Novotny, 7/11/08

## **NATIVE AMERICAN RELIGIOUS CONCERNS**

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Ute Tribal Council on May 5, 2008. The letter listed the FY08 and FY09 projects that the BLM would notify them on and projects that would not require notification. A followup phone call was performed on June 16, 2008. No comments

were received (Letter on file at the Little Snake Field Office). This project requires no additional notification.

Name of specialist and date: Robyn Watkins Morris, 08/01/08

### **PRIME & UNIQUE FARMLANDS**

Affected Environment: There are no Prime and Unique Farmlands on BLM lands in the project area.

Environmental Consequences, both alternatives: None.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen, 7/11/08

### **THREATENED AND ENDANGERED ANIMAL SPECIES**

Affected Environment: There are no threatened or endangered or special status species or habitat for such species present within the proposed project boundary.

Environmental Consequences, both alternatives: None.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny, 7/11/08

### **T&E AND SENSITIVE PLANTS**

Affected Environment: There are no federally listed threatened or endangered or BLM sensitive plant species within the proposed project area.

Environmental Consequences, both alternatives: None.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim, 5/29/08

### **WASTES, HAZARDOUS OR SOLID**

Affected Environment: If a release does occur then the environment affected would be dependent on the nature and volume of material released. If there are no releases then there would be no affect on the environment

with all vehicle use and terminate operations under adverse conditions. These mitigative measures would be considered Best Management Practices that would reduce surface disturbance to an acceptable level.

Environmental Consequences, No Action: Project-related impacts to surface water quality would not occur under the No Action Alternative.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen, 7/11/08

## **WETLANDS/RIPARIAN ZONES**

Affected Environment: Riparian systems are present on BLM lands in Deal Gulch, Jeffway Gulch, Spring Gulch and possibly in an unnamed draw that is east of and tributary to Waddle Creek. A small experimental enclosure is present in an unnamed ephemeral draw that is west of Harper Hill.

Environmental Consequences, Proposed Action: The riparian systems associated with Deal Gulch, Jeffway Gulch and Spring Gulch should not be impacted because only receiver lines will be established in this portion of the project. The proposed action indicates that activities along these lines and the establishment of receiver points would be accomplished by walking and hand carrying equipment. Receiver lines would cross these riparian areas in several locations, but foot traffic would not harm the riparian vegetation or soils.

Additional riparian systems could be present within drainages or could be associated with upland springs and seeps where source lines would be driven with buggies or where shot holes are established. One possible drainage which has not been evaluated for having riparian resources occurs in T5N R90W, sec. 33 SWNE. Crossing wet or moist soils in riparian areas with the vibroseis buggies would cause rutting and or compaction that could lead to damaged vegetation, reduced vegetative growth, and/or accelerated erosion.

Environmental Consequences, No Action: Project-related impacts to riparian resources would not occur under the No Action Alternative.

Mitigative Measures: Vibroseis buggies, ATVs and all other vehicle use will avoid crossing all riparian areas on BLM lands; any crossing that occurs by vehicles will be at established road or two-track trail crossings. All riparian areas that are associated with springs and seeps will be completely avoided. Surveying equipment, cables, geophones, other receiver devices and other materials used along the receiver lines will be hand carried across any riparian/wetland system that is present. All riparian and wetland sites will be avoided in this manner.

Name of specialist and date: Ole Olsen, 7/11/08

## **WILD & SCENIC RIVERS**

Affected Environment: Not Present.

Environmental Consequences, both alternatives: Not Applicable.

Mitigative Measures: Not Applicable.

Name of specialist and date: Rob Schmitzer, 6/2/08

## **WILDERNESS, WSAs**

Affected Environment: Not Present.

Environmental Consequences, both alternatives: Not Applicable.

Mitigative Measures: Not applicable.

Name of specialist and date: Rob Schmitzer, 6/2/08

## **NON-CRITICAL ELEMENTS**

### **RANGE MANAGEMENT**

Affected Environment: The project would occur in portions of nine grazing allotments that are grazed by eight different livestock operators. The allotments include: Badger Creek (#0413; 1,962 BLM acres, 210 AUMs cattle use), Upper Horse Gulch (#04133; 1,593 BLM acres, 134 AUMs cattle use), Deal Gulch (#04134; 1,290 BLM acres, 215 AUMs sheep and cattle use), West Well Sweep (#04137; 714 BLM acres, 59 AUMs sheep, cattle and horse use), East Well Sweep (#04645; 648 BLM acres, 55 AUMs cattle use), Lower Waddle Creek (#04130; 369 BLM acres, 123 AUMs cattle use), Spring Gulch (#04135; 257 BLM acres, 33 AUMs cattle use), Peck Gulch (#04145; BLM 200 acres, 34 AUMs sheep use) and Oklahoma Flat (#04143; 222 BLM acres, 36 AUMs cattle use).

These allotments are designated as Section 15 lease properties, meaning that they are not part of a grazing district and that their use is governed by section 15 of the Taylor Grazing Act. Part of the rules governing the grazing leases on Section 15 lands is that the private lands of the person holding the grazing lease must be contiguous to the BLM lands. Typically, Section 15 leases are for small BLM acreage which is usually surrounded by private land, making public access extremely difficult. This is why priority preference for the grazing lease is given to the contiguous land owner.

All of the lands within the project area are managed for livestock grazing by cattle, sheep and horses. Livestock may be present on any of the allotments until mid-November, but trailing use (especially by sheep) may occur during any time that the proposed survey is to occur. Numerous fences and developed water sources are located throughout the proposed project area. Fence crossings have been identified by the proponent.

Environmental Consequences, Proposed Action: Proposed seismic survey operations may adversely impact cattle, sheep or horses utilizing these allotments during the period of survey activities. Vibroseis buggy, helicopter, and ATV activity may frighten the animals causing them to scatter, to potentially move out of individual allotments, and to trespass on adjacent allotments. Although seismic survey activity in these allotments could impact livestock and their management, the impacts would be short-term and minimal. The proponent has committed to working with the affected livestock operators and is committed to maintaining and to restoring range improvements that may be affected by seismic activities as described in the Proposed Action.

Environmental Consequences, No Action: No impacts to livestock operations would occur.

Mitigative Measures: None.

Name of specialist and date: Kathy McKinstry, 5/28/08

## **REALTY AUTHORIZATIONS**

Affected Environment: The proposed project area contains seven existing realty authorizations: COC36303, YVEA electric distribution line, COC30980, TBI Field Services buried natural gas pipeline, COC49132, buried water pipeline held by Gilbert Meyers, COC49098, Qwest buried telephone cable, COC70698, Moffat County communications site and COC023716 & COC017337, highway rights-of-way held by the State of Colorado.

Environmental Consequences, both alternatives: Existing buried pipelines and cables or other facilities could be accidentally damaged during project activities, unless avoided. Impacts would be temporary until any damage is repaired.

Mitigative Measures: Potential damage to existing rights-of-way would be minimized by:

- Avoid existing rights-of-way during the project.
- Utilize the "One Call" system to locate and stake the centerline and limits of all underground facilities in the area prior to project initiation.

- Provide 48-hour notice to the owner/operator of all facilities prior to performing any work near existing rights-of-way.

Name of specialist and date: Mike Andrews, 05/09/08

## SOILS

Affected Environment: Most of the BLM lands within the Durham Ranch 3D project area are comprised of steep slopes, rock outcrops and fragile soils that are vulnerable to accelerated erosion when disturbed. The primary soil mapping units along the northern edge of the project area include Torriorthents-Rock outcrop, Sandstone complex, 25 to 75 percent slopes; Ustorhents, Frigid-Borolls complex, 25 to 75 percent slopes; Rock outcrop-Torriorthents complex, 50 to 75 percent slopes; and the Rentsac-Moyerson complex, 25 to 65 percent slopes. The soil mapping units found in the central portion of the project area include those above as well as the Cochetopa loam, 12 to 25 percent slopes; Cochetopa loam, 25 to 65 percent slopes; Cochetopa loam, Warm, 3 to 12 percent slopes; Foidel loam, Cool, 3 to 25 percent slopes; Foidel loam, 25 to 65 percent slopes; Lamphier-Jerry complex, 25 to 65 percent slopes; Morapos loam, 12 to 25 percent slopes; Pagoda clay loam, 1 to 12 percent slopes; Skyway fine sandy loam, Dry, 15 to 75 percent slopes; and the Winevada-Splitro complex, 3 to 25 percent slopes. All of the soils that have slopes in excess of 35 percent are considered to be fragile soils and are rated as having an erosion hazard of severe if moderate to heavy soil disturbance is introduced. All of the soils in the project area that occur on moderate and slight slopes have a severe rating for the soil rutting hazard.

Environmental Consequences, Proposed Action: The proposed activities along the source line where the vibrosis buggies or shot hole locations are proposed have avoided the fragile soil areas and steep slopes. The fragile soil areas would be used to obtain data with geophones and cables or other receiver devices. Unnecessary disturbance could be caused on fragile soils if ATV's or other vehicles are used to establish the receiver points or pull cable along the receiver lines. The proposed action indicates that activities along these lines and the establishment of receiver points would be accomplished by walking and hand carrying equipment.

Ruts can form in saturated soils because of low strength behavior of the soil. Ruts can form at moderate moisture levels, but would be attributed more to compaction. Ruts can intercept surface overland flow and concentrate runoff water causing accelerated erosion which increases with slope. Mitigating actions to eliminate ruts caused by off road travel may cause additional surface disturbance, subject to erosion or weed infestations. Minor surface ruts on level to slight slopes which have some vegetation can disappear with time as natural processes begin to heal the surface, but excessive rutting on steeper slopes could lead to long term erosion and gully formation. Soils covered with an abundant vegetative cover are less susceptible to rutting and soil compaction.

Environmental Consequences, No Action: Project-related impacts to the soil resource would not occur under the No Action Alternative.

Mitigative Measures: All activities that will be performed on slopes of 35 percent or greater will be accomplished by walking and hand carrying equipment. No shot holes will be established on slopes of 35 percent or greater.

Operations will be suspended on upland sites if continuous ruts by truck or buggy tires are developing in excess of 2 inches on 85% of a source line on any upland soil. Operations will be suspended on upland sites if intermittent rutting on 15% of any line exceeds 4 inches on slopes less than 20 percent and in excess of 2 inches on slopes greater than 20 percent.

Name of specialist and date: Ole Olsen, 7/11/08

## **VEGETATION**

Affected Environment: The soils on the BLM lands within the project area are mainly rocky outcrops which do not support a particular range site. The dominant vegetation is composed of bluebunch wheatgrass, Indian ricegrass, western wheatgrass, needleandthread grass, antelope bitterbrush, Wyoming sagebrush, and true mountain mahogany.

Environmental Consequences, Proposed Action: The 162 acres of disturbance would consist mainly of crushing the vegetation. No vegetation would be bladed or otherwise removed intentionally. The Proposed Action would disturb approximately 164 acres of vegetation throughout the project area. Operation of vibroseis buggies would result in temporary (less than one year) to short-term effects (one to three years) on vegetation. Since this project would occur during the fall, all herbaceous dicots would be dormant and impacts to those species would be negligible. The cool season grasses that are present would be in the process of initiating fall lead tillers, but, again, impacts would occur to comparatively few individual plants throughout the project area and would be negligible. Although no vegetation would be removed, compression of plants and breakage of limbs of woody shrubs would occur on a total of 162 acres of vegetation in the project area. This disturbance would amount to approximately 1.0 percent of the 19,840-acre project area. Although compression and possible breakage of woody parts of some plant species would occur, BLM monitoring of post-survey conditions for several previous seismic survey projects has determined that off-road buggy travel over vegetation causes only minimal impacts and vegetation usually recovers within days or weeks. As such, impacts to vegetation due to seismic exploration activities are expected to be temporary and minimally invasive.

Environmental Consequences, No Action: No impacts to vegetation would occur at this



time as no seismic survey would be conducted within the proposed project area.

Mitigative Measures: None.

Name of specialist and date: Kathy McKinstry, 05/28/08

## **WILDLIFE, AQUATIC**

Affected Environment: There is no aquatic wildlife habitat on BLM managed lands within the proposed project area.

Environmental Consequences, both alternatives: None.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny, 7/11/08

## **WILDLIFE, TERRESTRIAL**

Affected Environment: The proposed project area provides productive year round habitat for mule deer, pronghorn antelope and elk including severe winter range for mule deer and elk. A variety of small mammals reptiles and songbirds may be found on public lands within the project area as well.

Environmental Consequences, Proposed Action: The proposed seismic project is not likely to result in long term losses of habitat for any wildlife species. Temporary avoidance of disturbed areas is likely to occur. The proposed action could have a negative impact on mule deer and elk if conducted during winter months by displacing individual animals off of severe winter habitat into less suitable habitat. Results from the seismic survey would be reduce the need for unnecessary drilling in order to locate fluid mineral resources on public lands. This could result in a long term benefit to many wildlife species by reducing some disturbances resulting from fluid mineral exploration. Some small mammals, reptiles and songbirds may be disturbed by equipment this would be a short term negative impact that would not affect any species populations.

Environmental Consequences, No Action Alternative: The No Action Alternative is not likely to have any direct impacts to wildlife or their habitats.

Mitigative Measures: CO-09: No surface disturbing activities between December 1 and April 30 in order to protect wintering big game animals.

Name of specialist and date: Timothy Novotny, 7/11/08

**OTHER NON-CRITICAL ELEMENTS:** For the following elements, those brought forward for analysis will be formatted as shown above.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Fluid Minerals		MDW 04/04/08	
Forest Management		JC 6/2/08	
Hydrology/Ground		MDW 07/18/08	
Hydrology/Surface			
Paleontology		MDW 04/04/08	
Range Management			KLM 05/28/08
Realty Authorizations			
Recreation/Travel Mgmt		RS 6/2/08	
Socio-Economics		MAA 05/09/08	
Solid Minerals		JAM 7/11/08	
Visual Resources		RS 6/2/08	
Wild Horse & Burro Mgmt	KLM 05/28/08		

**CUMULATIVE IMPACTS SUMMARY:**

The following sections assess the cumulative impacts of the alternatives in combination with past, present/current, and reasonably foreseeable future actions. Pursuant to NEPA, the BLM must consider the cumulative effects of the proposed action in conjunction with other activities. Cumulative impact is the impact on the environment which results from the incremental impact of the proposed action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

The following reasonably foreseeable development analysis identifies other actions that have, are, or would cumulatively affect the resources of concern that are addressed in this EA.

The direct and indirect effects from oil and gas development projects are dramatically different from effects of seismic exploration, primarily in that oil and gas development results in long-term disturbance from placement of well pads, pipelines, and access roads, whereas seismic exploration is mostly temporary to short-term in nature and does not involve any permanent structures or activities. Therefore, cumulative impacts from implementation of a seismic survey project such as the proposed Durham Ranch 3D Seismic Survey Project last only for the duration of the seismic survey or until the next growing season for most resources.

The BLM projects that somewhere between five to ten additional geophysical surveys will be proposed on public lands within the Little Snake Field Office Planning Area within the next five

years. Should East Resources' proposed project or any other reasonably foreseeable seismic project identify areas with a high probability of oil and gas reserves, it is likely that proposals would be made to recover those resources. Any future geophysical activities or oil and gas development on public or State lands would be subject to site-specific analysis (e.g., NEPA analysis) by the responsible Surface Managing Agency.

Any land disturbing activity that impacts native vegetation affects soil functions and subsequently leads to some level of erosion, and potentially, sediment yield to stream systems. Based on reasonably foreseeable actions, vegetation disturbance, and subsequent erosion and sediment yield to drainages within the Little Snake FO Planning Area is likely to continue to increase due to surface disturbance associated with oil and gas activities, seismic exploration, livestock grazing/management, and recreational activities reasonably certain to occur. As discussed in the previous sections, erosion and sediment yield impacts from the Proposed Action is not expected to have long-term adverse effects on project area floodplains and riparian corridors. Thus, the Proposed Action would cause only negligible cumulative impacts on wetlands, floodplains and riparian corridors.

Based on reasonably foreseeable actions, vegetation disturbance within the Little Snake FO Planning Area is likely to continue to increase due to surface disturbance associated with oil and gas activities, seismic exploration, livestock grazing/management, and recreational activities reasonably certain to occur. As discussed in the previous sections, the Proposed Action is not expected to have long-term adverse effects on project area vegetation. Thus, the Proposed Action would cause only negligible cumulative impacts on these resources.

The Proposed Action could cumulatively add to short-term, small-scale losses of hunting/foraging habitats, breeding/nesting areas, and/or hiding/thermal cover; temporary displacement from habitats; and direct mortality occurring from past, present and future projects in the Little Snake FO Planning Area. Realistically, East Resources' compliance with protective Federal stipulations regarding timing of project operations, implementation of Applicant-committed Environmental Protection Measures, and the short-term nature of their project would result in the Proposed Action only causing minimal cumulative impacts throughout the Little Snake FO Planning Area.

Although all impacts (i.e., loss of AUMs, displacement, etc.) to livestock grazing associated with the Proposed Action would be short-term, these activities would cumulatively add to those occurring from past, present and future projects in the Little Snake FO Planning Area. Realistically, East Resources' compliance with protective Federal stipulations regarding timing of project operations, implementation of Applicant-committed Environmental Protection Measures, and the short-term nature of the project would result in the Proposed Action only causing minimal cumulative impacts throughout the Little Snake FO Planning Area and having negligible impacts on special status wildlife species.

References:

TRC Environmental Corporation (TRC). 2007. *Sellers Draw 3-D Seismic Project Impact*

*Evaluation, Park, Hot Springs and Washakie Counties, Wyoming.* Unpublished report. Laramie, Wyoming. 29 pp.

U.S. Geological Survey (USGS). 2006. *Ouray National Wildlife Refuge Vegetation Mapping Project*. Black Greasewood (*Sarcobatus vermiculatus*)/Saltgrass Shrubland (*Distichlis spicata* Shrubland). pp.130-132. Website Available: <http://biology.usgs.gov/npsveg/oura/descript/bs.pdf>. Accessed Online: October 2, 2006.

## **STANDARDS**

### **PLANT AND ANIMAL COMMUNITY (animal) STANDARD:**

The proposed seismic project is within productive wildlife habitat. This area is currently capable of supporting healthy, productive and diverse wildlife populations. The seismic project would result in some short term displacement of big game animals, small mammals, song birds and reptiles. Most displaced individuals would be able to return to the project area once the project is completed. There should be no long term loss or conversion of wildlife habitats resulting from this project. This standard is currently being met and would continue to be met in the future.

Name of specialist and date: Timothy Novotny 7/11/08

### **SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD:**

There are no threatened, endangered or special status wildlife species or habitats for such species within the proposed project area. This standard does not apply.

Name of specialist and date: Timothy Novotny 7/11/08

### **PLANT AND ANIMAL COMMUNITY (plant) STANDARD:**

No vegetation would be removed as a result of the Proposed Action, and noxious and invasive weeds would be monitored and treated as appropriate. The Proposed Action would meet this standard.

The No Action Alternative would meet this standard as no disturbances to the plant community would occur.

Name of specialist and date: Kathy McKinstry, 05/28/08

**SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant) STANDARD:** There are no federally listed threatened or endangered or BLM sensitive plant species within the proposed project area. This standard does not apply.

Name of specialist and date: Hunter Seim 5/29/08

**RIPARIAN SYSTEMS STANDARD:** The proposed geophysical operations would meet the riparian standard for healthy rangelands provided that all riparian systems are avoided by vehicle traffic. The known riparian systems that are present in the northern portion of the project area are in areas where only receiver lines and points would be established by foot travel.

Name of specialist and date: Ole Olsen 7/11/08

**WATER QUALITY STANDARD:** The water quality standard for healthy rangelands is currently met and the proposed geophysical operations would not affect water quality. Mitigation incorporated into the proposed action or developed in this Environmental Assessment, as well as the Standard Terms and Conditions of a geophysical permit contain several Best Management Practices that will maintain the water quality of the affected stream segments.

Name of specialist and date: Ole Olsen 7/11/08

**UPLAND SOILS STANDARD:** The proposed action with mitigation provided in this Environmental Assessment would meet the upland soils standard for healthy rangelands. Potential impacts to upland soils have been reduced with rutting depth standards and restricting vehicle use and the establishment of shot holes in fragile soil areas. Moderate slopes will have restrictions to avoid excessive rutting and disturbance. Decreased soil cover resulting from disturbances to vegetation is expected to be short term.

Name of specialist and date: Ole Olsen 7/11/08

**PERSONS/AGENCIES CONSULTED:** Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office.



## FONSI

The environmental assessment, analyzing the environmental effects of the proposed action, has been reviewed. With the implementation of the attached mitigation measures there is a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.
2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.
3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas or designated Areas of Critical Environmental Concern.
4. There are no highly controversial effects on the environment.
5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.
6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State or local natural resource related plans, policies or programs.
7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.
8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.
9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.
10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

## **DECISION AND RATIONALE:**

I have determined that conducting this 3D seismic geophysical exploration project is in conformance with the approved land use plan. It is my decision to implement the project with the mitigation measures provided below. The project will be monitored as stated in the Compliance Plan outlined below.

To comply with established geophysical project oversight procedures (COGLD FEIS, p. D-1) and facilitate monitoring, the following mitigation measures and stipulations will be applied:

## **MITIGATION MEASURES:**

1. Prior to commencing operations on BLM lands, all surface vehicles used to perform the proposed activity must be washed, especially the under-carriage, to remove mud and weed seed. The operator will be responsible for treating any noxious or poisonous weeds introduced as a result of the geophysical project. The BLM will monitor the area for 3 years after project completion and will notify the operator if noxious weeds develop. If noxious weed infestations develop during the monitoring period, the operator will be required to obtain a pesticide use permit and have a licensed applicator treat the affected areas.
2. CO-18: No surface disturbing activities between February 1 and August 15<sup>th</sup> within ¼ mile of active raptor nests.
3. CO-03: No surface Occupancy within 1/8 mile of a raptor nest site. This stipulation is intended to protect the integrity of the nest site.
4. Vibroseis buggies, ATVs and all other vehicle use will avoid crossing all riparian areas on BLM lands; any crossing that occurs by vehicles will be at established road or two-track trail crossings. All riparian areas that are associated with springs and seeps will be completely avoided. Surveying equipment, cables, geophones, other receiver devices and other materials used along the receiver lines will be hand carried across any riparian/wetland system that is present. All riparian and wetland sites will be avoided in this manner.
5. Potential damage to existing rights-of-way would be minimized by:
  - Avoid existing rights-of-way during the project.
  - Utilize the "One Call" system to locate and stake the centerline and limits of all underground facilities in the area prior to project initiation.
  - Provide 48-hour notice to the owner/operator of all facilities prior to performing any work near existing rights-of-way.



6. All activities that will be performed on slopes of 35 percent or greater will be accomplished by walking and hand carrying equipment. No shot holes will be established on slopes of 35 percent or greater.
7. Operations will be suspended on upland sites if continuous ruts by truck or buggy tires are developing in excess of 2 inches on 85% of a source line on any upland soil. Operations will be suspended on upland sites if intermittent rutting on 15% of any line exceeds 4 inches on slopes less than 20 percent and in excess of 2 inches on slopes greater than 20 percent.
8. CO-09: No surface disturbing activities between December 1 and April 30 in order to protect wintering big game animals.

**STANDARD STIPULATIONS:**

1. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and
- Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

2. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

**COMPLIANCE PLAN(S):**

**Compliance Schedule**

Compliance will be conducted during the operations phase to insure that all terms and conditions specified in the authorization letter including the mitigation measures are followed. Periodic inspections as identified through will be conducted. Final inspections will include a site inspection to determine if all requirements have been met.

**Monitoring Plan**

None

**Assignment of Responsibility**

Responsibility for implementation of the compliance schedule and monitoring plan will be assigned to the Fluid Minerals staff in the Little Snake Field Office. Primary inspectors will be the Petroleum Engineering Technician, but the Petroleum Engineer, Environmental Scientist, Realty Specialist, and Legal Instruments Examiner will also be involved.

**SIGNATURE OF PREPARER:** *DM St*  
**DATE SIGNED:** 8/1/08 For Marilyn Wegweiser

**SIGNATURE OF ENVIRONMENTAL REVIEWER:** *[Signature]*  
**DATE SIGNED:** 8/1/08

**SIGNATURE OF AUTHORIZED OFFICIAL:** *DM St*  
**DATE SIGNED:** 8-1-08