

**Bureau of Land Management – Moab Field Office**  
**Green River Energy Resources**  
**D J Environmental Services Third Party QA/QC Contractor**

**Quality Assurance/Quality Control (QA/QC) Program**  
**La Sal 3D Geophysical Project**

A. Project Overview

1. The QA/QC Officer will oversee the environmental compliance of the entire Green River Energy Resources (GRER) La Sal 3D Seismic Project as approved by the Bureau of Land Management Moab Field Office.
2. The QA/QC Officer will have the same level of authority as the BLM Project Manager to require environmental compliance with the appropriate environmental requirements.
3. The QA/QC Officer will be the monitoring team leader and coordinate with GRER and BLM as required and necessary.

B. Assignment and Responsibilities:

1. The QA/QC Officer will act on behalf of the Bureau of Land Management (BLM) to assure compliance with the attached Conditions of Approval and Best Management Practices are followed at all times. The primary role of the QA/QC is to ensure environmental compliance and coordinate with other representatives on the day to day activities.
2. The QA/QC Officer will be responsible for enforcing all requirements in the Terms and Conditions, Stipulations, Conditions of Approval and other contract terms related to this project.
3. The QA/QC Officer will report to the BLM Authorized Officer as necessary to resolve any unusual situations.

C. Process and Duties

1. The QA/QC Officer will have oversight of the project and all related facets in its entirety. Compliance with terms and conditions and Best Management Practices will be required and maintained throughout the project.
2. BLM will provide the QA/QC Officer a copy of the Green River Energy Resources, La Sal 3D Geophysical Survey, Environmental Assessment, Terms and Conditions, Conditions of Approval and project maps as required.
3. GRER will provide the QA/QC Officer with a complete listing of all pertinent company operating procedures and policies and safety plan for the project.
4. The QA/QC Officer will submit a weekly report to the BLM as directed (i.e. every Wednesday

morning). Weekly updates will be discussed. A final report, at project completion, will be prepared by the QA/QC Officer and submitted to GRER and BLM.

5. Joint site visits will be conducted by the BLM and the QA/QC Officer on an intermittent basis.
6. The QA/QC Officer will be authorized to enforce all environmental compliance on the project.
7. The QA/QC Officer will patrol and keep vehicles (trucks, employee vehicles etc.) on the project's roads, and staging areas.

#### D. Non-Compliance

1. QA/QC Officer will determine any non-compliance on the project and report it to GRER and the BLM.
2. In the event of non-compliance with any of the county, state or federal environmental regulations or requirements, the cause will be determined and corrective action(s) will be taken immediately. If the non-compliance cannot be corrected or results in significant environmental impacts, work will not resume in that area of the project until BLM authorizes work to resume. The QA/QC Officer will keep GRER and BLM apprised of the situation as information becomes available.
3. All instances of non-compliance will be documented on BLM's Compliance Inspection for Oil and Gas Geophysical Exploration Operations form and forwarded to the BLM and a copy to GRER. The BLM Project Manager or QA/QC Officer will issue written order(s) for non-compliance as necessary. Under specific conditions, special resource monitors (i.e., archaeologist) will have authority to stop work at a site-specific location.
4. In the event of non-compliance actions, GRER reserves the right to remove the responsible individual(s) from the project. If there is continued non-compliance or lack of response by the Contractor, GRER will shut down some or all construction activity, at the Contractor's expense, until the issue is resolved.

#### E. BLM Actions

1. BLM will cause GRER to remove the QA/QC Officer and/or environmental inspectors from this project if spot inspections by BLM personnel (occurring on a random, unannounced schedule) reveal unreported non-compliance in the QA/QC Officer's area of responsibility.
2. If GRER and/or contractors and subcontractors do not take action to remove an employee (including supervisors) that are causing/ordering the non-compliance, a written order to temporarily suspend activities may be issued pursuant to 43 CFR 3150.1 by BLM.
3. BLM will cause GRER to remove individual truck drivers or equipment operators that are involved directly in more than three (3) cases of non-compliance. The supervisor that may be causing/ordering the non-compliance may also be removed from the project.

4. Excessive and/or continuous non-compliance that demonstrates that this compliance plan is not ensuring compliance with the mitigation included in the Environmental Assessment will result in suspension, revocation or cancellation of activities pursuant to 43 CFR 3150.1. This will affect all areas of seismic activity on this project that BLM does not have sufficient personnel to monitor.
5. Excessive and/or continuous non-compliance that would demonstrate a disregard for stipulations or the resources that the stipulations are written to protect will result in suspension, revocation or cancellation of the BLM Notice of Intent (NOI) pursuant to 43 CFR 3150.1. This will include the opportunity for an appeal to the Interior Board of Land Appeals pursuant to 43 CFR 3150.2.
6. The QA/QC Officer will conduct periodic on-site inspections, review records and keep track of the project's overall efficiency and compliance with BLM and GRER's project standards.
7. BLM will inspect the project with and without the QA/QC Officer on a random schedule.

#### F. Archaeological Discovery Program

1. Archaeological monitoring will be performed as needed based on the project stipulations. Discoveries will be handled in the following manner. Upon discovery of an unanticipated archaeological site during seismic activity, GRER will immediately suspend activities in the vicinity of the site and report the discovery to QA/QC Compliance Officer. If GRER or its Contractor(s) discover human remains "in connection with an activity...the person shall cease the activity in the area of discovery, make a reasonable effort to protect the items discovered ...and provide notice ..." (25 USC 3002 Sec. 3, part d. 1). The QA/QC Compliance Officer will notify the BLM Moab Field Authorized Officer's Designated Representative and the BLM Moab Field Archaeologist of the discovery. Construction will remain suspended in the area of the discovery until authorization to proceed is issued by the BLM Authorized Officer's Designated Representative in consultation with the BLM Moab Field Archaeologist.
2. All questions concerning proper archaeological procedures will be directed to the BLM Moab Field Archaeologist as appropriate to the lands jurisdiction of the discovery.

#### G. Project Summary

1. At the end of the project, a summary compliance report will be completed by GRER in conjunction with the QA/QC Officer regarding the environmental compliance program and the overall compliance effort.

#### H. Communication Chart

##### Telephone Numbers of Key Personnel:

A. Lynn Jackson            Associate Field Manager            435-259-2150 W

435-259-0458 H

Tom Hare                      President, DJ Environmental                      540-903-5909 C

Dave Filler                      Project Manager, GRER                      406-250-0008 C

**I. Signatures**

The following agree to abide by terms and conditions of this QA/QC program.

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A. Lynn Jackson, Bureau of Land Management                      Date

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Tom Hare, DJ Environmental                      Date

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Dave Filler, Green River Energy Resources                      Date

**Attachment**  
**Notice of Intent Conditions of Approval and Applicant Committed Mitigation**  
**Green River Energy Resources La Sal 3-D Geophysical Survey**  
**San Juan County, Utah**

**Special Conditions to the NOI**

**Monitoring:**

- GRER will provide an independent, third-party quality control monitor to conduct compliance to the NOI, Special Conditions and the Quality Control/Quality Assurance program. The third party monitor will report directly to the Authorized Officer in the Moab Field Office.
- The third party monitor will be responsible for assuring the COA's and QA/QC program is followed. They will have the authority to act on behalf of BLM.
- The third party monitor will prepare weekly written reports of activities on site, and keep BLM apprised verbally of operations on a weekly basis.
- The third party monitor will establish 40 to 50 long-term photo monitoring sites within the project area. The monitor will provide these photos, along with GPS coordinates of the photo points, to BLM at the end of operations. The photo monitoring will be across the project area, representative of the various slopes and soils present. The photos will focus on the two staging areas; the vibroseis track lines, and the drilling points.

**Conditions of Approval:**

### ***General***

- GRER will be subject to a quality control/quality assurance plan that will be written by the Moab FO and incorporated within the Decision Record. The plan will be signed by the applicant, the independent on-site monitor, and the BLM AO.

### ***Recreation***

- If a vehicle leaves an existing road or route, its point of exit from the road or route will not be a perpendicular departure so that the off-road access is not immediately visible to the public.

### ***Soil Resource Protection***

- GRER will rake vegetation where cross-country travel routes leave public roads to discourage the creation of new cross-country OHV routes.
- If ruts are apparent from paved roads, GRER will post signs stating “Restoration area” until such time as the ruts are not visible from the road or after one year.
- No vehicles will be operated during periods of saturated soil conditions when surface ruts greater than 4-5 inches would occur along straight travel routes longer than 100 feet.
- Vehicles will be instructed to travel at slow speeds to limit disturbance to soils and vegetation.
- The spinning of vehicle tires will be avoided to minimize the potential for soil displacement and impacts to biological soil crusts.
- If a detonated shot will blow the plug and drill cuttings out of the hole (a blowout), the crew will rake the blowout cuttings into the hole. Any remaining cuttings will be raked to blend with the surrounding soils.

### ***Vegetation Resource Protection***

- Larger shrubs, trees, and other obstacles will be avoided where possible.
- Project employees and contractors will not be allowed to drive off-road or to collect plants.

### ***Wildlife Resource Protection***

- Raptor surveys will be conducted prior to drilling operations if drilling is expected to commence during the nesting season for raptors and other migratory birds.
- GRER will follow timing and avoidance buffers as directed by the AO.
- Project personnel would be subject to the following requirements: no harassing or shooting of wildlife; no dogs on the project area; no firearms on the project area; and no littering.
- If project activities are to occur during raptor mating/nesting season (March 1-August 31), surveys will be conducted during nesting season by qualified biologists to locate nesting raptors. The information will be provided to BLM biologist and the UDWR for their review to determine the appropriate avoidance or mitigation measures and spatial and temporal buffers.
- If project activities are to occur during migratory birds typical nesting season (typically April 1st -July 31st), surveys will be conducted during nesting season by qualified biologists to locate nesting birds. The information would be provided to BLM biologist and the UDWR for their review to determine the appropriate avoidance or mitigation measures and spatial and temporal buffers.

### ***Range***

- GRER will avoid vehicle travel on range transect areas where they are identified by cages and staking. Where unavoidable, GRER will limit passage to one vehicle pass and will maintain at least 5 acres of complete avoidance.
- All gates within the project area will be left as they are found (i.e., open gates will be left open, closed gates will be closed).
- Damage to and/or the need for removal of existing fences and other range improvements as a result of the seismic survey will be immediately repaired.

- Removal or alteration of existing range improvements will be prohibited unless prior approval is obtained from BLM.
- GRER personnel and contractors will be instructed to minimize contact with, and avoid harassment of livestock.

### *Air Quality*

- Dust control measures, as approved by the BLM, will be applied as appropriate. Water will be used to control dust, if necessary, as determined by the third party monitor.

## **Applicant Committed Mitigation:**

### *General*

- All geophysical operations will be executed in accordance with applicable federal, state, and local regulations. Measures will be taken to ensure that flagging associated with other projects will not be removed.
- All geophysical operations will be conducted in accordance with BLM Handbook H-3150-1 and Manual.
- All geophysical operations will be conducted in accordance with COAs developed from the RMP for the BLM's Moab FO.
- GRER will inform the BLM Authorized Officer (AO) approximately one week prior to commencement of actual surveying. Prior to commencement GRER will communicate directly with the Moab FO Natural Resource Specialist (NRS) to incorporate all existing global information system (GIS) information identifying areas of special resource concern, cultural resource sites, T&E species locations, or other resource concerns so that these may be flagged for avoidance prior to actual cultural, biological or other field surveys.
- GRER will employ, at its expense, a professional geophysical monitor for the duration of the survey to ensure that survey operations result in no undue impacts to surface resources.

### *Cultural Resources*

- Impacts to cultural resources will be mitigated by following the procedures specified in 36 CFR 800 on BLM and State lands. A file search and a Class III archaeological inventory will be conducted for source lines and alternate routes to the source lines, if applicable.
- GRER will flag a cleared route around all cultural sites accessible by vehicle. Each buggy drill will carry a GPS unit that will identify appropriate routes such that all sites will be avoided. Exceptions may occur if the site is crossed by an existing road or two-track, according to BLM and/or state guidance.
- GRER will employ an on-site monitor throughout drilling and recording operations to ensure that cultural resource sites will be avoided.
- If other cultural resources are discovered during operations, the findings will be immediately reported to the BLM and/or state. Work that would affect the immediate site location will be halted until an evaluation of significance is made by the BLM and the State Historic Preservation Office.
- Operations personnel will be informed as to the restriction on collecting or harming artifacts during startup meetings and ongoing safety meetings.

### *Invasive, Noxious, and Non-native Species*

- GRER will clean all off-road equipment to remove seed and soil that may contain seeds prior to commencing operations within the project area.

### *Soils and Vegetation*

- Drilling will be conducted no closer than 100 feet from edges of cliffs or upland escarpments.

- Drilling and data acquisition operations will use existing roads and trails where possible.
- To minimize surface disturbance, source generation vehicles will, if possible, proceed from one source location to another with one pass per source line. The number of times that vehicles pass over their designated routes will be minimized.
- Drill holes will be stacked to avoid riparian areas, wetlands, sensitive plants, steep slopes, or other areas of concern.
- Residual cuttings from the drill hole will be spread so that they are approximately two inches or less in thickness.
- To minimize soil erosion, heliportable drills will be used on slopes greater than 40 percent. Drilling will not be conducted in areas in excess of 60 degrees of slope.
- Cross-country vehicular travel will be avoided.
- Vehicular travel will not be conducted when soils are saturated. Operations will temporarily cease if surface ruts are created deeper than 5 inches, for a length of 100 feet.
- Disturbed areas, where a site will not naturally revegetate in a reasonable time or areas where soil stability is threatened by operations will be reseeded using a seed mix specified by the AO at a time when seed germination is facilitated by natural conditions. Specific measures and locations for use will be determined by personnel from GRER and the BLM.
- GRER will minimize the potential for soil compaction by having all source generation vehicles on a source line or access route slightly offset their tracks to the extent possible, or would utilize procedures specified by the AO.
- GRER will educate field crews in the identification of biological soil crusts prior to project initiation to minimize unnecessary impacts on areas with substantial biological soil crusts.
- A person qualified to identify well-developed soil crusts will be available to monitor activities in areas of such crusts. Wherever possible, minor access alignment revisions will be made to avoid such crusts.

#### ***Protection of Existing Facilities and Rights-of-Way***

- Source point placement will comply with BLM Handbook H-3150-1, Illustrations 10 and 16 (Appendix E) and applicable state regulations. Safe operating distances to pipelines, telephone lines, railroad tracks or highways, electric power lines, water and oil and gas wells will be determined by the size of the charge according to the regulation.

#### ***Surface Water***

- Vehicular traffic across dry drainage channels will be limited to sloping side backs or to vertical banks less than two feet high. Crossing routes will be aligned to be perpendicular to a stream channel, to the extent practicable.
- Minimum distances from source point placement will conform to BLM Handbook H-3150-1, Illustrations 10 and 16 (Appendix E) and applicable state regulations.
- Drill holes will offset springs by offsets approved by the applicable regulatory authorities.

#### ***Wildlife and Special Status Species***

- Impacts to wildlife, raptors, and special status species will be mitigated by biological surveys prior to the initiation of drilling operations, where/when needed. Occurrences of the species will be identified and individuals will be avoided or protective measures will be taken at the direction of the AO.
- Habitat and/or sites requiring protection by the U.S. Fish and Wildlife Service (FWS) will be managed according to applicable regulations and COAs specific to the identified species. These restrictions may take the form of timing limitations or distance offsets.
- If drilling were to occur during nesting season (typically March through August), GRER will conduct a migratory bird/raptor survey under the direction of the AO to determine the presence of active nests. If an active nest were to be found, GRER will conduct its operations in areas offset from the active nest according to instruction by the AO.

#### ***Range***

- If a fence must be crossed by vehicular traffic, the contractor will provide advance notice to the appropriate AO.
- Gates will be used for crossing fences wherever practical. If a fence must be crossed by a vehicle at a location other than an existing gate, contact with the appropriate AO will be made before any activity is started at any fence crossing location and specified procedures will be followed.
- Project operations will avoid stakes and cages that define a range monitoring site and will not drill holes in potential transect areas.

#### ***Waste***

- All pin flags, flagging, and other debris will be gathered daily and disposed of at an approved site or landfill.
- All oil, diesel, or hydraulic fluid spills will be cleaned up immediately and removed, including any contaminated soils. All spill-related materials will be hauled to an approved disposal site. Safety advisors will be on the scene and supervise the operation. An approved disposal site will be located before operations begin.

#### ***Safety***

- GRER's standard safety procedures and applicable federal, state, and local regulations will be followed during shot detonation. A pre-operations meeting will be held to review all safety procedures for shot detonation.
- Each shot will be cleared and secured by the trained shooting personnel prior to its detonation. GRER operates under Bureau of ATF License 9-MT-029-33-8D-00367 and in accordance with Title 27, Code of Federal Regulations Part 55 – Commerce in Explosives. All employee possessors are personally authorized through the Bureau of ATF to handle and transport explosives, and ultimate responsibility for explosives handling rests with the principals of GRER. Explosives storage will be conducted in compliance with Bureau of ATF requirements. The magazine will be located on private or state land and will meet all applicable requirements.
- Shot holes will be distanced from wells and high-pressure pipelines by a distance of at least 202 feet if using a 15-pound charge (BLM Handbook H-3150-1, Illustration 10). All involved utility and production companies will also be contacted for compliance. The International Association of Geophysical Contractor recommendations will also be reviewed.

#### ***Air Quality/Noise***

- All vehicles and construction equipment will be properly maintained to minimize exhaust emissions and will be properly muffled to minimize noise. GRER will have a mechanic on site to ensure proper exhaust systems.

#### ***Fire Protection***

- All ATVs will be equipped with spark arrestors and all four-wheel drive buggies will be diesel powered. All vehicles will be equipped with fire extinguishers and shovels. Any helicopter on location will be equipped with a water bucket. GRER will coordinate project activities with fire personnel in the Moab FO.