

**DECISION RECORD
PATUA GEOTHERMAL PROJECT PHASE II
LYON AND CHURCHILL COUNTY, NEVADA**

**Final Environmental Assessment
DOI-BLM-NV-C010-2011-0501-EA
Gradient Resources, Inc. Patua Geothermal Project Phase II
Geothermal Unit N-85168X**

BACKGROUND

Gradient Resources Inc. (GRI) is proposing to construct and operate a geothermal power plant, geothermal well pads and wells, geothermal fluid pipelines, and associated access roads on lands that are managed by the Bureau of Land Management (BLM), the US Bureau of Reclamation (Reclamation) and private land owners.

The Gradient Resources, Inc. Patua Geothermal Project Phase II DOI-BLM-NV-C010-2011-0501-EA final environmental assessment (EA) evaluated the impacts on the natural and human environment that could result from implementation of this geothermal development project on Federal land. The impact analysis in the EA characterizes the potential for impacts, from the Proposed Action, for each resource in the project area. The determination of environmental risk is resource-specific and is based on a number of factors, including the presence and extent of resources within the Federal geothermal leases associated with the Proposed Action, the extent of resources in the surrounding area, and the quality of existing data. Based on the EA it was determined that the Proposed Action will not have a significant effect on the human environment and an environmental impact statement (EIS) will not be prepared.

Details of the Proposed Action within the project area are specified in the final Geothermal Utilization and Operations Plans submitted to the Bureau of Land Management Stillwater Field Office (BLM) and the Lahontan Basin Area Office (LBAO) of Reclamation in January 2011 and finalized in March 2011.

Several Rights-of-Ways (ROW) occur within the project area. GRI will coordinate and must obtain approval or permits from the relevant agencies (12 State, 4 Federal and 3 local governments) or land owner prior to implementation of the project proposed actions.

Construction of the project would require the use of fill material for well pads, the power plant foundation pad, access roads, and laydown areas, among other uses. Native soil and rock material were found to be suitable as fill for previous well pad construction; therefore, the need for fill material from other sources would be unlikely, but would be determined on a case-by-case basis. Alternatively, fill material will be obtained from a permitted gravel operation (assigned serial number N-86320), located east of Black Butte, in Section 24, T20N, R26E, MDBM, or an off-site commercial source. The open gravel pits in Section 30 are on Reclamation property.

The Proposed Action is located on Reclamation and BLM public lands and geothermal permit processing is managed by the BLM. The BLM oversees management of the geothermal Utilization and Operating Plans in consultation with Reclamation. Each agency determines the terms and conditions under which it authorizes the geothermal facilities based on the EA analysis. Elements of the project on private lands were included in the EA analysis as they are considered connected actions under Council of Environmental Quality Regulations (CEQ). The purpose of the Proposed Action is to develop the geothermal resource within the GRI, Inc. Patua Geothermal Project Phase II Geothermal Unit N-85168X with the exception of certain geothermal exploration and production proposed outside the Unit on

geothermal leases NVN 076139 and NVN 077739 in response to Executive Order (EO) 13212, which directs the BLM in a timely manner to support efforts to increase energy production from federal minerals, while preserving the health of public lands.

DECISION

Based on the analysis in the Gradient Resources, Inc. Patua Geothermal Project Phase II Geothermal Unit N-85168X DOI-BLM-NV-C010-2011-0501-EA, it is my decision to implement the Proposed Action. This decision is contingent on meeting all stipulations and conditions of the geothermal leases/drilling permits. The Conditions of Approval (COAs) are attached to this Decision Record.

AUTHORITY

The Proposed Action and COA meet the criteria described in the Federal Land Policy and Management Act of 1976 to prevent undue and unnecessary degradation of public land and with the 43 CFR 3200, 3250 and 3260 regulations. The proposed project pursuant to the National Reclamation/BLM Interagency Agreement, December 1982 and the analysis is jointly prepared between BLM and Reclamation pursuant to the National Environmental Policy Act (NEPA). The Proposed Action is in conformance with the Carson City Field Office Consolidated Resource Management Plan (2001) which states that the BLM desired outcome is to encourage development of energy and mineral resources in a timely manner to meet national, regional and local needs consistent with the objectives for other public land uses. The proposed action is consistent with the City of Fernley, Lyon and Churchill County ordinances, policies and plans. The action must comply with the conditions of permit, regulations and approval for BLM, Reclamation, Reclamation, Federal Energy Regulatory Commission, US Fish and Wildlife Service (USFWS), Nevada Department of Wildlife (NDOW), Nevada Division of Water Resources (NDWR), Nevada Department of Transportation (NDOT), Nevada Department of Environmental Protection (NDEP), Nevada Division of Minerals (NDOM), Nevada Division of Industrial Relations; Occupational Health and Safety, Bureau of Health and Protective Services, Health Division, Nevada State Historic Preservation Office (NSHPO), Public Utilities commission of Nevada, State Fire Marshall, City of Fernley, and Churchill County.

PUBLIC INVOLVEMENT

The EA was made available for a 30-day public review and comment period on February 27, 2012 until March 28, 2012. The EA was made available by hard copy at the Carson City District Office and the website at:

http://www.blm.gov/nv/st/en/fo/carson_city_field/blm_information/nepa.html.

All comments received were reviewed, considered and responded to by the BLM Stillwater Field Office Carson City District. Additional minor environmental clarification and environmental management practices have been included in the Final EA, Finding of No Significant Impact (FONSI) and Exhibit B Conditions of Approval in response to public review and comments received.


RATIONALE

Upon analyzing the impacts of the Proposed Action and following issuance of the EA for public review, I have determined that implementing the Proposed Action will not have a significant impact to the human environment and that an environmental impact statement is not required. Refer to the attached Finding of No Significant Impact (FONSI).

APPROVAL

The Gradient Resources, Inc. Patua II Geothermal Project Phase II Geothermal Unit N-85168X DOI-BLM-NV-C010-2011-0501-EA geothermal leases NVN-76139, NVN-77739, NVN-75005, and NVN-

85705 are approved for implementation. This Decision is effective upon issuance in accordance with the 43 CFR 3200, 3250, and 3260.


Teresa J. Knutson, Manager
Stillwater Field Office
Carson City District Office


Date

Attachment: Exhibit B Conditions of Approval

APPEAL PROCEDURES

If you wish to appeal this decision, it may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with 43 CFR Part 4. If you appeal, your appeal must also be filed with the Bureau of Land Management at the following address:

Teresa J. Knutson, Stillwater Field Manager
BLM, Carson City District Office
5665 Morgan Mill Road
Carson City, NV 89701

Your appeal must be filed within thirty (30) days from receipt or issuance of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition pursuant to regulation 43 CFR 4.21 (58 FR 4942, January 19, 1993) for a stay (suspension) of the decision during the time that your appeal is being reviewed by the Board, the petition for stay must accompany your notice of appeal.

Copies of the notice of appeal and petition for a stay must also be submitted to:

Interior Board of Land Appeals
Dockets Attorney
801 N. Quincy Street, Suite 300
Arlington, VA 22203

A copy must also be sent to the appropriate office of the Solicitor at the same time the original documents are filed with the above office.

U.S. Department of the Interior
Office of the Regional Solicitor
Pacific Southwest Region
2800 Cottage Way, Room E-1712
Sacramento, CA 95825

If you request a stay, you have the burden of proof to demonstrate that a stay should be granted. A petition for a stay is required to show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of the appellants' success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted.
4. Whether the public interest favors granting the stay.

The Office of Hearings and Appeals regulations do not provide for electronic filing of appeals, therefore they will not be accepted.

EXHIBIT B

May 2012
Gradient Patua II Geothermal Exploration and Utilization Plan

CONDITIONS OF APPROVAL (COAs)

Term: The term is for two (2) years from the date of approval, but may be extended by BLM. The term is intended to be commensurate with the Nevada NRS 534A.070

Please Note:

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR parts 3200, 3260 and 3280), lease/agreement terms, Geothermal Resource Orders, Notice to Lessees (NTLs), the Approved Plan of Operation and this permit.

A complete copy of the approved application and these conditions shall be maintained on location during all construction and drilling operations. Deviation from the approved plan without prior approval is not allowed.

The operator is fully responsible for the actions of his subcontractors. Operators have the responsibility to assure that activities authorized by this permit are conducted in a manner that complies with other applicable Federal, State, and local laws and regulations.

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Failure to comply with the provisions of this permit, including applicable regulations, stipulations, and/or approval conditions, will be considered a violation, subject to the enforcement provisions of 43 CFR Subpart 3277.

Required Notifications

1. The operator and contractor shall contact the BLM, Stillwater Field Office- (775) 885-6115, and the Bureau of Reclamation-(775) at least 48 hours prior to commencement of access and site construction or reclamation activities.
2. The operator shall contact the BLM PET at least 24 prior to the following operations: Spudding, Running and cementing of all casing strings, and BOP(E) tests.
3. In any emergency situation, after hours authorization may be obtained by a field office authorized officer listed above.

Pre-Construction

1. All access roads will be constructed and maintained to BLM road standards (BLM Manual Section 9113)
2. Proposed surface disturbance and vehicular travel will be limited to the approved well location and access route
3. Any changes in well location, facility location and access or site expansion must be approved by the authorized officer in advance.
4. Any changes in well location, facility location, and access or site expansion must be approved by the authorized BLM officer and Reclamation in advance.
5. The underside of all heavy equipment will be cleaned by water before entering federal lands to do work. Driving through or parking on noxious weed infestations will be avoided.

Well Pad and Facility Construction

1. A site diagram depicting the location of production facilities, recontoured slopes and stabilization measures shall be approved by an authorized officer prior to installation of production facilities.
2. The design of all facilities, including well pads, roads, pumps, and pipelines, shall be approved by the authorized BLM officer in consultation with Reclamation prior to construction to avoid unnecessary conflicts with visual resources management objectives.
3. Drainage from the disturbed areas will be confined or directed so that erosion of undisturbed areas is not increased. In addition, no runoff water (including that from roads) will be allowed to flow into intermittent or perennial waterways without first passing through a sediment-trapping mechanism. Erosion control structures may include: waterbars, berms, drainage ditches, sediment ponds, or other devices.
4. Access road construction for exploratory wells should be planned such that a permanent road can later be constructed in the event of field development.
5. Construction of access roads on steep hillsides and near watercourses will be avoided where alternate routes provide adequate access.
6. Access roads requiring construction with cut and fill will be designed to minimize surface disturbance and take into account the character of the landform, natural contours, cut material, depth of cut, where the fill material will be deposited, resource concerns, and visual contrast.

7. To maintain esthetics values, all semi-permanent and permanent facilities will be painted to blend with the natural surroundings. The Standard Environmental Colors will be used for color selection.
8. As required, fill slopes surrounding culverts will be rip-rapped with a well graded mixture of rock sizes containing no material greater than two feet or smaller than three inches. The ratio of the maximum to minimum dimension of any rock shall not exceed 6:1.
9. Water turnouts needed to provide additional drainage will be constructed not to exceed two percent slope to minimize soil erosion.
10. Well site layout should take into account the character of the topography and landform. Deep vertical cuts and steep long fill slopes should be avoided. All cut and fill slopes should be constructed to the least percent slope practical.
11. Trash will be retained in portable trash cages and hauled to an authorized disposal site for disposal. Burial or burning of trash will not be allowed unless done at an authorized site.
12. No drilling or storage facilities will be allowed within 650 feet of any pond, reservoir, canal, spring or stream. Other protective areas near water may be required to protect riparian habitat and T&E species.
13. Springs and water developments on public lands may be used only with the prior written approval of the authorized BLM officer in consultation with Reclamation and the water rights holder.
14. To maintain esthetics values, all semi-permanent and permanent facilities will be painted to blend with the natural surroundings. The Standard Environmental Colors will be used for color selection.
15. Fences shall not be cut without prior approval of the authorized BLM officer and Reclamation. Before cutting through any fences, the operator shall firmly brace the fence on both sides of the cut; a temporary gate will be installed for use during the course of operations, unless the fence is immediately repaired. Upon completion of operations fences shall be restored to at least their original condition.
16. The depth of surface soil material to be removed and stockpiled will be specified by the authorized BLM officer in consultation with Reclamation. If topsoil is stockpiled for more than one year, the stockpile shall be seeded or otherwise protected from wind and water erosion. The stockpile shall be marked or segregated to avoid loss or mixing with other subsurface materials. Any trees removed will be separated from soils and stockpiled separately.
17. Mud, separation pits and other containments used during the exploration or operation of

the lease for the storage of oil and other hazardous materials shall be adequately fenced, posted or covered.

18. Lessee/operator shall comply with all regulatory requirements for storage and handling of hazardous materials and wastes.
19. If historic or archaeological materials (other than human remains) are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, flag the cultural resource for avoidance, and contact the authorized BLM officer. Within five working days the authorized BLM officer will inform the operator as to:
 - a. whether the materials appear eligible for the National Register of Historic Places;
 - b. the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
 - c. a time frame for the authorized BLM officer to complete an expedited review under 36 CFR 800.11 or other applicable Programmatic Agreement, to confirm, through the State Historic Preservation Officer, that the findings of the authorized BLM officer are correct and that mitigation is appropriate.
20. If human remains are exposed at any time during the course of the project, work shall cease within 100 meters (330 feet) of the find and the remains shall be protected from further damage or exposure. If the remains are on lands managed by the federal government, the BLM must be notified immediately. The BLM will assume responsibility for coordination with local authorities, NSHPO, and appropriate tribes for discoveries on federal land. Local authorities will determine whether the remains are of an unrecorded dead body as defined by Nevada statutes (NRS 440.020) and whether the remains are part of a crime scene. If the remains are part of a crime scene, local law enforcement shall assume jurisdiction and responsibility, and NSHPO, BLM and Reclamation for federal lands, will be immediately notified, by telephone or in person. This notification will be followed by a written notification. Work will not resume until authorized by the local authorities. If the remains are Native American, the federal agency will follow the procedures set forth in 43 CFR 10, the Native American Graves Protection and Repatriation Act.
21. No surface use will be permitted within 0.6 miles of occupied raptor aeries (nests) during the nesting and fledging period.
22. Fences shall be flagged with bright colored flagging at least every rod from visibility to wild horses. All fences should be constructed using green steel posts with white or silver tops to increase visibility. Fences should also avoid obvious horse migration routes (deep trails, stud piles) if at all possible.

Hydrologic Monitoring

1. A hydrologic monitoring program would be instituted once exploration activities commence; the details of which are to be site specific and the intensity commensurate with the level of exploration. Monitoring activities would include reporting the number of aquifers encountered, their properties, their quality, and their saturated thickness. This information would be submitted to the BLM SFO in a timely manner. The evaluation program may include the quality, quantity, and temperature of any hot springs or other water resource within the project area.

Field Operation

1. Reserve pits and impoundments on well pads containing liquids would be excluded from wildlife access by fencing, netting, or covering at all times when not in active uses, in accordance with the Gold Book standards (BLM and USFS 2007). Escape ramps are required for all reserve pits and impoundments so that wildlife inadvertently entering the pit will be able to climb out. Should wildlife exclusion standards as denoted in the Gold Book not be adequate in preventing an over occurrence of wildlife mortalities, more stringent Nevada Department of Wildlife (NDOW) standards for fencing, netting, bird balls, escape ramps, reservoir slope (4:1 horizontal and 2:1 vertical) and woven mesh wire could be considered.
2. Operations shall be done in a manner which prevents damage, interference, or disruption of water flows and improvements associated with all springs, wells, or impoundments. It is the operator's responsibility to enact the precautions necessary to prevent damage, interference, or disruptions.
3. The operator shall regularly maintain all roads used for access to and within the lease units. A Maintenance and Dust Management Plan may be required. A regular maintenance program may include, but not be limited to: BLM authorized upgrading of existing roads, blading, ditching, culvert, drainage installation, and graveling or capping of the roadbed.
4. Management actions within riparian areas will be designed to maintain or, where possible, improve riparian habitat condition.
5. The operator shall not use Bureau of Reclamation operation and maintenance roads for lease related activities without prior written approval from the Bureau of Reclamation.
6. Noxious weeds which may be introduced due to soil disturbance and reclamation will be treated by methods to be approved by the authorized BLM officer in consultation with Reclamation. These methods may include biological, mechanical, or chemical. Should chemical methods be approved, the lessee must submit a Pesticide Use Proposal to the authorized BLM officer and Reclamation 60 days prior to the planned application date.

7. All drill rig and well test facility lights will be limited to those required to safely conduct the operations, and will be shielded and/or directed in a manner which focuses direct light to the immediate work area.
8. If previously unrecorded cultural resources are encountered during grading or other surface-disturbing activities, all grading or other surface-disturbing activities at the location of the discovery will cease within 100 meters/330 feet of the discovery, and the BLM and Reclamation would be notified. No surface disturbing activities will be allowed until the BLM authorized officer in consultation with Reclamation issues a Notice to Proceed (NTP) based upon the evaluation, mitigation, as necessary, and the acceptance of a summary description of the fieldwork performed for the discovery situation.
9. Petroleum products such as gasoline, diesel fuel, helicopter fuel, crankcase oil, lubricants, and cleaning solvents used to fuel, lubricate, and clean vehicles and equipment will be containerized in approved containers.
10. Hazardous material shall be properly stored in separate containers to prevent mixing, drainage or accidents. Hazardous materials shall not be drained onto the ground or into streams or drainage areas.
11. Totally enclosed containment shall be provided for all solid construction waste including trash, garbage, petroleum products and related litter will be removed to an authorized sanitary landfill approved for the disposal of these classes of waste.
12. All construction, operation, and maintenance activities shall comply with all applicable federal, state, and local laws and regulations regarding the use of hazardous substances and the protection of air and water quality.
13. In construction areas where recontouring is not required, vegetation will be left in place wherever possible and the original contour will be maintained to avoid excessive root damage and allow for resprouting.
14. Watering facilities (e.g., tanks, developed springs, water lines, wells, etc.) will be repaired or replaced if they are damaged or destroyed by construction activities to its pre-disturbed condition as required by the authorized BLM officer and Reclamation.

Drilling Operation

Drilling Plan - The drilling plan of the Geothermal Drilling Permit will be supplemented as follows:

1. If Hydrogen Sulfide is encountered well must be shut-in until measured amounts are determined and these must be reported to the BLM.
2. The operator shall obtain and maintain all necessary State of Nevada and local permits applicable to the drilling of this well.

3. For Air/Aerated drilling operations, the following equipment shall be utilized: banjo box (or equivalent); a staked down blooie line directed to a blooie pit a minimum of 100 ft. downwind of the wellhead .
4. Daily drilling and completion progress reports shall be submitted to the Nevada State Office Petroleum Engineer (PE) on a weekly basis, and shall include both daily mud reports and directional survey data.

Casing Pressure Control:

1. The results of the BOPE test shall be reported to the Nevada State Office Petroleum Engineer PE or PET.
2. All tests are required to be recorded on a calibrated test chart/graph and submitted to the Nevada State Office Petroleum Engineer PE or PET.

Reclamation and Abandonment

1. The operator or contractor will contact the authorized BLM officer and Reclamation 48 hours prior to reclamation work.
2. Restoration work may not begin on the well site until the reserve pits are completely dry.
3. Disturbed areas will be recontoured to blend as nearly as possible with the natural topography prior to revegetation with a BLM and Reclamation approved seed mix. This includes removing all berms and refilling all cuts. Compacted portions of the pad will be ripped to a depth of 12 inches unless in solid rock.
4. Site preparation for reclamation may include contour furrowing, terracing, and reduction of steep cut and fill slopes, installation of water bars, etc.
5. All portions of the access roads not needed for other uses as determined by the authorized BLM officer in consultation with Reclamation will be reclaimed.
6. The stockpiled topsoil will be spread evenly over the disturbed area.
7. The operator will be required to construct waterbars and re-open drainages on abandoned access roads and pipeline routes to minimize erosion as required. Water bars will be spaced appropriately dependant upon topography and slope. Pipeline routes shall be water-barred perpendicular to the fall-line of the slope.
8. The area is considered to be satisfactorily reclaimed when all disturbed areas have been recontoured to blend with the natural topography, erosion stabilized and an acceptable vegetative cover has been established.

9. Rehabilitation shall be planned on the sites of both producing and abandoned wells. The entire site or portion thereof not required for the continued operation of the well should be restored as nearly as practical to its original condition. Final grading of back-filled and cut slopes will be done to prevent erosion and encourage establishment of vegetation.
10. When sites are abandoned, they will be inventoried for the presence of noxious weeds and treated if noxious weeds are present.
11. Seed and mulch used to reclaim disturbed areas must be certified weed free. The seed mix will be developed by an experienced botanist in conjunction with BLM in coordination with Reclamation. Mulching of the seedbed following seeding will be required under certain conditions (i.e., expected severe erosion), as determined by the authorized BLM officer in consultation with Reclamation.
12. Seed will be broadcast between October 1 and December 31 using a site-specific seed mixture and depth of planting as determined by the authorized BLM officer in consultation with Reclamation. Seed may be applied with a rangeland drill at half the rate of broadcast seeding. All seeding application rates will be in pounds of pure live seed per acre. Seed should be adapted varieties.