

ALTERNATIVE 1
CONDITIONS OF APPROVAL
NEW YORK CANYON GEOTHERMAL UTILIZATION AND
INTERCONNECT PROJECT

Cultural Resources & Native American Religious Concerns

- TGP shall install fencing at a 30-foot radius around all cairns identified by the BLM. TGP shall coordinate with the BLM range specialist to determine the appropriate type of fencing.
- TGP shall provide training to all onsite employees on the importance of protecting cultural resources and the consequences of any violations. This training shall be presented every two years to continuing employees.
- Signage shall be implemented to indicate that access roads through the plant area and well pads are “no through traffic.”
- The traditional roads identified as CrNV-02-9535 and CrNV-02-9577 shall not be utilized by TGP for drilling, plant construction and/or access to the plant.
- TGP shall provide a 50 meter avoidance buffer on each of the traditional roads identified as CrNV-02-9535 and CrNV-02-9577. All disturbance and development shall be at least 50 meters (164 feet) away from these traditional routes.
- No construction, drilling or geothermal production shall occur within a ¼ mile of a boundary of a known NRHP eligible TCP.
- Since the proponent has agreed to avoid all NRHP eligible archaeological sites, no access roads shall be permitted through NRHP eligible archaeological sites. Should access roads have to pass through contributing elements of any NRHP eligible archaeological site, a data recovery/mitigation plan shall be developed before construction. This is to insure compliance with Section 106 of the National Historic Preservation Act.
- TGP shall not block access for the Native Americans to CrNV-02-9535 and CrNV-02-9577, nor put any impediments along these two routes which would prohibit travel along these routes by the Native Americans. Allow Native Americans access to TCPs and sacred sites. TGP shall not block access to the road running along the ridge of the Stillwater Range.
- TGP shall not conduct any off-road or cross-country travel. All vehicular travel must be on roads built and maintained by TGP.
- Well pads including sump perimeters in the southern leases (N-86890, N-76300, and N-76299) shall be successfully re-vegetated within six months after drilling and flow testing. Re-seeding shall be done using weed free and BLM approved seed mixtures. If used for production, the remaining unvegetated area must be less than 15 feet x 15 feet.

- All non-emergency construction, drilling and maintenance shall be prohibited in the southern leases (N-86890, N-76300, and N-76299) during September and October. If the pine-nut season extends into November, the above-listed activities shall be prohibited during that month. Each year, through consultation with the tribes and TCP users, the BLM will determine if the pine nut season extends into November.
- All exploratory drilling shall be done within 3 years.
- To reduce visual impacts to the settings of the TCPs, unless used for production, all well pads outside of the leases mentioned in #3 shall be reclaimed and revegetated within 6 months of exploratory/production drilling. For the wells used in production, the remaining unvegetated area must be less than 15 feet x 15 feet. All other areas of the production well pad must be re-vegetated within 6 months of construction.
- No pinyon trees marked as “Seed Trees” will be cut down for any of the construction.

Invasive Non-Native Species

- TGP shall revise the Invasive Plant Management Plan in place for the exploration phase to include all portions of the Project Area, including the Geothermal Development Area and the selected gen-tie route, and to address ongoing operations and maintenance activities. This plan shall be submitted to the BLM and must receive BLM approval prior to issuance of any Notice to Proceed and/or right-of-way grant. The plan must include, at a minimum, a proposed inventory schedule, including season of inventory, reporting schedule, methods of treatment and success criteria. Methods of treatment shall follow standard BLM Standard Operating Procedures and Best Management Practices.

Migratory Birds

- All preconstruction surveys shall follow standard Winnemucca District protocol. Where a protocol does not exist, proposed survey protocols must be approved by Winnemucca District prior to implementation.

Range Resources

- TGP shall place escape ramps every 200 linear feet around the perimeter of the sump, that are covered with geo-mesh, that are sloped 3:1 (horizontal:vertical) or flatter and that are at least 8 feet wide each.
- Fencing shall be installed 6-feet from the edges of the berms. Fences shall be 4-strand or chain-link of at least 4 feet high with the bottom 2 feet made of a mesh with holes no greater than two inches.

Special Status Species

- During development and production phases, artificial ponds will be fitted with floating balls. (To prevent birds and bats from becoming entrained in netting, netting shall not be

used.) Floating balls shall be installed in numbers that cover maximum fluid surface area at maximum allowable freeboard.

Vegetation

- Any graveled areas not identified for development within two years shall be topsoiled and seeded as described in Section 2.1.1.12 Restoration and Reclamation.

Visual Resources

- Construction of all facilities shall utilize screening on proposed stationary lights and light plants. Lighting shall be directed onto the pertinent site only and away from adjacent areas not in use with safety and proper lighting of the active work areas being the primary goal. Lighting fixtures shall be hooded and shielded as appropriate.

Wastes, Hazardous or Solid

- Reserve pit waste shall be sampled for hazardous contaminants. Typical tests may include the Toxicity Characteristic Leaching Procedure (TCLP) (EPA Method 1311), tested for heavy metals; pH (EPA Method 9045D); Total Petroleum Hydrocarbons/Diesel (EPA Method 8015B); and Oil and Grease (EPA Method 413.1). Contaminated materials, if any, shall be disposed of at an approved facility.

Water Quality (Surface and Ground)

- Water shall be monitored per a BLM-approved water monitoring plan developed for the development and utilization phase of the project. The plan shall be adapted from the water monitoring plan developed for exploration and may include various springs, surface water sources and groundwater sources. Production and utilization activities shall not begin until the BLM has approved the adapted (for production and utilization) monitoring plan. To provide an understanding of baseline conditions, at least four quarters of monitoring as directed by the exploration phase monitoring plan must have been completed and implementation of the adapted (for production and utilization) plan must be initiated prior to any production or utilization drilling.
- TGP shall not utilize any water from the stock pond, nor the seasonal creeks in any of their operations. TGP shall avoid doing any modifications to the stock pond that would destroy its integrity.
- Reserve pit waste shall be sampled for hazardous contaminants. Typical tests may include the Toxicity Characteristic Leaching Procedure (TCLP) (EPA Method 1311), tested for heavy metals; pH (EPA Method 9045D); Total Petroleum Hydrocarbons/Diesel (EPA Method 8015B); and Oil and Grease (EPA Method 413.1). Contaminated materials, if any, shall be disposed of at an approved facility.

Wildlife

- TGP shall place escape ramps every 200 linear feet around the perimeter of the sump, that are covered with geo-mesh, that are sloped 3:1 (horizontal:vertical) or flatter and that are at least 8 feet wide each.
- Fencing shall be installed 6-feet from the edges of the berms. Fences shall be 4-strand or chain-link of at least 4 feet high with the bottom 2 feet made of a mesh with holes no greater than two inches.

OPERATOR ENVIRONMENTAL PROTECTION MEASURES

This section lists the environmental protection measures that the Operator has committed to implement during construction and operation of the Proposed Action. These measures include standard operating procedures.

Air Quality

- TGP will surface access roads with aggregate materials, wherever appropriate.
- Speed limits will be posted and enforced to reduce fugitive dust (speed limit of 25 miles per hour, as necessary).
- Dust abatement techniques will be applied to earthmoving, excavating, trenching, and grading activities (such as watering, requiring loader buckets to be emptied slowly, minimizing drop heights, etc.).
- Workers will minimize equipment and vehicle idling times during construction activities.
- Van-pooling of employees between the Lovelock area and the plant site will be encouraged.

Cultural & Native American Religious Concerns

- TGP will avoid any disturbance within 30 feet of cairns (rock piles) within the Lease Area. TGP would stake-and-flag a 30-foot radius around the cairns and provide avoidance instructions to all on-site personnel and contractors.
- TGP will avoid ground disturbance of all NRHP eligible archaeological sites.
- To minimize the visibility of project features, the power plant, pipelines, and well heads will be painted a color that blends with the surrounding area, as approved by the BLM.
- To avoid light pollution onto adjacent areas as viewed from a distance, TGP will utilize lighting directed downward on to the site only and away from adjacent areas. TGP will utilize lighting that is hooded and shielded for all lighting associated with the project so as not to allow the bulb to shine up or out with the exception of vehicle headlamps and lighting required by the Federal Aviation Administration.

- To minimize the visibility of pipelines in the southern two thirds of the southern polygon, TGP proposes to paint any pipelines installed in this area in a camouflaging color pattern to reduce any potential visibility from Cornish Canyon. For pipelines aligned perpendicular to Cornish Canyon, only the side of the pipeline facing the TCP would be camouflaged. For other angles, painting would be done so as to camouflage all visible portions of the visible segments. A painting plan would be developed in coordination with BLM. TGP would employ an adaptive management approach to addressing any other visible portions of pipeline across the Project Area that were not anticipated to be visible in the Line of Sight analysis and in the visual simulations. This adaptive management approach would consist of the following steps:
 - If any BLM-verified complaints regarding the visibility of the pipelines are received from Tribal members, TGP would work with the BLM to identify the visible portions and would paint them in a camouflage color pattern.
 - For any sections of pipeline that remain visible from the TCPs after camouflaging with paint, TGP would then coordinate with BLM and incorporate vegetative screening along the eastern side of the affected sections. Plants preliminarily identified by the BLM as being suitable for such use include Sage brush, Basin wildrye (*Leymus cinereus*) and Sandberg bluegrass (*Poa secunda*).

Fire Resources

- All construction and operating equipment will be equipped with applicable exhaust spark arresters.
- Personnel will be trained in fire prevention and initial response at each drill site. Fire extinguishers will be available at each drill site.
- Water that is used for construction and operations will be available for plant fire suppression.
- Personnel will be allowed to smoke only in designated areas and will be required to follow applicable BLM policies regarding smoking during times of fire restrictions.

Invasive Non-Native Species

- Prior to construction, TGP will submit to BLM an invasive plant management plan to monitor and control noxious weeds. At a minimum, the plan would incorporate the following measures:
- Existing weed infestations would be treated per an approved BLM Pesticide Use Permit prior to disturbance. The location of the weeds would be communicated to the Humboldt River Field Office weed coordinator, and treatment methods and herbicides used would be discussed prior to treatment.”

- Herbicides would be applied per label instructions.
- BLM or other personnel applying herbicides would use personal protective equipment while spraying or handling herbicides.
- Herbicide application operations would be suspended when wind speed exceeds 6 miles per hour or when precipitation is imminent.
- Some treatment areas could be signed, if needed, indicating the herbicide used and the date of treatment. Areas which that are isolated and/or receive very little use by human beings would not be signed.
- During herbicide treatments, a pre-application sweep of the area would be completed (i.e., looking for nesting birds). Any areas that become infested with weeds during construction would be mapped and treated.

Lands and Realty

- Applicant shall contact ROW holder for location on underground utilities.
- TGP would coordinate with the owner of any fences intersected by project components and would arrange for the temporary removal of sections of fences for construction access, and for the reinstallation of fences and gates, as needed, to provide access for maintenance activities. Any modifications to existing fences would be done only with prior agreement from the affected fence owner and would be paid for by TGP.

Migratory Birds

- Migratory bird protection measures are listed under Section 2.1.11.6, Raptors, which discusses the Bird and Bat Conservation Strategy/Eagle Conservation Plan.

Paleontological Resources

- Subsurface disturbance would not occur in stock pile areas or as a result of overland travel routes.

Wastes, Hazardous or Solid

- Small quantities of solid wastes (paper, plastic, and other garbage) generated by the Proposed Action will be transported offsite to an appropriate landfill facility.
- Portable chemical toilet wastes will be removed by a local contractor.
- Sewage generated at the power plant will be treated in an on-site, state-permitted septic system.

- The Spill Prevention, Control, and Counter-measure plan will be submitted to and approved by the BLM and made readily available on site before operations begin.
- Secondary containment structures will be provided for all chemical and petroleum/oil storage areas during drilling operations. Additionally, absorbent pads or sheets will be placed under likely spill sources, and spill kits will be maintained on site during construction and drilling activities to provide prompt response to accidental leaks or spills of chemicals and petroleum products.
- Handling, storage, and disposal of hazardous materials, hazardous wastes, and solid wastes will be conducted in conformance with federal and state regulations to prevent soil, groundwater, or surface water contamination and associated adverse effects on the environment or worker health and safety.

Water Quality (Surface and Ground)

- Development and implementation of a construction Stormwater Pollution Prevention Plan and Spill Prevention, Control, and Countermeasures plan will occur.
- Erosion-control measures would be implemented.
- When permanent new access roads must cross ephemeral washes, rolling dips would be installed. The rolling dips would be designed to accommodate flows from at least a 25-year storm event. Culverts may be used wherever rolling dips are not feasible.
- Settled bentonite clay from drilling mud would accumulate on the bottom of the drill pad reserve pits and central sump to act as an unconsolidated clay liner, reducing the potential for drilling fluid to percolate to groundwater.
- A BLM-approved grouting and casing program for construction of observation wells would be implemented to prevent water quality effects on groundwater during or after well installation.
- Borehole geophysics analyses (cement bond logs) would be conducted to document that well casing grouting activities provide an effective seal isolating the geothermal aquifer from shallow alluvial aquifers, therefore minimizing potential impacts on surface springs or streams.
- The project would use BMPs to ensure that any geothermal fluid encountered during the drilling does not flow uncontrolled to the surface. These include the use of “blow-out” prevention equipment during drilling and the installation of well casing cemented into the ground.
- TGP would obtain necessary permits from NDEP for working in ephemeral streambeds and for groundwater discharge and provide a Notice of Intent to NDEP prior to well pad construction.
- TGP would submit a Geothermal Drilling Permit application, including detailed drilling and casing procedures, to BLM for approval prior to initiating geothermal drilling.

- In order to prevent a release of geothermal fluids to surface water features, drilling muds and geothermal fluids would be contained in the well pad reserve pit; or piped or trucked to the large central sump when quantities dictate.
- To avoid communication between the geothermal aquifer and the shallow groundwater aquifer, BMPs for well installation and testing would be implemented.
- A monitoring plan would be put in place to assess whether impacts on quality, quantity, or temperature of surface water occurred as a result of observation well installation and testing.

Soils

- BMPs, including development of a Spill Prevention, Control, and Countermeasure plan, would be implemented to prevent the release of hazardous materials to the environment which could affect soil resources.
- The operator will construct sumps and pits adequate, but not larger than proposed use. Operator would also comply with NDEP requirements to minimize sump slopes, which may result in a larger sump area. Topsoil would be salvaged and reused whenever possible and in a timely manner.
- Temporarily disturbed areas will be reseeded where previously vegetated using a BLM approved seed mixture.
- Erosion control measures, including but not limited to silt fencing, diversion ditches, water bars, temporary mulching and seeding, and application of gravel or rip rap, will be installed, where necessary, at the beginning of construction activities to avoid erosion and runoff.
- Access roads will follow existing contours to the maximum extent possible. In areas where new access roads must be constructed across slopes, erosion control measures will be installed as necessary, in accordance with Gold Book standards (BLM 2007).
- An average of six inches of gravel will be used as road surface because roads would be used during all seasons. Up to three feet of gravel may be used on some sections of road and no gravel would be used on road sections where the natural surface is adequate.
- Additional gravel will be laid down when ground conditions are wet enough to cause rutting or other noticeable surface deformation and severe compaction. As a general rule, if vehicles or other project equipment create ruts in excess of four inches deep when traveling cross-country over wet soils, the soil shall be deemed too wet for vehicle use, without the application of a gravel surface.
- If construction occurs in areas of very soft soils, up to three feet of aggregate will be used.

- An NDEP-BAPC Surface Area Disturbance permit documenting the best practical management practices to be used will be required for the project because the surface disturbed by the project will be greater than five acres.

Special Status Species

- TGP would contract a BLM-approved biologist to conduct a pre-construction survey of areas to be disturbed within the Lease Area for sand cholla. TGP would avoid any discovered sand cholla to the extent practicable. If a sand cholla needs to be disturbed, it would be transplanted by a BLM-approved biologist or other approved resource specialist to suitable nearby habitat within the Project Area.
- A Bird and Bat Conservation Strategy/Eagle Conservation Plan has been prepared and is being reviewed by the US Fish and Wildlife Service. TGP would comply with all protective measures included in the finalized version of the plan that the US Fish and Wildlife Service has concurred with. (Such concurrence will be a written Notice to Proceed (Form 2800-15), issued by the Authorized Officer or his/her delegated representative). TGP commits to the protective measures included in this draft version of the plan. These measures are considered part of the Proposed Action:
 - Structures would be constructed to conform to those practices described in Suggested Practices for Raptor Protection on Power Lines (APLIC 2006).
 - TGP will install bird flight diverters (visual markers) on gen-tie lines in areas with concentrations of raptors or other migrating birds to prevent mid-flight collisions. The number and color configurations would be determined in coordination with the BLM and NDOW. TGP would maintain or replace diverters as needed for the life of the project.
 - TGP will install perch-deterrent devices on all transmission structures within three miles of greater sage-grouse habitat to reduce raptor and corvid (ravens, etc.) use. The ultimate location in the application area will be determined in coordination with the BLM and NDOW.
 - TGP will use lighting directed downward onto the site only and away from adjacent areas. TGP will utilize lighting that is hooded and shielded for all lighting associated with the project, so as not to allow the bulb to shine up or out, with the exception of vehicle headlamps and lighting required by the Federal Aviation Administration.
 - TGP would avoid to the extent practicable any construction activities within 200 yards of identified bat colonies during the bat hibernation season of September 15th through April 30th.
 - Wells and roads would be recontoured and reseeded following completion of the Proposed Action. Erosion-control measures would be implemented and topsoil would be salvaged and reused whenever possible and in a timely manner.
 - Surface-disturbing activities during the migratory bird nesting season (April through July) may be restricted in order to avoid potential violation of the Migratory Bird Treaty Act.

- TGP would conduct a pre-construction burrowing owl survey and nesting bird survey. If any active nests are found in proximity to work areas, a buffer zone would be established around the nest and work would be avoided in this area until after young have fledged.
- The MBTA and stipulations of the geothermal leases held by TGP address requirements related to ground-disturbing activities during the migratory bird nesting season. In order to meet these requirements, either habitat for migratory birds would be eliminated within areas of proposed disturbance prior to the nesting season, or migratory bird nest surveys would be conducted no more than two weeks prior to surface disturbing activities by a qualified biologist acceptable to the BLM. This survey would be conducted to identify either breeding adult birds or nest sites within the specific areas to be disturbed. If active nests are present within the areas to be disturbed, TGP would coordinate with the BLM to develop appropriate protection measures for these sites, which may include avoidance, construction constraints, and the establishment of buffers.
- Use existing roads to the extent possible.
- Avoid construction designs (including structures such as meteorological towers) that increase the risk of collision, such as guy wires. If guy wires are used, mark them with bird flight diverters (according to the manufacturer’s recommendation).
- Personnel will be trained to be alert for wildlife at all times, especially during low visibility conditions.
- Personnel, contractors, and visitors will be instructed to avoid disturbing wildlife, especially during the breeding seasons and seasonal periods of stress.

Vegetation

- The BLM-approved seed mixtures as shown in Table 2.11, Proposed Seed Mix, would be used.

TABLE 2.11
Proposed Seed Mix

Species	PLS lbs./acre	Bulk lbs./acre	PLS/sq. ft.
Fourwing saltbush	3.00	5.00	4
Shadscale	3.00	5.00	4
Indian ricegrass	1.00	1.25	4
Other native seed as approved By BLM	TBD	TBD	TBD
Totals	~7.50	~12.00	~17

Note: PLS = Pure Live Seeds

- TGP would consult with BLM regarding the timing of reseeded, specific seed mixtures, and application rates to be used to improve the success of reseeded.
- Disturbed areas would be re-contoured to blend with the surrounding topography. Topsoil would be salvaged whenever possible and reused in a timely manner.
- Impacts on vegetation would be minimized by reseeded all areas of access roads and well pads not required for subsequent energy production using weed-free and BLM-approved seed mixtures.

Visual Resources

- To minimize the visibility of project features, the power plant, pipelines, and well heads will be painted a color that blends with the surrounding area, as approved by the BLM.
- To avoid light pollution onto adjacent areas as viewed from a distance, TGP will utilize lighting directed downward on to the site only and away from adjacent areas. TGP will utilize lighting that is hooded and shielded for all lighting associated with the project so as not to allow the bulb to shine up or out with the exception of vehicle headlamps and lighting required by Federal Aviation Association.
- TGP would install aerial marker balls on portions of any installed transmission line identified by Naval Air Station Fallon as an area of frequent low altitude overflights. Aerial marker balls would allow the power lines to be visible to aircraft pilots and minimize collision risk.

Wild Horse Management

- TGP would underground segments of the pipeline in areas to facilitate wild horse passage. TGP would locate these undergrounded segments wherever a wild horse trail is identified up to every mile. Each buried segment would be at least 20 feet in length. Particular focus would be placed on maintaining access to Kitten Springs and Logan Spring. Locations would be developed in coordination with the BLM.
- TGP would ensure that its employees and all contractors are aware that it is illegal to chase or harass wild horses per the Wild Free Roaming Horse and Burro Act of 1971.