Nevada Geothermal Power Company

THERMAL GRADIENT HOLES – DRILLING OPERATIONS PLAN

Blue Mountain, Humboldt County, Nevada

March 4, 2011

PROJECT DESCRIPTION

Nevada Geothermal Power Company (NGPC) plans to drill 2 thermal gradient holes on federally leased land in the Blue Mountain area in Humboldt County, Nevada.

The thermal gradient holes will be drilled to map the aerial distribution of the thermal anomaly. The holes are designed as vertically drilled gradient holes to a nominal target depth of 1000 feet. These holes are only intended to obtain temperature measurements and determine thermal gradients. The thermal gradient holes will be terminated immediately if mud/water return temperatures reach 150°F.

DRILLING EQUIPMENT

A mud rotary or reverse circulation type rig will be used to complete the work. The rig will be truck mounted and will be accompanied by four to five trailers of support equipment.

DRILLING PROCEDURES

The surface hole will be drilled mud rotary with a 12 1/4" bit to 100' then an 8 5/8" surface casing will be set and cemented in place. Drilling with a 7 7/8" bit will continue to total depth. Depending on penetration rates air drilling may be used in the 7 7/8" hole. The origin of the water used for drilling activities will be the cooling tower wells located in section 14 and 35.

The completed holes will be lined with a 2" steel pipe and capped on bottom. The annulus will be sealed with bentonite and a cement seal will be placed from surface to -40 feet. The 2 inch pipe will be filled with water, capped and allowed to remain static. The holes will be completely sealed from the environment so as not to allow any contamination. Approximately 2 feet of 2" pipe will protrude form the surface. Each well will have a monument or lock place attached to it in order to prevent any vandalism or tampering. The holes will be monitored for a period of 1-2 years while the project is ongoing. This would enable temperature gradients to be measured over the course of the project.
CASING PROGRAM

The casing program will be as follows:

12 1/4" hole to 100' 8 5/8" casing
22.36# 0.25" wall
7.972" drift

7 7/8" hole to 1000' 2 3/8"
3.65# .154 wall
2" drift

MUD MATERIALS

The drilling media will be a water-based combination of bentonite and polymers.

LOGGING

A geologist will be on site throughout the drilling operations to log the drill cuttings, coordinate with the drilling staff and daily drilling reports will be completed. Drill cuttings will be collected by the rig crew at 10 foot intervals, washed, dried, and bagged. A geologist will examine the drill cuttings on site and prepare a written description of the cuttings. A copy of the geological log and all temperature surveys will be sent to the BLM. A set of the drill cuttings will be sent to the Nevada Bureau of Mines and Geology after the drilling program is completed.

BLOWOUT PREVENTION EQUIPMENT

No blow out prevention equipment is required. Drilling will terminate at 1000' or if mud return temperatures reach 150°F, whichever comes first. A water truck will be on site to pump cold water down the well in case it is necessary to kill the well.

TEMPERATURE GRADIENT

A detailed gradient will be obtained upon completion and an equilibrated temperature profile will be obtained after completion.
WELL SITE LAYOUT AND DESIGN

The sites have been selected with very limited surface disturbance necessary as they are close to existing dirt access roads. The drill site will be approximately 150’ x 150’. A 40’ x 20’ x 15’ drilling reserve pit will be dug at the drill site.

SURVEY PLAT

The well locations will be surveyed by a certified land surveyor and a survey plat will be filed with the DOM within 30 days of drilling completion.

SURFACE DISTURBANCE AND RECLAMATION

The amount of surface disturbance for each drill site will be minimal. Drill cuttings will be removed for storage to our warehouse in Winnemucca. The drilling reserve pit will be dewatered and leveled. The site will be reclaimed and re-seeded in accordance with state regulations.

Access routes to the drilling locations will be 12’ width two track roads with no blading required. At a total length of approximately 8247ft, access roads will equate to approximately 2.27 acres of surface disturbance.

Each of the two pads (at 150’ x 150’) will create approximately .52 acres of surface disturbance. The total surface disturbance of the two pads and two access roads will be approximately 3.31 acres.

If any ancillary equipment associated with the drilling activities cannot fit on the proposed well sites then these materials will be staged in from of the Faulkner 1 Power Plant in Section 15, T36N R34E.

SUPPLEMENTAL INFORMATION

The manpower associated with this job will be the rig crews plus 2-3 NGP personnel. The drill crew will work 24hrs/day in 12 hour shifts. Each shift will have a drill crew of 3-4 people all travelling in the same vehicle and each well should take approximately 3-4 days to complete. Upon completion of their shift the drill crew will return to Winnemucca where they will be lodging at one of the local motels. No onsite accommodations will be present.

Upon completion of the wells they will be left for a period of one week and allowed to equilibrate. Once they have stabilized, readings may be taken on a monthly basis for the next three months. If no changes have been observed in that period, then monitoring will be approximately every 6 months for up to 2 years.
Legend
- - Proposed Access Routes
Staging Area
○ Temperature Gradient Holes
-- Existing Access Routes
2007 EA Boundary
Blue Mountain Leases

Land Ownership
Bureau of Land Management
Private

Scale is 1:24,000
USGS 7.5' Quad name: Gaskell
100k Map Name: Winnemucca

Winnemucca District Office
Humboldt River Field Office
5100 E. Winnemucca Blvd.
Winnemucca, NV 89445
Map Date: March 10, 2011

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