

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: United States Geological Survey (USGS) Geotechnical Drilling for USGS-144

SECTION B. Project Description and Purpose:

The U.S. Geological Survey (USGS) needs geologic, stratigraphic, and hydraulic data for the purpose of characterizing groundwater flow and water quality in the eastern Snake River Plain aquifer. Monitoring wells are constructed to obtain the needed data, and the USGS has identified the need for an additional monitoring well. The proposed well is needed to provide coverage for information gaps related to regional geologic stratigraphy and groundwater flow by providing water quality information for the movement of a potential nitrate plume derived from old mercury ponds south of the Central Facilities Area (CFA) and to better track tritium movement from the Idaho Nuclear Technology and Engineering Center (INTEC). Waste Area Group monitoring at CFA has indicated a local groundwater flow path moving to the southeast from CFA, and the proposed new well location would help verify the hydrology of the area.

The proposed action would continuously core geotechnical borehole USGS-144 to a depth of about 1,000 ft below land surface. After coring, USGS-144 would be constructed as a monitor well and used to measure and collect aquifer data. Borehole USGS-144 is sited southeast of CFA and off of highway 20/26 (see Figure 1). This well location is necessary because it is located away from other wells at the Idaho National Laboratory (INL) Site and would provide the information needed to address the information gaps previously described. Additionally, this location is 150 ft from the power line and within the exempted core for power lines (164 f) identified in the *Candidate Conservation Agreement for Greater Sage-grouse (Centrocercus urophasianus) on the Idaho National Laboratory Site* (U.S. Department of Energy, Idaho Operations Office [DOE/ID] and U.S. Fish and Wildlife Service, DOE/ID-11514, September 2014). The location would be mowed from the power line out 150 ft, and the well positioned between 100 and 125 ft away from the power line.

Figure 1. Location of USGS 144



Borehole USGS-144 would make use of the powerline road and would be located right off the powerline road to the east to minimize impacts to cultural and historical resources. The proposed well location is near the highway, and interaction with wildlife and habitat is expected to be minimal. Soil disturbance would result from transportation and staging activities that are adjacent to roadways and drill

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sites. The area disturbed for borehole coring is expected to approximately 200 ft x 200 ft. After drilling, disturbance at the site would be limited to an area needed to drive a truck and generator for sampling. Efforts would be made to minimize sagebrush disturbance.

USGS personnel would construct USGS-144 using a Christensen™ CS-1500 truck-mounted coring unit; final monitoring well construction, setting casing, and well screen (if needed) would be performed using a Gefco™ SD-300 drill rig. Support equipment would include a Sullair air compressor, water truck, semi-truck with trailer, and utility truck. The USGS would archive all removable core material in the INL Core Storage Library (CFA-663) for further studies. After coring, the geotechnical corehole would be re-drilled to accommodate casing, casing seal, and materials necessary for final well construction. The completed well would be added to the USGS Long-Term Monitoring Network. When no longer needed, USGS-144 would be closed in compliance with all applicable requirements.

The USGS plans to begin coring activities in the summer of 2016. Coring work is anticipated to take approximately 8 weeks. Final construction including reaming, setting casing, annular seal, and measurement line is anticipated to take an additional 4 weeks. Estimated project costs are \$260,000. A well drilling permit for USGS-144 was submitted to the Idaho Department of Water Resources in January 2015.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

USGS personnel would use a truck mounted coring unit with an air compressor to core the borehole. Because drilling activities would be conducted several hundred feet below the surface, air pollutants from the borehole would not be of concern. There would be exhaust from operation of the coring unit and other heavy equipment, but these emissions would be below reportable levels. There is a potential for fugitive dust.

Discharging to Surface-, Storm-, or Ground Water

Project activities would result in the discharge of wastewater from the drilling operation to the ground. Project personnel would work with Waste Generator Services (WGS) to determine the appropriate waste disposal pathways.

Disturbing Cultural or Biological Resources

Cultural resource surveys would be completed prior to drilling the well and working within associated laydown areas to ensure potential cultural resources would not be impacted.

Although the chance for increased biological disturbance at the wellhead site on existing roadways is minimal, there is the potential for some impact to wildlife and habitat during the course of the proposed action. Sage grouse could be impacted by noise and soil disturbance.

Generating and Managing Waste

Core drilling activities would generate several hundred cubic feet of rock cuttings and drilling fluid, most of which would enter fractures in the corehole. Drilling activities would also generate about 150 cubic feet of basalt and sediment core, all of which would be archived at the INL Core Storage Library for future studies. Project activities would also generate limited amounts of used personal protective equipment (PPE) and miscellaneous industrial waste. This waste would be disposed at the INL landfill through WGS. Project personnel would incorporate waste minimization measures by obtaining reusable laundered PPE where practical.

Releasing Contaminants

Diesel fuel for operation of drilling equipment would be stored in fuel tanks. Other chemicals such as hydraulic oil may also be used. Because this project would use petroleum products and possibly other potentially hazardous industrial chemicals, there is the potential for release of small amounts of contaminants into the air, water, or soil.

To minimize the potential impact of contaminant release, project personnel would use non-hazardous chemical substitutes in place of hazardous chemicals as long as the non-hazardous substitutes meet the requirements and specifications needed. Project personnel would apply spill prevention and minimization measures during chemical use and storage and would reference Affirmative Procurement (Management Control Procedure [MCP]-592) as guidance to procure appropriate chemicals.

Using, Reusing, and Conserving Natural Resources

All applicable waste would be diverted from disposal in the landfill when possible. Project personnel would use every opportunity to recycle, reuse, and recover materials and divert waste from the landfill when possible.

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SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: 10 CFR 1021, Appendix B to Subpart D, item B3.1 categorical exclusion, "Onsite and offsite site characterization and environmental monitoring."

Justification: The proposed USGS action will provide additional capability to monitor and characterize flow through the Snake River Plain Aquifer. Project activities described in this Environmental Checklist (EC) are consistent with 10 CFR 1021, Appendix B to Subpart D, item B3.1 categorical exclusion, "Site characterization and monitoring ... Specific activities include, but are not limited to: ... (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (saturated) zone, well logging, and installation of water-level recording devices in wells ... (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck-or mobile-scale equipment, and modification, use, and plugging of boreholes)..."

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) Yes No

Approved by Richard Kauffman for Jack Depperschmidt, DOE-ID NEPA Compliance Officer on: 6/23/2016