DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

CX Posting No.: DOE-ID-INL-16-087

SECTION A. Project Title: United States Geological Survey (USGS) Geotechnical Drilling for USGS-142 and USGS-143 Rev 1 USGS-142A

SECTION B. Project Description and Purpose:

Concrete was used during construction of geotechnical borehole United States Geological Survey (USGS)-142, and cement overflowed into the section of the borehole where water levels were needed to be measured. The purpose of this revision is to drill an additional borehole, USGS-142A, approximately 10 to 25 feet from USGS-142 in order to measure water levels.

The proposed borehole would be located within the Sage Grouse Conservation Area (SGCA), but within a recent fire scar and co-located with existing infrastructure. Construction of the borehole would occur within the boundary of the existing well pad which is considered support infrastructure and excluded from the requirements 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 and U.S. Fish and Wildlife Service. DOE/ID-11514. September 2014).

The scope of work in the original environmental checklist is detailed below:

The U.S. Geological Survey (USGS) proposes to continuously core geotechnical boreholes USGS-142 and USGS-143 to a depth of 1,000 and 2,000 ft below land surface, respectively. Boreholes USGS-142 and USGS-143 would be constructed as monitoring wells and used to measure and collect aquifer data. Borehole USGS-142 (see Figure 1) would be sited approximately 5 miles west of the Naval Reactors Facility along road T-3. Borehole USGS-143 (see Figure 2) would be sited 4.75 miles northeast of the Materials and Fuels Complex (MFC) along road T-4. The purpose of borehole drilling is to obtain geologic, stratigraphic, and hydraulic data used to characterize groundwater flow and water quality in the eastern Snake River Plain Aquifer.

Boreholes USGS-142 and USGS-143 would make use of existing T-3 and T-4 roads to minimize impacts to cultural and biological resources. Interaction with wildlife and habitat would be minimal. Soil disturbance would be the result of transportation and staging activities located adjacent to roadways and drill sites.

USGS personnel would construct geotechnical coreholes using a ChristensenTM CS-1500 truck mounted coring unit. Final monitoring well construction, setting casing, and well screen would be performed using a GefcoTM 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 Idaho National Laboratory (INL) Core Storage Library (Central Facilities Area [CFA]-663) for further studies. After coring, the geotechnical corehole would be re-drilled to accommodate casing, casing seal, and materials determined necessary for final well construction. The completed wells would be added to the USGS Long Term Monitoring Network. When no longer needed, the boreholes would be closed in compliance with all applicable requirements.

Project activities would begin in late spring 2014. Coring work is anticipated to take approximately 8 weeks at USGS-142 and approximately 15 weeks at USGS-143. Final construction--including reaming, setting casing, annular seal, and measurement line--is anticipated to take an additional 6 weeks per well. Estimated project costs are $400,000.

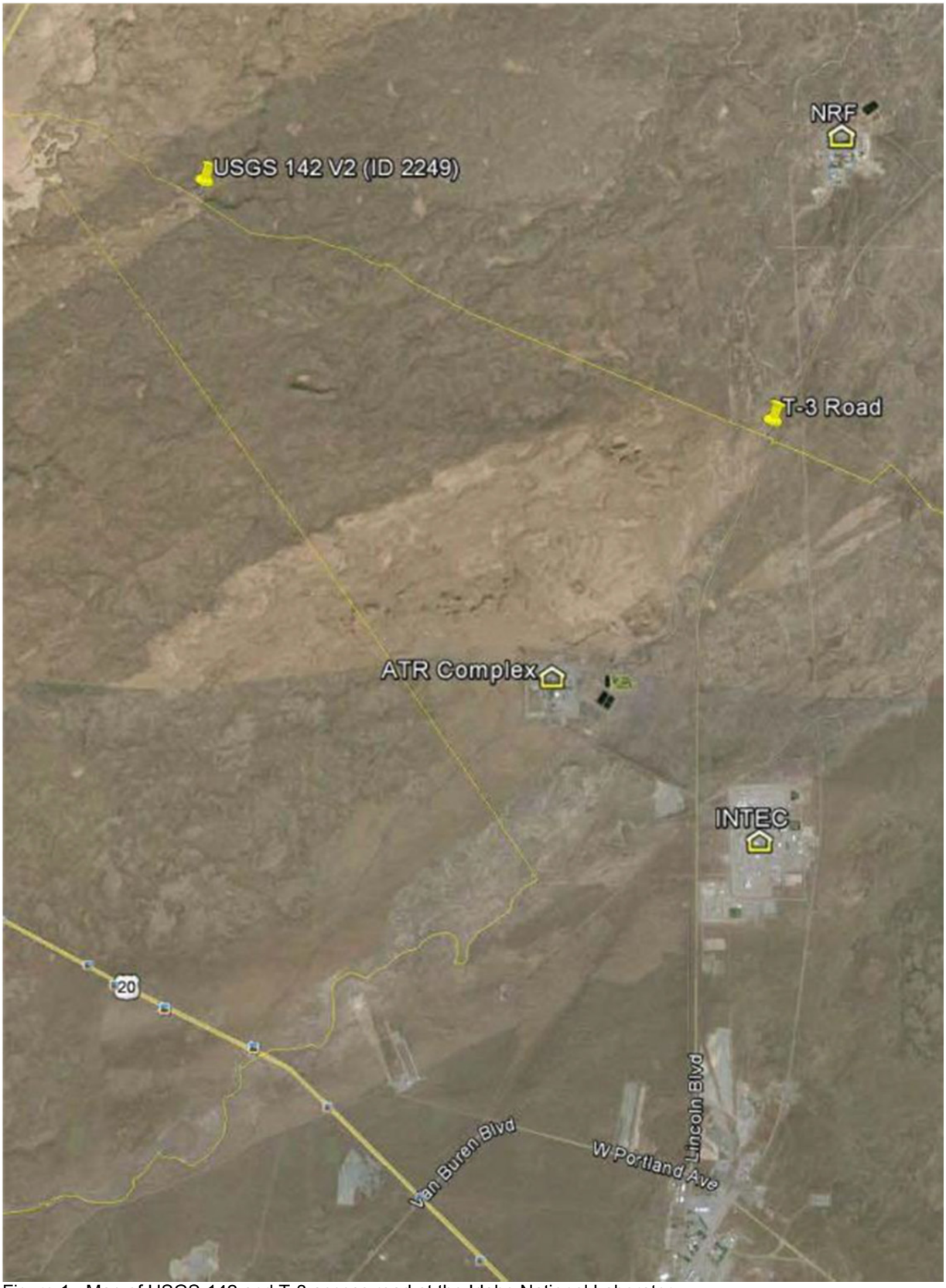

Figure 1. Map of USGS-142 and T-3 access road at the Idaho National Laboratory.

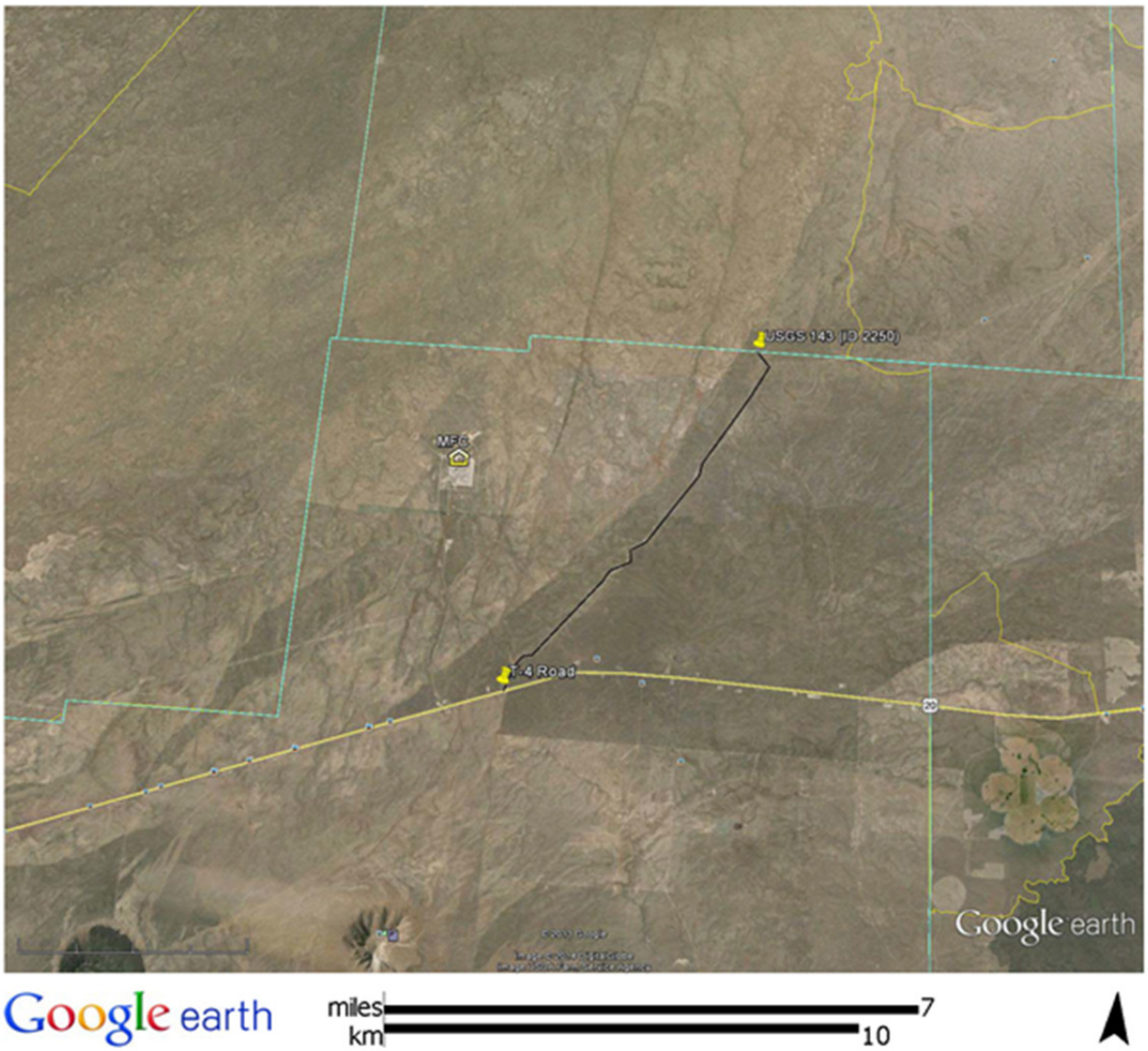

Figure 2. Map of USGS-143 and T-4 access road at the Idaho National Laboratory.

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 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 400 cubic feet of basalt and sediment core, all of which would be archived at the Idaho National Laboratory (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.

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 Department of Energy (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 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 Jason Sturm, DOE-ID NEPA Compliance Officer on: 7/26/2016