



**STATEMENT OF WORK**  
**Contract No. XXXXX**  
**TITLE: Hanford Geophysical Logging Services**

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**Part I**  
Statement of Work for  
**Hanford Geophysical Logging Services**

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Date: May 3, 2022  
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**TERMS**

ANSI	American National Standards Institute
BTR	Buyer's Technical Representative
CPCCo	Central Plateau Cleanup Company
CFR	Code of Federal Regulations
cps	counts per second
DOE	U. S. Department of Energy
DPOC	Delivery Point of Contact
Ecology	Washington State Department of Ecology
EDD	Electronic Data Deliverable
EMS	Environmental Management System
EPA	U.S. Environmental Protection Agency
ERSTI	Environmental Survey Task Instruction
ESH&Q	Environmental Safety, Health, and Quality
ft	foot/feet
IHT	Industrial Hygiene Technician
in	inch(es)
ISMS	Integrated Safety Management System
JSA	Job-Safety Analysis
m	meter(s)
SDS	Safety Data Sheet(s)
NEC	National Electric Code
NFPA	National Fire Protection Association
NRTL	National Recognized Testing Laboratory
OSHA	Occupational Safety and Health Association
OU	Operable Unit
POC	Point of Contact
QA	Quality Assurance
RCT	Radiological Control Technician
RL	DOE Richland Operations Office
SOW	Statement of Work
RWP	Radiological Work Permit
S/CI	Suspect/Counterfeit Item
SGRP	Soil and Groundwater Remediation Project
SRSTD	Scheduled Radiation Survey Task Description
WAC	<i>Washington Administrative Code</i>
WAL	Well Access List

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## **1.0 INTRODUCTION / BACKGROUND**

The Hanford Site covers approximately 580 square miles. Past nuclear weapon production activities at the Site resulted in approximately 1.7 trillion liters (450 billion gallons) of liquid waste being released to the ground. Much of the associated contaminants remain in the vadose zone, between the top of the water table and the surface of the ground, but some have reached the groundwater. Hazardous chemical contaminants include carbon tetrachloride, chromium, and nitrate. Radioactive contaminants typically include iodine-129, cobalt-60, cesium-137, nickel-63, carbon-14, strontium-90, technetium-99, tritium, and uranium. The U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology) have developed a remediation plan for protecting the Columbia River Corridor. The CPCCo is largely responsible for ensuring the plan is implemented.

Geophysical Logging is required to support on-going drilling, groundwater, and soil characterization efforts. These services are in support of Central Plateau Remediation Company (CPCCo) work scope for the period estimated to start October 1, 2022, through September 30, 2024, with a one-year option period. CPCCo is a prime contractor to DOE and all work on this Statement of Work will be performed in support of the CPCCo contract with DOE. CPCCo shall provide government-furnished equipment to the Contractor, including three (3) logging trucks, three (3) support vehicles, and geophysical logging sondes. The number of logging trucks, support vehicles, and geophysical logging sondes may be adjusted over the contract depending on project need.

## **2.0 DESCRIPTION OF WORK – GENERAL**

The Contractor shall support CPCCo by providing geophysical logging services. The three required logging services are:

1. spectral gamma logging system (SGLS) by (digital) down-hole multi-channel analyzer (DHMCA),
2. Neutron moisture logging services (NMLS), and
3. Gyroscope deviation logging services

These logging services support CPCCo's Soil and Groundwater Operation activities. SGLS and NMLS will be provided on an "as needed" basis to support the installation of new RCRA/CERCLA/AEA groundwater monitoring, extraction, and injection wells, drilling of soil characterization boreholes, and surveillance of existing boreholes and wells.

Drilling at the Hanford Site generally is conducted within a thick (up to 600 ft) sequence of unconsolidated sediments. Resource conservation wells are generally drilled with several strings of temporary casing, downsized when drilling becomes difficult or when confining layers are reached. Logging typically occurs inside 50-150 ft strings of temporary casing. In a typical year, about 30 new wells are drilled requiring

approximately 10,000 vertical feet of logging for spectral gamma and approximately 8,000 vertical feet of neutron moisture logging above the water table.

The gyroscope deviation logging service will be performed in newly installed wells located in 200 East once the wells are complete. In a typical year, about 10 new wells are installed in 200 East requiring approximately 2,500 vertical feet of gyroscope deviation logging.

The Contractor shall provide maintenance and storage for current geophysical logging equipment and additional logging capability. Implementation of additional logging systems shall be processed as a change order to the contract. The Contractor shall provide maintenance and storage for the following additional systems:

- A. Small Diameter Logging Services
- B. Passive Neutron Logging Services
- C. High-Rate Logging Services
- D. Neutron Capture Logging Services
- E. Conversion of past data to the Hanford Environmental Information Systems Geophysical Logging (HEIS\_GPL) Format
- F. Multi tool Small Diameter Logging

These activities will be defined with as much lead time as possible to allow the Contractor to plan timely support. Logging services will consist of a unique grouping of appropriate tasks to accomplish the required service.

Tasks included in this Statement of Work (SOW) are shown on Table 1. The Contractor will coordinate with the Buyer’s Technical Representative (BTR) at each drilling and well location to schedule logging support.

**Table 1: Geophysical Logging Subtasks.**

Item No.	Description
<b>100</b>	<b>Project Management</b>
100.1	Operations Management
100.2	Technical Program Management
100.3	Plan of the Day (POD) Meetings
<b>200</b>	<b>Geophysical Logging</b>
200.1	Logging Equipment Inventory
200.2	Logging Equipment Maintenance, Testing, and Repair
200.3	Logging Equipment Calibration and Certificates
200.4	Logging Set Up and Operation: SGLS (10,000 ft/yr)
200.5	Logging Set Up and Operation: NMLS (8,000 ft/yr)
200.6	Logging Set Up and Operation: Gyroscope (2,500 ft/yr)
200.7	Logging Set Up and Operation: Other Systems

Item No.	Description
200.8	Logging Reporting: Preliminary, Final, and Nonroutine
200.10	Neutron capture logging systems (100/300 Area)
<b>300</b>	<b>Operations Support</b>
300.1	Logging Calibration Models Maintenance
300.2	Logging Truck Staging and Maintenance
300.3	Logging Casing Evaluation: Welded and Threaded
300.4	CPCCo Procedures: Work Basis, Revisions as Needed
300.5	Job Hazard Analysis: Maintained and Current
300.6	Liquid Nitrogen Delivery – SGLS Support
300.7	Coordinate Sealed Sources with CPCCo Radcon - NMLS
300.8	Fabrication: Hardware, Metal, Electronics, Software
300.9	Maintenance and Portable Toilets at Calibration Models

### 3.0 DESCRIPTION OF WORK – SPECIFIC

#### 3.1 Project Management

- A. Contractor shall provide sufficient management of activities under the contract. Activities are of a technical nature and require significant logistical planning and support to execute effectively. Contractor shall provide sufficient logistical, operational, and technical oversight of activities to meet project objectives

#### 3.2 Operations Management

The Contractor shall provide operations management to ensure that the logging sondes are in proper working order, available for use, and staged with the appropriate logging truck at various well sites as required. Operations management should account at a minimum for scheduling maintenance, calibration and repair of logging sondes, winches, cables and associated equipment along with scheduling the maintenance of the logging trucks as needed. The contractor shall maintain an off-site facility with office space, laboratory and shop space, and a secure outdoor storage area for large equipment, tanks, and vehicles.

The Contractor shall secure all necessary registrations, training, medical exams, bioassay evaluations and appropriate dosimeters required prior to performing any on-site work.

Additionally:

- A. The Contractor shall mobilize required equipment, and materials to the work site.
- B. The logging sites shall be set up in accordance with the Contractor’s Job Safety Analysis as specified in [CPCC-PRO- SH-40078](#), *Contractor Safety Processes*, APPENDIX F, *Safety Program Specifications for Contractors*, and shall receive concurrence from both the BTR and CPCCo Safety. The Contractor shall:
1. Post appropriate signs (e.g., hard hat, safety glasses, hearing protection, and footwear) for the job sites.

2. Comply with all radiological postings established by CPCCo.
3. Control access to the work site.
4. Coordinate site setup with BTR to ensure compliance with traffic area restrictions around the sites.
5. Deviations from these requirements, or changes dictated by geographic features must be approved in writing by CPCCo safety and the BTR.

CPCCo will provide equipment and vehicles required to support logging activities (Section 3.1.1.5), including high-purity germanium crystals and sealed radioactive sources needed to support geophysical logging activities. See section 6.4 for handling sources.

CPCCo will provide calibration models to maintain calibrations of the neutron and spectral gamma sondes. The calibration model site is located on the east edge of the 200 West Area on the Hanford Site. These models are reference standards of known values that are periodically used to test the responses of the sondes to ensure that they are reading correctly within a narrow tolerance. The Contractor shall prepare a report or calibration certificate documenting that the sondes are in proper working order. The Contractor shall utilize and maintain the calibration models as part of the work scope. The contractor shall maintain tarps and covers on the models as appropriate to protect them from the elements.

Contractor is responsible for providing all equipment, tools, materials, supplies, and each item of expense. The following equipment and materials list is not inclusive:

- A. All industrial safety equipment for Contractor personnel (e.g., eye protection, hard hats, steel-toed footwear, safety vests, gloves).
- B. Appropriate hearing protection for all site personnel.
- C. Signs, T-posts, ropes, or other approved barricades for posting a zone. This may include traffic revision barriers and signage.
- D. Fire extinguishers.
- E. Cellular telephone or other communication device capable of initiating emergency notifications at remote work sites.
- F. Wash water and drinking water as required for this action.

The Contractor shall schedule deliveries to their off-site facility to the extent practicable. In the event that an on-site delivery is required, the Contractor shall work with the BTR to make arrangements as appropriate for Hanford Site access.

### **3.3 Waste Handling**

- A. The Contractor shall be responsible for packaging and for handling all wastes generated during logging. This will consist of containerizing the waste generated during logging activities at the worksite. Contact BTR for packaging and handling requirements.



- B. The Contractor is responsible to minimize waste generation.
- C. The Contractor shall package all waste that has come into contact with a well or groundwater as regulated waste. Waste from each well location should be bagged separately and the well ID or well name should be written on the outside of the bag. The waste shall be disposed in a container corresponding to either the drilling campaign (located near at the drill site) or the groundwater interest area (for existing wells). The Contractor shall contact the BTR for disposition instructions when unsure.
- D. The Contractor shall package all waste that has not come into contact with groundwater or a well as non-regulated, except chemical waste. Non-regulated waste may be disposed of in a standard dumpster. The BTR shall be contacted if the Contractor is unsure if the waste is regulated or non-regulated.
- E. The contractor shall contact the BTR for packaging and disposal instructions for any chemical waste.
- F. All water resulting from equipment decontamination (if any) shall be handled in the following manner. The water shall be essentially clear and absent of mud and heavy silt prior to loading into the purgewater truck. The soil shall be containerized. The BTR shall decide whether or not Water Works needs to be added to containers to absorb excess water.
- G. The Contractor shall clean up any and all waste generated from spills (i.e., hydraulic fluid, oil, fuel). In the event of a spill, the Contractor shall immediately notify the BTR and shall clean up and properly package the material. CPCCo is responsible for disposal of any spill waste cleanup that has contacted the ground soils. The Contractor shall dispose of spill cleanup wastes that have not contacted the soils.

If Contractor's responsibilities relating the management of dangerous waste overlap or are unclear, develop an agreement to be co-signed by the BTR identifying the organizational responsibilities for waste handling and material management.

### **3.4 Cleaning**

When logging activities are complete or when needed, the Contractor shall perform the following cleaning and demobilization activities:

- A. All down-hole equipment shall be cleaned with an approved cleaning solution such as Built Laundry Detergent, Smearaway, or Simple Green. The equipment is then rinsed with clean water when necessary, in a manner such that visible oils, grease, and dirt are removed.
- B. Contractor shall maintain cleanliness and foreign material exclusion by proper management of utilized materials to prevent intrusion of foreign materials. Contractor shall store, maintain materials, components, etc. in such a condition that damage is not encountered and meet manufacturer and CPCCo requirements.
- C. No equipment that is potentially contaminated will be returned to the Contractor

without thorough radiological monitoring to assure that it is free of contamination.

**3.5 Demobilization**

The following activities shall be performed by the Contractor for demobilization:

- A. All down-hole equipment shall be cleaned according to Section 3.1.1.2.
- B. Demobilize all equipment and materials from the well site.
- C. Clean-up and decontamination of equipment, and materials, including CPCCo supplied poly tanks, is included in demobilization activities.
- D. Equipment will be surveyed by CPCCo Radiological Control prior to leaving the well site as a confirmatory and precautionary measure.

**3.6 Organizational Interface**

The Contractor shall interface with various CPCCo (and other) organizations through CPCCo Contract Specialist (or designee), as required.

**3.7 CPCCo Furnished Materials and Equipment**

The following materials and equipment will be furnished by the BTR at no cost to the Contractor:

A. Geophysical Support Vehicles

<b>Vehicle Description</b>	<b>TAG#</b>
2018, Ford F250	G63-1353V
2019, Chevy Suburban	G62-1203W
2018, Chevy Suburban	G62-1615V
1983, Ford Logging Truck	E37579
1983, Ford Logging Truck	E37578
1994, Ford Logging Truck	E38187

B. Probes - Contractor will be responsible for the maintenance, calibration, and operational readiness of the five types of probes:

- 1. SGLS probes
- 2. NMLS probes
- 3. Gyroscope Deviation Probe
- 4. HRLS probes
- 5. PNLS probes

C. Other CPCCo Furnished Equipment, Identified in Attachment B, Sunflower Property System, CPCCo Furnished Equipment, Rev 0.

D. If additional equipment is needed to support the planned work the contractor shall submit a request for procurement of the equipment to the BTR as soon as practicable

so that schedules are not impacted by the timing of source acquisition.

### **3.8 Technical Program Management**

The Contractor shall provide technical program management of the work. This shall include technical oversight that the logging sondes are operating properly, recording data adequately, being calibrated correctly, and providing reporting of preliminary and final results that meets program needs.

### **3.9 Plan of the Day Meetings**

The Contractor shall conduct Plan of the Day (POD) meetings to establish requirements and logistics to employ staff and equipment resources appropriately to achieve project goals. Project work requires that staff and equipment be deployed in a precise manner to complete the required tasks. Contractor shall plan the work and work the plan.

### **3.10 Geophysical Logging**

The Contractor shall conduct a number of monthly tasks during the course of geophysical logging. These may include: maintaining the equipment inventory, equipment maintenance, testing and repair, equipment calibration, SGLS set up and operation, NMLS set up and operation, Gyroscope set up and operation, set up and operation of other systems, and reporting of logging results.

### **3.11 Equipment Inventory**

The Contractor shall maintain an equipment inventory and provide a monthly status on the equipment.

### **3.12 Equipment Maintenance, Testing, and Repair**

The Contractor shall maintain all equipment in good operating order and conduct testing and repairs as appropriate. The Contractor shall report on equipment status, including any maintenance, damage, or repairs.

### **3.13 Equipment Calibration**

The Contractor shall ensure that the logging sondes are calibrated at regular intervals in accordance with the applicable CPCCo procedures listed in Section 10.2.

### **3.14 SGLS Set Up and Operation**

The Contractor shall set up and operate the SGLS in accordance with the applicable CPCCo procedures listed in Section 10.2.

### **3.15 NMLS Set Up and Operation**

The Contractor shall set up and operate the NMLS in accordance with the applicable CPCCo procedures listed in Section 10.2.

### **3.16 Gyroscope Set Up and Operation**

The Contractor shall set up and operate the gyroscope deviation logging system in accordance with the applicable CPCCo procedures listed in Section 10.2.

### **3.17 Other Logging Systems Set Up and Operation**

The Contractor shall maintain other less frequently used logging systems in accordance with CPCCo procedures. These shall include the passive neutron logging system (PNLS), the high rate logging system (HRLS), small diameter gamma logging, APMI logging, check shot logging support, multi-tool small diameter logging system, and any other system that may be rented or otherwise arranged to be used to meet project objectives.

### **3.18 Reporting**

The primary deliverables of this contract are logging reports. The contractor shall report geophysical logging results in two formats which shall be submitted to CPCCo within 45 calendar days of logging activity completion. Preliminary logs for new boreholes that contain only the SGLS and NMLS curves to assist in field decisions are requested within two days. See Section 8.1 for Technical Deliverables. The Contractor also shall prepare reports documenting the calibration (calibration certificates) of the various sondes on an as-needed basis. The reporting formats are as follows:

- A. A PDF of the preliminary composite plot containing results of the SGLS (K-U-Th) and NMLS in one or several pages, format will be requested by the BTR.
- B. An electronic data deliverable (EDD) will be generated for loading logging results into the CPCCo HEIS\_GPL database. The contractor shall work with CPCCo to implement the Canadian Well Logging Society's LAS-2/3 format for HEIS\_GPL data. CPCCo shall accept the data after it has been successfully loaded into the HEIS\_GPL database and passes completeness and reproducibility testing conducted in house by CPCCo. Unsuccessful loading attempts will be rejected and returned to the contractor for appropriate fixes, upon which the file will then be resubmitted for loading. Incomplete or inaccurate data will also be rejected and returned to the contractor for appropriate fixes. See Attachments B for detailed EDD file requirements.
- C. A portable document format (PDF) file will be submitted for the Log Data Report. The PDF of the Log Data Report shall include the following information:
  1. Borehole Information
    - Borehole number, and well name (as appropriate) site name, survey coordinates (when available), depth to groundwater (when available), depth to bottom, casing information (stickup, ID, OD and wall thickness), borehole construction details and any other pertinent borehole notes.
  2. Logging Equipment and Log Run Information. The following shall be recorded for each log run:
    - a. Name of the detector and logging system
    - b. Operator name
    - c. Logging procedure used

- d. Calibration reference
  - e. Date that work was performed
  - f. Logging system
  - g. Reference point (top of casing or ground surface)
  - h. Start and stop depth
  - i. Count time and depth increment
  - j. Depth return error
  - k. Data file references
  - l. Pre and post verification results
  - m. Any system adjustments (e.g. fine gain adjustments) made during the run
  - n. Any pertinent comments or observations
  - o. Comments and observations related to the logging operation in general shall also be recorded.
3. Data Processing and Analysis
- Each report shall include:
- a. Analysis date
  - b. Analyst name
  - c. Data analysis reference
  - d. Reference to analytical procedures
  - e. Summary of pre- and post-log verification results and comparison to verification criteria
  - f. Discussion of any depth adjustments for each log run
  - g. Discussion of any correction factors (casing, water, etc.) applied to the data
  - h. Identification of the water level, as applicable, on the processed logs.
  - i. Identification of changes in borehole construction including materials or casing dimensions.
  - j. Identification of specific gamma energy lines used for identification and quantification.
  - k. Estimates of accuracy, precision and minimum detection threshold for each radionuclide detected
  - l. Analysis notes
  - m. Log plot notes

n. Log results and interpretations.

4. Log Results

Log results shall be plotted/reported as the measured property versus depth (e.g., concentration/activity versus depth, percent moisture content versus depth or counts per second (cps) versus depth. Required plots shall include:

For Spectral Gamma:

- a. Man-made radionuclide concentrations in picocuries/gram (pCi/g), (separate profiles for each radionuclide)
- b. Natural gamma concentrations (e.g., potassium-40, uranium-238, and Thorium-232) in pCi/g, (separate profiles for each radionuclide)
- c. Combination plot of man-made radionuclide concentrations in pCi/g, natural gamma concentrations in pCi/g, Total Gamma in cps, moisture and tool saturation or dead time when appropriate. A preliminary combination plot for a newly drilled borehole through total depth shall be provided to CPCCo as soon as possible to support well design.

For Neutron Moisture:

- a. Volumetric moisture content for calibrated casing sizes and materials; counts per second for uncalibrated casing sizes.
- b. Combination plot of volumetric moisture content in percent with percent dead time. A preliminary combination plot for a newly drilled borehole through total depth shall be provided to CPCCo as soon as possible to support well design.

For Gyroscope Deviation Logging or Equivalent:

Log result plots shall graphically, and in a numeric table, display deviation of the logged borehole both in a horizontal and vertical plane and provide a calculated correction factor for true depth to groundwater in each well.

5. Calibration Results

Calibration reports shall describe the reading of the measured gamma spectra or neutron counts versus the known quantity provided by each calibration model. The report shall describe whether the sonde is within operating tolerances and document the outcome of the calibration.

#### **4.0 TECHNICAL REQUIREMENTS**

Contractor will perform in accordance with the terms and conditions of this Contract, CPCCo internal policies and procedures, and quality assurance provisions, including safety programs, laws, orders, permits, rules, confidentiality of information and intellectual property safeguards.

#### **4.1 Codes and Standards**

Contractor shall perform work under the direction of the CPCCo BTR and safety requirements in accordance with the requirements of 29 CFR 1910.120.

#### **4.2 Electrical Safety Requirements**

For the purpose of worker safety, electrical equipment shall be in accordance with [DOE-0359](#), *Hanford Site Electrical Safety Program (HSESP)*. Electrical equipment and industrial control panels delivered or brought on to the site in performance of the Contract shall be labeled by an organization currently recognized by the Occupational Safety and Health Association (OSHA) as a Nationally Recognized Testing Laboratory (NRTL).

#### **4.3 Fire Protection Requirements**

All services under the management of the Contractor shall be performed in accordance with [CPCC-PRO-SH-40078](#), APPENDIX F, Section 3.1.1, which flows down the requirements of 10 CFR 851 and Hanford site requirements to the Contractor.

Flammable chemicals shall only be stored in an approved flammable cabinet. Under no circumstances will flammable products be stored in Conex, Job Box or toolboxes, storage cabinets, or other unapproved containers. The contractor will provide their own flammable cabinet.

Flammable & Combustible liquids that are dispensed into equipment as a fuel shall be done so from listed/approved safety cans. The safety cans shall be stored in the Flammable Cabinet.

In the case of a fire, immediately contact the Hanford Site Fire Station at 509-373-0911 and then contact the BTR.

#### **4.4 Work Management Requirements**

Requirements for coordinating, scheduling, and releasing work will be determined by the BTR, or designee, and Work Release agent for Groundwater.

Contractor will notify the BTR, or designee, before performing the work on any In-Use wells and will receive direction from the BTR, or designee, to access the wells.

#### **4.5 Storing, Using, and Handling Compressed Gas**

Contractor shall strictly comply with [CPCC-PRO-SH-40481](#), *Storing, Using and Handling Compressed Gases*, which defines the requirements for use, storage, and handling of compressed gas cylinders (Ref. also [49 CFR Parts 171-179](#), *Compressed Gas Association Standards*, and the National Fire Protection Association (NFPA) Standards 51 and 55 appropriate).

### **5.0 PERSONNEL REQUIREMENTS**

#### **5.1 Training and Qualification**

A. CONTRACTOR shall arrange for their and subcontract employees to complete the

- following safety-related training prior to applicable job assignments. When requested by the respective training organizations the CACN for this training is 602146:
1. CPCCo General Employee Training (3-5 hours).
  2. Ladder Safety (60-minute computer based training)
  3. Overhead Electrical Hazards Spotter Training, 3 hours.
  4. Radiation Worker II Training, 3 days, or 1-day recertification course (Retraining is required once every two years).
  5. Hexavalent Chromium Hazard Awareness, 1 hour.
  6. Source Handling at S&GRP, 1 hour.
- B. Required OSHA, special hazard training (with the exception of training courses that are only offered by the Site), and Job Specific Training shall be provided by the Contractor and includes at a minimum, the following:
1. 40-Hour Hazardous Waste Worker Training
  2. Hazmat General Awareness Transportation
  3. Drug/Alcohol Free Workplace
  4. 10-hour OSHA Construction Hazards Recognition Course for key supervisors (may be waived by CPCCo H&S Representative) (Retraining is required once every two years).
  5. First-Aid/CPR. One member of the Contractors on-site field team must be First-Aid/CPR qualified.
  6. 8-hour Hazardous Waste Supervisor Training for on-site supervisor.
- C. Prior to start of work, the Contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in [DOE/RL-92-36](#), *Hanford Hoisting & Rigging Manual*, and certification that all training is current. Training is to include but is not limited to: Safety, 8-10 hours with a 36-month retraining frequency accomplished through in-the-field evaluations on the equipment.

For previous training to be acceptable for Hanford Site qualification, documented evidence must include type and class of equipment. For qualifications not related to equipment operation, personnel must have documented evidence of training and experience related to the activity as specified by [DOE/RL-92-36](#). Specifically:

- The above requirements shall be verified through CPCCo Training Coordinator (Contact: Tami Fuller [509] 372-1446). Once this verification is complete, CPCCo Training Coordinator will notify the BTR and Contract Specialist indicating that the work crew's training requirements have been completed. If evidence of training course completion is requested by CPCCo Training Coordinator, this shall also be provided upon request.



D. The required training shall be completed prior to work.

E. Department of Transportation (DOT) Certification

Contractor shall be fully qualified in accordance with Federal law and rules promulgated by the Department of Transportation to transport hazardous and radiological wastes and materials on the Hanford Reservation. Contractor shall provide proof of its certifications by the DOT for such purposes and take all steps required to comply with DOT regulations including the marking of vehicles being driven by Contractor (see section 7.2.D).

## **5.2 Security and Badging Requirements**

For any on site work, general site access badging is required. Special clearance requirements will be provided, if applicable.

## **5.3 Site Access and Work Hours**

On-Site work will be done on a 4-10's schedule with hours of work between 6:00 AM and 4:30 PM, with one-half hour designated as an unpaid period for lunch. Extended shifts may be required to meet schedule requirements. The Contractor shall notify CPCCo's BTR of changes in the planned work schedule due to equipment failure or conflicting logging schedules. The Contractor shall observe plant closure days.

## **6.0 ENVIRONMENTAL, SAFETY, HEALTH, AND QUALITY REQUIREMENTS**

The Contractor shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work. The Contractor shall comply with, and assist CPCCo in complying with Environmental, Safety, Health, and Quality (ESH&Q) requirements of all applicable laws, regulations and directives.

All on-site work shall be conducted in accordance with, ESH&Q requirements given in [SP-5](#), *Special Provisions – On-Site Services*.

### **6.1 Safety Requirements**

The Contractor shall comply with the on-site provisions identified in [SP-5](#), *Special Provisions – On-Site Services*.

The Contractor shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work. The Contractor shall comply with, and assist CPCCo in complying with all applicable laws, regulations and directives.

The Contractor shall follow [CPCC-PRO-SH-40078](#), Contractor Safety Processes, Appendix F, the preapproved safety and health procedure; however, Contractor may submit, with proposal, an alternate safety program. The alternative program shall comply with federal, state, and local codes and [CPCC-PRO-SH-40078](#), Appendix F.

Contractor shall either use the Buyer provided safety plan or submit its own plan for Buyer approval prior to mobilization for unique hazards.

## **6.2 Quality Assurance and Control**

Geophysical logging tools shall be calibrated prior to use. Spectral gamma tools are calibrated at the Hanford Borehole Calibration Models. The minimum quality control (QC) criteria for spectral gamma logging shall be +/- 20% of source activity in counts per second for selected peaks (609 KeV, 1461 KeV and 2615 KeV). See section 7.2.H for submittal requirements.

## **6.3 Environmental Requirements**

Environmental requirements are contained in [SP-5](#), *Special Provisions – On-Site Services*. All on-site work shall be conducted in accordance with these requirements and as specified in this SOW.

The contractor shall be briefed on, and adhere to, the considerations and recommendations identified in the cultural and ecological reviews for the well locations in this scope of work. Questions about what constitutes a “cultural artifact,” prohibitions on bird nesting areas, and restrictions that may apply to work conducted within the Hanford Reach National Monument should be directed to the BTR or the Environmental Compliance Officer (ECO).

## **6.4 Radiological Requirements**

If work is deemed Radiological, the Contractor shall be subject to Title 10, Code of Federal Regulations, Part 835 as well as the *Central Plateau Cleanup Company*, [CPCC-00175](#), *Radiological Control Manual*.

### **A. Radiological requirements**

1. The radiological hazards at each well location will be evaluated prior to any geophysical activities. Once the wells are evaluated, they may be screened as a low radiological hazard based on previous drilling and sampling of nearby wells. Requirements for each well location will be communicated with the Contractor either through the Well Access List (WAL) or from the BTR. Radiological requirements could include daily, full time or morning and evening Radiological Control Technician coverage. Industrial hygiene coverage may include full time or morning and evening industrial hygiene technician (IHT) monitoring with field instrumentation. If at any point radioactive or industrial hygiene readings above specified action levels are encountered, work shall be stopped immediately and the BTR shall be contacted. If a Radiological Work Permit (RWP) is needed it will be prepared by CPCCo. The RWP will at minimum cover the requirements for working with the radiological contaminated materials. If chemical contamination is encountered, work shall be stopped immediately and the BTR be contacted. If an Industrial Hygiene Sampling Plan is needed it will be prepared by CPCCo.
2. Items belonging to the Contractor that: a) were located in known or suspected contamination areas; or b) become contaminated at levels exceeding DOE O 458.1 as implemented in [CPCC-00175](#), Article 421 will be surveyed. These

survey criteria values are contained in [CPCC-00175](#), Table 4-1. CPCCo will determine if release back to the Contractor is possible. If not possible, the Contractor will be compensated for items not released at fair market value.

3. Use of sealed sources (e.g., Cf-252 source) shall be subject to the requirements of SP-5, *Special Provisions for On-Site Services* and associated [CPCC-00175](#) radiological control requirements for sealed sources. Therefore, the Contractor shall adhere to procedures developed to assist the Contractor in the use, custody, control, and application of these sources under the requirements of [CPCC-00175](#).

## **6.5 Nuclear and Criticality Safety**

This work is not nuclear safety or criticality safety related.

## **6.6 Software Products and/or Services Where Software is Used**

Software used in performance of this scope of work shall be controlled in accordance with [CPCC-PRO-IRM-309](#), *Controlled Software Management*.

## **7.0 MEETINGS AND SUBMITTALS**

### **7.1 Meetings**

After the Contract award, the Contractor shall participate in a Project Kickoff Meeting, which may be a conference call, an internet meeting, or a meeting to be held at CPCCo's Site. The time, date, and agenda for the meeting will be provided to the Contractor by CPCCo.

The Contractor shall interface with various CPCCo (and other) organizations through CPCCo's Contract Specialist (or designated BTR for in-scope work), as required, or at points and frequency determined by the Contract Specialist.

The person or persons designated by the Contractor to attend all meetings shall have all required authority to make decisions and commit Contractor to technical decisions made during meetings. The BTR will follow up with an email to the Contractor and the CPCCo Contract Specialist if any changes are made to the scope of work that may warrant a change order.

The Contractor may attend CPCCo Quarterly and/or Yearly Safety/All Hands Meetings as directed by the BTR. Contractor shall ensure all Contractor employees on site, are in attendance.

### **7.2 Submittals**

The Contractor submittals identified herein on the Submittal Register shall be submitted by the Contractor using the CPCCo [A-6004-757](#), *CPCCo Contractor Document Submittal Form* provided by the Contract Specialist. Instructions for completion of the CDSF are included with the form. The quantity, frequency and type of submittal shall agree with the requirements set forth on the Submittal Register (Attachment A). A Submittal Number, entered on the CDSF by the Contractor in accordance with the submittal register, shall be used to identify each submittal. CDSF forms may be copied

for submittals with different submittal dates. When any submission is returned to the Contractor with a request for resubmission (i.e., marked as: “C – Not Approved - Revise & Resubmit”) the Contractor shall resubmit all corrected documents within the time specified on the resubmission notice or if no time is specified therein within five (5) working days from the disposition date. New submittals shall require the Contractor to contact the Contract Specialist if additional Submittal Numbers are required.

The following shall be submitted to the CPCCo Contract Specialist, prior to mobilization, and under the cover sheet of a CDSF (see section 8.1 for Deliverables):

- A. Contractor Organization Chart – Contractor will supply an organization chart for the company and anyone working on the project.
- B. Resumes - Contractor will supply the resumes of each employee that will be working on the Contract.
- C. Training Equivalencies – Contractor will supply a training equivalency document (e.g., course completion information, course description, and name and address of training organization) for all commercially required and provided training.  
*Exceptions:* Equivalencies for Department of Transportation Commercial Driver’s licenses will not be accepted.
- D. Department of Transportation (DOT) Certification - Contractor shall be fully qualified in accordance with Federal law and rules promulgated by the Department of Transportation to transport hazardous and radiological wastes and materials on the Hanford Reservation. Contractor shall provide proof of its certifications by the DOT for such purposes and take all steps required to comply with DOT regulations including the marking of vehicles being driven by Contractor.
- E. Medical and Badging - [HPMC Sub-Contractor New Hire Scheduling Form](#) and [A-6001-782, Security Badge Request Form](#).
- F. Job Safety Analysis (JSA) – Contractor will supply a JSA, in accordance with the requirements of [CPCC-PRO-SH-40078](#), APPENDIX F and format acceptable to CPCCo.
- G. Safety Data Sheets (SDS) - Contractor will supply a SDS for all chemical products that will be used during the work activity for pre-approval by CPCCo Project Safety. These shall be summarized as required, on Form [A-6004-750, Chemical Inventory Worksheet](#), prior to mobilization. This will require a CPCCo SDS number for each chemical to be brought on site. Contact CPCCo Safety for assistance if needed. This shall be coordinated with the BTR and CPCCo Safety in the field and accurately maintained during fieldwork.
- H. Technical Deliverables – Contractor will supply documentation per sections 3.2 and 8.1.

### **7.3 Interfaces**

- A. Designation of BTR

- The BTR is responsible for monitoring and providing technical guidance for this Contract and should be contacted regarding questions or problems of a technical nature. The BTR also is responsible for appropriate surveillance of the Contractors representative while on site. In no event, however, will an understanding or agreement, modification, change order, or any deviation from the terms of this Contract be effective or binding upon CPCCo unless formalized by proper Contract documents executed by the Contract Specialist prior to completion of this Contract. On all matters that pertain to Contract terms, the Contractor shall contact the Contract Specialist specified within this Contract. When in the opinion of the Contractor, the BTR requests or directs efforts outside the existing scope of the Contract; the Contractor shall promptly notify the Contract Specialist in writing. The BTR does not possess any explicit, apparent or implied authority to modify the Contract. No action should be taken until the Contract Specialist makes a determination and/or modifies the Contract.
- B. The Contractor shall immediately notify the BTR (who will contact CPCCo Safety) of any injuries or incidents; to include damage to Contractor-owned property or equipment. If the BTR or Contract Specialist cannot be reached see also Section 7.3.C. The Contractor will follow this up within 24 hours with a written explanation to the Contract Specialist of the occurrence.
  - C. In the event that there is an abnormal or unusual situation associated with this Contract work scope, the Contractor is to immediately contact the BTR. If, after several attempts, the Contractor is unable to contact either the BTR or the Contract Specialist, the Contractor is to contact CPCCo Occurrence Notification Center at (509) 376-2900, which is available 24 hours a day, seven days a week, and provide them with: Contract Number, Contract Specialist's name, BTR's name and a short summary of the abnormal or unusual situation. If after making contact with CPCCo, the Contractor is advised to suspend activities, the Contractor is not to proceed until such direction to proceed has been expressly issued by the Contract Specialist. If there is an emergency situation, the Contractor is to make the appropriate immediate emergency call to 911 or (509) 373-0911 for cell phones and then make the notifications to CPCCo as set forth herein.
  - D. Prior to work in the field, Contractor shall ensure each employee has been cleared by CPCCo and verify all training and medical evaluations are complete in accordance with Section 5.1.

## **8.0 DELIVERABLES, PROJECT CONTROLS, MILESTONES, AND PERFORMANCE SCHEDULE REQUIREMENTS**

### **8.1 Deliverables**

- A. Technical Deliverables (see Attachment A, Item 8)
  - 1. Monthly report describing completed activities listed in Table 1, which shall document the monthly activities of the Contractor and include the completion of

the items (2-8) listed below, that is intended to be the primary monthly record of work on the contract

2. PDF of preliminary plot of logging results for new boreholes, including SGLS and NMLS results
3. Geophysical Logging Results/Reports including an EDD for each Borehole reported
4. PDF of Log Data Reports and Data Analysis on Boreholes
5. Monthly inspection, inventory and maintenance records for the BTR furnished equipment (vehicles), and geophysical logging equipment.
6. Data Packages for Logging in Operable Units (as directed)
7. Calibration Certificates for Sondes (as developed yearly and after repairs)

## **8.2 Project Control Requirements**

For purposes of supporting CPCCo's weekly reporting to DOE and project progress, Contractor may be required to provide an in-process weekly progress report. Support CPCCo on input for the Hanford Site Environmental Report and Hanford Site Groundwater Monitoring Report as requested.

- A. The Contractor shall notify CPCCo's BTR of changes in the planned work schedule.
- B. The Contractor shall observe plant closure days, unless otherwise directed by the Contract Officer.

## **8.3 Performance Schedule**

The period of performance is October 1, 2022 through September 30, 2024.

Option 1: October 1, 2024, and end on September 30, 2025

## **9.0 FORMS**

A-6001-782, *Security Badge Request Form*

[https://cpcco.hanford.gov/files.cfm/Security\\_Badge\\_Request\\_5640-A-6001-782.pdf](https://cpcco.hanford.gov/files.cfm/Security_Badge_Request_5640-A-6001-782.pdf)

A-6004-750, *CPCCo Chemical Inventory Worksheet*

[https://cpcco.hanford.gov/files.cfm/A-6004-750%2C\\_Chemical\\_Inventory\\_Worksheet.docx](https://cpcco.hanford.gov/files.cfm/A-6004-750%2C_Chemical_Inventory_Worksheet.docx)

A-6004-757, *CPCCo Contractor Document Submittal Form (CDSF)*

[https://cpcco.hanford.gov/files.cfm/Contractor\\_Document\\_Submittal\\_6507-A-6004-757.pdf](https://cpcco.hanford.gov/files.cfm/Contractor_Document_Submittal_6507-A-6004-757.pdf)

*HPMC Sub-Contractor New Hire Scheduling Form*

[https://www.hanford.gov/health/files.cfm/AMH\\_Sub-Contractor\\_NewHire\\_Scheduling\\_Form.pdf](https://www.hanford.gov/health/files.cfm/AMH_Sub-Contractor_NewHire_Scheduling_Form.pdf)

## **10.0 REFERENCES**

### **10.1 Procedures**

DOE-0359, *Hanford Site Electrical Safety Program Requirements (HSESP)*

[https://www.hanford.gov/files.cfm/DOE-0359\\_Hanford\\_Site\\_Electrical\\_Safety\\_Program.pdf](https://www.hanford.gov/files.cfm/DOE-0359_Hanford_Site_Electrical_Safety_Program.pdf)

DOE/RL-92-36, *Hanford Hoisting and Rigging Manual*

<http://www.hanford.gov/?page=548>

SP-5, *Special Provisions for On-Site Services*, [https://cpcco.hanford.gov/files.cfm/SP-5\\_Rev1.pdf](https://cpcco.hanford.gov/files.cfm/SP-5_Rev1.pdf)

### **10.2 CPCCo Procedures**

CPCC-PRO-IRM-309, *Controlled Software Management*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/CPCC-PRO-IRM-309>

CPCC-PRO-SH-40078, *Contractor Safety Processes*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-40078>

CPCC-PRO-SH-40481, *Storing, Using and Handling Compressed Gases*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-40481>

SGRP-PRO-OP-52991, *Geophysical Logging Vehicle Operating Inspection*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-52991>

SGRP-PRO-OP-52998, *Gamma 1 and Gamma 4 Logging System Set Up and Power Up*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-52998>

SGRP-PRO-OP-53002, *Gamma 1 and Gamma 4 Logging System Shut Down*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53002>

SGRP-PRO-OP-53004, *Gamma 5 Geophysical Logging System Set Up and Power Up*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53004>

SGRP-PRO-OP-53007, *Gamma 5 Geophysical Logging System Shut Down*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53007>

SGRP-PRO-OP-53008, *Retrieve Stuck Logging Sonde*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53008>

SGRP-PRO-OP-53023, *Perform SGLS Logging*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53023>

SGRP-PRO-OP-53024, *Perform NMLS Logging*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53024>

SGRP-PRO-OP-53034, *Geophysical Logging Borehole Deviation System (Gamma 5)*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53034>

SGRP-PRO-OP-53040, *Logging Systems Data Analysis (NMLS and PNLS)*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53040>

SGRP-PRO-OP-53050, *Perform HRLS Logging*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53050>

SGRP-PRO-OP-53051, *Logging System Data Analysis (HRLS and SGLS)*,

<http://procedures.cpcco.rl.gov/files.cfm/ProcedureLibrary/SGRP-PRO-OP-53051>

### **10.3 Documents**

CPC-00175, *CH2M Hill Plateau Remediation Company Radiological Control Manual*,

<http://cpc.cpcco.rl.gov/rapidweb/RADCON/index2.cfm?FileName=/docs/1/docs/CPC-00175 - Rev 00.pdf>





**STATEMENT OF WORK**  
**Contract No. XXXXX, Release No. XXXXX**  
**TITLE: Hanford Geophysical Logging Services**

**Attachment A – Submittal Register**

<b>SUBMITTAL REGISTER</b>								
<b>Contract Number/Name: Hanford Geophysical Logging Services</b>								<b>Revision: 1</b>
Submittal No.	Type and # of Copies	Technical Submittal	Vendor Information	Description of Submittal	Submittal Date (when required)	Approval Organization	CPCCo Review Time Needed (work days)	Contract Paragraph or Requirement Reference
1	E	No		Contractor Organization Chart	A + 5	BTR	5 days	7.2 A
2	E	No		Resumes	A + 5	BTR	5 days	7.2 B
3	E	No		Training Equivalencies	A + 7	Safety	5 days	7.2 C
4	E	No		DOT Certifications	A + 7	Safety	5 days	7.2 D
5	E	No		HPMC "new hire medical scheduling request form"	A + 7	Safety	5 days	7.2 E
6	E	No		Job Safety Analysis	A + 7	Safety	5 days	7.2 F
7	E	No		SDS and Chemical Inventory if provided by contractor	A + 7	Safety	5 days	7.2 G
8	E	No		Technical Deliverables (as developed or directed)	As Developed	BTR or designee	5 days	7.2 H

For electronic submittals, the number of hard copies can be negotiated with the Contract Specialist and approved by the Project Manager.

1. Typically, a numerical sequence (i.e., 1, 2, 3, ...). However, other numbering systems may also be used.
2. Submittal type, number of copies and format:
  - APW = Approval Required Prior to Work (CPCCo must approve the Contractor's submittal prior to the Contractor being authorized to proceed with any activity/work associated with the submittal).
  - AP = Approval Required (CPCCo must approve the Contractor's submittal, however, work associated with the submittal may proceed prior to CPCCo approval).Format: Describes the type of submittal required (electronic or printed):
  - MFC Microsoft Format Compatible application (Word, Excel, Access, PowerPoint)
  - PDF Adobe Acrobat (Portable Document Format)
3. Technical submittals are Engineering or Quality affecting submittals. The purpose of a Yes in this column is to designate the need for formalized comments, and a formalized comment disposition process by the Contractor. This process can always be used at the option of the BTR. See PRC-PRO-AC-16405, for additional details. Select "YES" for formalized comments, otherwise Select "NO" for the more common and faster review process used by Document Control such as voting buttons, or e-mail type comments not formalized on comment disposition sheets. Examples of Technical Submittals would include Engineering or Fabrication Drawings, or Certificates of Conformance.
4. Vendor Information. Determine if there is any subset of information that needs to be retained as part of the permanent records system after Contract closeout. Typically, project and Contract records are archived at the end of the Contract/project life cycle. Facility design information, that is not captured via HNF drawing or document number at the end of the project is designated as Vendor Information at the end of the project/Contract life cycle if it is needed by the program/facility/functional organization. See also PRC-PRO-EN-440, Vendor Information for additional information. Select "YES" for Vendor Information, otherwise, select "No."
5. Description / Document Title. Describe submittal.
6. Required submittal date or its relationship to project milestones. Examples are July 14, 2009, or Award + 15 days, Contract Completion +30 days.
  - A Date of Award
    - As Developed As soon as the logging is complete, compile the information and submit.
7. Specify Approver Organization. Examples are Construction Manager, Safety, Quality, Radiation Protection, Waste Management.
8. Specify the number of work days required for review of the submittal.
9. Specify the requirement by reference to the SOW or Specifications. Example for Training Records: Ref. SOW 01150-1

**Attachment B – Sunflower Property System**  
**CPCCo Furnished Equipment**  
**Revision 0**

Identifier	Official Name	Manufacturer	Model	Serial Number	Custodian	Site	Building	Room	Notation:
3404990	HOIST	FERRARI	535A2	571	ARRON POPE 6292465	600	622F	CALMOD	
3404991	HOIST	FERRARI	535A2	572	ARRON POPE 6292465	600	622F	CALMOD	
7404987	GENERATOR	HARRISON	15.0MPC16D	44516	ARRON POPE 6292465	600	622F	CALMOD	68B03573
7404988	GENERATOR	HARRISON	15.0MPC16D	34419	ARRON POPE 6292465	600	622F	CALMOD	68B03574
WB82058	TOOL ASSEMBLY	GEARHART	XY	XY28A47	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	
WB82059	PROBE	MINERAL LOGGING	069241001	48	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	68B03573
WC38782	IODIDE PROBE	ALPHA SPECTRA	NAI		ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	68B03574
WC38783	REPLACEMENT TOOL	E G AND G ORTEC	GEN18180P	32TP10832A	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	
WC48919	MOISTURE CALIBRATION MODEL	BAMCO TECHNOLOGIES	NONE		ARRON POPE 6292465	600	622F	CALMOD	
WC48920	MOISTURE CALIBRATION MODEL	BAMCO TECHNOLOGIES	NONE		ARRON POPE 6292465	600	622F	CALMOD	
WC48921	MOISTURE CALIBRATION MODEL	BAMCO TECHNOLOGIES	NONE		ARRON POPE 6292465	600	622F	CALMOD	
WC48922	MOISTURE CALIBRATION MODEL	BAMCO TECHNOLOGIES	NONE		ARRON POPE 6292465	600	622F	CALMOD	
WC48923	MOISTURE CALIBRATION MODEL	BAMCO TECHNOLOGIES	NONE		ARRON POPE 6292465	600	622F	CALMOD	68B03572
WC48924	MOISTURE CALIBRATION MODEL	BAMCO TECHNOLOGIES	NONE		600	600	622F	CALMOD	
WC48925	MOISTURE CALIBRATION MODEL	BAMCO TECHNOLOGIES	NONE		ARRON POPE 6292465	600	622F	CALMOD	
WC50957	OSCILLOSCOPE	TEKTRONIX	2467B	B052990	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	
WC54895	DETECTOR	E G AND G	GEM70200P+S	34TP40587A	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	

Identifier	Official Name	Manufacturer	Model	Serial Number	Custodian	Site	Building	Room	Notation:
WC54901	WINCH	MOUNT SOPRIS	WINCH	1502	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE		
WC54902	WINCH	MOUNT SOPRIS	WINCH	1503	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE		68B03573
WC56358	LOGGING SYSTEM	GREENSPAN	RLPS2	GAMA 4	ARRON POPE 6292465	600	622F	CALMOD	
WC66101	SHEAR WAVE SOURCE	HUMPHREY	CB4103021	4660	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	
WC91038	CONTROLLER	TOSHIBA	PSM60U	Z5202927K	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	meisner	
WC91045	BOREHOLE PROBE	BFECGJ	BOREHOLE PROBE	NONE	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	
WC91046	GERMANIUM DETECTOR	E G AND G NUCLEAR INSTRUMENT	GMX20190P	34TN11004A	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	
WC91047	ASSEMBLY DETECTOR	E G AND G NUCLEAR INSTRUMENT	GEM35200	36TP21095A	ARRON POPE 6292465	RCHN	2439ROBERTSON DRIVE	SHOP	
WF15079	LOGGING SYSTEM	GREENSPAN	LOGGING SYSTEM		ARRON POPE 6292465	600	622F	CALMOD	68B03574

**Attachment C – Electronic Data Deliverable Specification**

## ELECTRONIC DATA DELIVERABLE (EDD) SPECIFICATION

### A. ACRONYM LIST

ACRONYM	DEFINITION
CON	Constituent
EDD	Electronic Data Deliverable
EIS	Environmental Information Systems
GDM	Geophysical Logging Data Manager
GPL	Geophysical Logging
HEIS	Hanford Environmental Information System
HEIS GPL	Hanford Environmental Information System Geophysical Logging
ID	Identifier
REQ	Requirement
SQL	Structured Query Language
STD	Standard

### B. EDD DEFINITION

#### 1. FILE REQUIREMENTS

The EDD file must be in a Microsoft Excel format (.xls). Excel 2007 files (.xlsx) must be saved as Excel 97-2003 files (.xls).

In the properties of the .xls file (File | Properties), at a minimum, the email address of the person preparing the file must be included in the comment field. If there is a problem with the file and the email address in the worksheets cannot be accessed, there would be no way to contact the preparer about the issue without this information.

The name of the file will not affect the loading process. Each preparer can name the files with the naming convention that best fits their process.

There is no limit to the number of runs that can be included in the file. The only limitation is the number of rows allowed by Excel (roughly 65,500). This would never be an issue on the GPL\_RUN worksheet but may be an issue on the GPL\_RESULTS worksheet if there are a large number of results for each run and a large number of runs.

The file must contain a minimum of two worksheets (tabs). Worksheet 1 is required and must be named “GPL\_RUN”. Worksheet 2 is required and must be named “GPL\_RESULT”. Worksheet 3 is optional and if included, must be named “GPL\_REFS”. Any additional worksheets will be ignored. Any formatting on the worksheets (colors, fonts, text direction, etc.) will be ignored.

**a. GPL\_RUN WORKSHEET**

Column headers should be included in row 1.

All column headers should be included whether there are data or not.

The columns in the table below must be included and must be in the following order:

<b>COLUMN</b>	<b>COLUMN NAME</b>	<b>DATA TYPE</b>	<b>LENGTH</b>	<b>REQUIRED</b>
A	RUN_NUM	TEXT	10	Y
B	SAMP_SITE_ID	TEXT	15	Y
C	SITE_DESC	TEXT	100	N
D	LOG_DATE	DATE		Y
E	LOG_ORG_CODE	TEXT	8	Y
F	LOG_TYPE_CODE	TEXT	8	Y
G	QUALITY_LEVEL	NUMBER		Y
H	DEPTH_START	NUMBER		Y
I	DEPTH_END	NUMBER		Y
J	DEPTH_UNITS	TEXT	10	Y
K	PREP_BY	TEXT	30	Y
L	PREP_EMAIL	TEXT	75	Y
M	PREP_DATE	DATE		Y
N	LOG_ENGR	TEXT	30	N
O	LOG_PROCEDURE	TEXT	50	N



COLUMN	COLUMN NAME	DATA TYPE	LENGTH	REQUIRED
P	ANALYST	TEXT	40	N
Q	DEPTH_REF_CODE	TEXT	10	N
R	DEPTH_INCR	NUMBER		N
S	WELL_STICKUP	NUMBER		N
T	WELL_STICKUP_UNITS	TEXT	10	N
U	DETECTOR	TEXT	50	N
V	MODE_CODE	TEXT	10	N
W	SHIELD	TEXT	30	N
X	REPEAT_RUN	TEXT	1	Y
Y	COUNT_TIME_CODE	TEXT	6	N
Z	COUNT_TIME_SECS	NUMBER		N
AA	PREP_COMMENT	TEXT	2000	N
BB	RUN_COMMENT	TEXT	2000	N

**b. GPL\_RESULT WORKSHEET**

Column headers should be included in row 1.

Columns A – J should be included whether there are data or not.

Columns A – J must follow this order.

The columns in the table below must be included and must be in the following order:

COLUMN	COLUMN NAME	DATA TYPE	LENGTH	REQUIRED
A	RUN_NUM	TEXT	10	Y
B	DATA_TYPE	TEXT	6	N
C	CON_ID	TEXT	15	Y

<b>COLUMN</b>	<b>COLUMN NAME</b>	<b>DATA TYPE</b>	<b>LENGTH</b>	<b>REQUIRED</b>
D	DEPTH	NUMBER		Y
E	VALUE_RPTD	NUMBER		N
F	ANAL_UNITS_RPTD	TEXT	10	N
G	COUNTING_ERROR	NUMBER		N
H	MIN_DETECTABLE_ACTIVITY	NUMBER		N
I	GPL_QUALIFIER	TEXT	6	N
J	RESULT_COMMENT	TEXT	2000	N

Starting in column “K”, any parameters are to be added with the following rules:

If a parameter is being used that already exists in the HEIS\_GPL parameter table, the column headers (row 1) **MUST** match the parameter codes. If they do not match they must be in the following order: an existing parameter (misspelled), the parameters will need to be reviewed.

If a parameter requires units, the units **MUST** follow the parameter column with the same name including “\_UNITS.” For example, if CAS\_THICK is a parameter column, the next column should be CAS\_THICK\_UNITS. If a parameter does not need units like FILENAME, for instance, there would simply be no “\_UNITS” column following it.

If you need to add a parameter(s) that is not in the HEIS\_GPL list of parameters, please add them to the end. As part of the loading process, the new parameter(s) will be reviewed and added.

See the HEIS\_GPL webpage, “HEIS\_GPL Parameters” document for a current list of parameters.

**c. GPL\_REFS WORKSHEET**

Column headers should be included in row 1.

The columns in the table below must be included and must be in the following order:

<b>COLUMN</b>	<b>COLUMN NAME</b>	<b>DATA TYPE</b>	<b>LENGTH</b>	<b>REQUIRED</b>
A	RUN_NUM	TEXT	10	Y

<b>COLUMN</b>	<b>COLUMN NAME</b>	<b>DATA TYPE</b>	<b>LENGTH</b>	<b>REQUIRED</b>
B	REF_TYPE_CODE	TEXT	50	Y
C	REF_NUM	TEXT	50	N
D	REF_SOURCE	TEXT	100	N
E	REF_FILENAME	TEXT	100	N
F	REF_LOCATION	TEXT	150	N
G	REF_DESC	TEXT	250	N
H	REF_DATE	DATE		N

**END OF PART I – STATEMENT OF WORK**