STATEMENT OF WORK (SOW)

Drill and Install New Potable Water Well

Sherman Homes Vacation Cabins

Sherman Homes Spur Rd
Kettle Falls, WA 99141
Lake Roosevelt National Recreation Area (LARO)

PART 1 – GENERAL INFORMATION

1.1 Project Title

Drilling and Installation of New Potable Water Well(s) – Sherman Homes Vacation Cabins

1.2 Project Location

Sherman Homes Vacation Cabins
Sherman Homes Spur Rd
Kettle Falls, WA 99141

1.3 Background

In the early 1950's the NPS established a goal of encouraging recreational use of Lake Roosevelt National Recreation Area by authorizing leases for summer vacation cabin sites. Today eight private cabins exist at Sherman Homes with no access to potable well water.

Upon successful installation and acceptance of the new well system, potable well water will be available for these cabins in the future.

PART 2 – GENERAL

ITEM 1 – DESCRIPTION OF WORK

2.1 Objective

The Contractor shall furnish all labor, supervision, materials, tools, equipment, transportation, permits, testing, utilities, environmental protection measures, and incidentals necessary to complete the drilling, construction, testing, disinfection, electrical connection, startup, and commissioning of a new potable water well system identified as Well #1 within the project area.

The Contractor shall also provide pricing for one Optional Item for drilling and construction of a second potable water well identified as Well #2. Award of Well #2 shall be contingent upon the performance results of Well #1 and the availability of Government funding at the time of award. All technical requirements and specifications applicable to Well #1 shall apply equally to Well #2, if the Option is exercised by the Government.

The work includes drilling and constructing a potable water well estimated between approximately 200 and 400 feet in depth, installation of a submersible pump system, electrical service installation, well development, potable water testing, disinfection, startup, restoration, and final commissioning.

All work shall comply with:

- Northeast Tri County Health District regulations
- Federal Safe Drinking Water Act requirements
- National Electrical Code (NEC)
- OSHA 29 CFR 1926
- EPA potable water standards
- State and local environmental regulations
- National Park Service operational and environmental requirements

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2.2 Work Covered by Contract Documents

The Contractor shall provide all labor, materials, supervision, equipment, permits, transportation, testing, and incidentals necessary to complete the following:

Base – Well #1

- Mobilization and demobilization of drilling equipment and support vehicles
- Site access coordination and temporary site protection
- Utility locates and excavation coordination
- Drilling of one potable water well
- Installation of well casing and sanitary seal
- Pressure grouting of annular space
- Well development and cleaning
- Installation of sanitary well cap
- Installation of pitless adapter

- Furnishing and installation of one submersible well pump
- Electrical installation from existing source to wellhead
- Startup and operational testing
- Potable water testing and laboratory analysis
- Site restoration and cleanup
- Preparation of as-built documentation

Option #1 – Well #2

Provide all labor, materials, supervision, testing, and incidental work necessary to complete a second potable water well installation at the location identified on project drawings as Well #2.

The Government reserves the right to award or decline the Option Item based upon project budget and successful completion and performance of Well #1.

2.3 Existing Conditions

The Contractor shall verify all site conditions prior to beginning work. Existing subsurface conditions, groundwater elevations, and geological formations may vary from anticipated conditions.

Submission of a proposal constitutes acknowledgment that the Contractor has visited the site or otherwise become familiar with all existing conditions affecting the work.

2.4 Period of Performance

All work shall be completed within 60 calendar days from issuance of Notice to Proceed.

The Period of Performance includes:

- Mobilization
- Permitting
- Drilling
- Well construction
- Electrical installation
- Pump installation
- Testing
- Disinfection
- Startup

- Site restoration
- Final documentation

ITEM 3 – PERMITS AND REGULATORY REQUIREMENTS

3.1 Permits

The Contractor shall obtain all permits, licenses, and inspections necessary to perform the work.

This includes, but is not limited to:

- Well drilling permits
- Environmental permits
- Electrical permits
- Utility clearances
- Inspection approvals

Permit costs shall be included in the overall cost of the Contractor's proposal.

3.2 Regulatory Compliance

All work shall comply with:

- Northeast Tri County Health District well regulations
- OSHA 29 CFR 1926
- National Electrical Code (NFPA 70)
- EPA potable water requirements
- State groundwater protection regulations
- Federal environmental regulations
- National Park Service resource protection requirements

ITEM 4 – CONTRACTOR USE OF PREMISES

4.1 Site Protection

The Contractor shall protect:

- Existing vegetation
- Utilities
- Adjacent structures
- Roads and parking areas
- Cultural and natural resources
- Existing drainage systems

Disturbance shall be limited to approved work areas only.

4.2 Access and Staging

The Contractor shall coordinate staging, equipment access, and drilling operations with the NPS Project Manager.

Temporary access routes shall be restored upon completion.

4.3 Daily Cleanup

The Contractor shall maintain a clean worksite at all times and remove debris daily.

No waste materials shall be buried onsite.

ITEM 5 – WELL DRILLING AND CONSTRUCTION

5.1 Mobilization

The Contractor shall mobilize drilling rigs, compressors, support equipment, generators, water trucks, and all necessary support personnel.

5.2 Drilling Operations

The Contractor shall:

1. Verify drilling location with the NPS Project Manager prior to drilling.
2. Drill a potable water well to an estimated depth between 200 and 400 feet.
3. Final well depth shall be determined based on:
    - Water yield
    - Geologic conditions
    - Water quality
    - Direction from the NPS Project Manager
4. Provide minimum 8-inch borehole diameter unless otherwise approved.
5. Maintain borehole stability throughout drilling operations.
6. Prevent contamination of groundwater during drilling.

5.3 Well Casing Installation

The Contractor shall:

- Install casing in accordance with Northeast Tri County Health District standards.
- Install casing plumb and aligned.
- Use approved casing materials suitable for potable water use.
- Seal casing to prevent surface water infiltration.

5.4 Grouting

The Contractor shall:

- Pressure grout the annular space from bottom to surface.
- Utilize approved bentonite or cementitious grout materials.
- Prevent voids within grout column.
- Provide grout certification documentation.

5.5 Well Development

The Contractor shall develop the well utilizing approved surging, pumping, airlifting, or jetting methods until:

- Water is visually clear
- Sand content is minimized
- Stabilized yield is achieved

The Contractor shall remove drilling debris and sediment from the well.

5.6 Sanitary Completion

The Contractor shall install:

- Sanitary well cap
- Lead-free pitless adapter
- Vermin-proof seals
- Surface protection measures

ITEM 6 – PUMP INSTALLATION

6.1 Submersible Pump

The Contractor shall furnish and install one:

- 0.5 HP submersible pump
- Stainless steel or approved steel-alloy construction
- Potable water rated components

6.2 Pump Appurtenances

The Contractor shall provide:

- Drop pipe
- Electrical cable
- Check valve

- Torque arrestor
- Safety rope
- Pitless adapter connection
- Pump controls

6.3 Pump Setting

The Contractor shall set the pump at the proper operational depth based on:

- Static water level
- Pumping water level
- Well yield
- Manufacturer requirements

6.4 Startup and Verification

The Contractor shall:

- Verify pump operation
- Verify amperage draw
- Verify pressure and flow
- Test all controls
- Confirm leak-free operation

ITEM 7 – ELECTRICAL INSTALLATION

7.1 General Requirements

Electrical work shall be performed by a licensed electrician.

All work shall comply with NEC requirements.

7.2 Electrical Scope

The Contractor shall:

- Install underground conduit from electrical source to wellhead
    - Distance is approximately 200 linear feet
- Install conductors properly sized for pump load
- Install appropriately sized breaker
- Install NEMA-rated disconnect at wellhead
- Provide grounding and bonding
- Protect conductors from physical damage

7.3 Electrical Startup

The Contractor shall:

- Energize system
- Verify voltage
- Verify phase and rotation if applicable
- Test disconnect operation
- Confirm proper pump startup

ITEM 8 – TESTING AND DISINFECTION

8.1 Well Disinfection

The Contractor shall disinfect the completed well system in accordance with AWWA standards and applicable health district requirements.

8.2 Yield and Drawdown Testing

The Contractor shall perform:

- Pumping tests
- Drawdown monitoring

- Recovery monitoring
- Yield verification

Testing duration shall comply with health district requirements.

8.3 Potable Water Testing

The Contractor shall provide certified laboratory testing including:

- Total coliform
- E. coli
- Nitrates/nitrites
- Required inorganic constituents
- Additional parameters required by regulatory agencies

Certified test results shall be submitted to the Government.

8.4 Failed Testing

If initial testing fails:

- Contractor shall re-disinfect the well
- Contractor shall repeat testing
- Additional corrective actions shall be performed at no additional cost to the Government

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ITEM 9 – SUBMITTALS

The Contractor shall submit:

- Driller’s license
- Insurance certificates
- Site-specific safety plan
- Drilling procedures
- Well completion report
- Grout certifications
- Pump specifications

- Electrical inspection approvals
- Certified potable water laboratory results
- As-built drawings
- Operation and Maintenance manuals
- Warranty documentation

ITEM 10 – SAFETY REQUIREMENTS

The Contractor shall:

- Comply with OSHA 29 CFR 1926
- Maintain a site-specific safety plan
- Utilize proper excavation and drilling safety procedures
- Maintain safe traffic and pedestrian controls
- Secure drilling areas daily
- Prevent fuel and fluid spills
- Protect park resources and adjacent facilities

All employees shall wear appropriate PPE including:

- Hard hats
- Safety glasses
- High visibility clothing
- Gloves
- Steel-toe boots
- Hearing protection

ITEM 11 – SITE RESTORATION

The Contractor shall restore all disturbed areas including:

- Grading disturbed soils
- Replacing displaced aggregate
- Restoring drainage patterns
- Removing drilling fluids and debris
- Removing temporary access materials
- Seeding disturbed areas if directed

The site shall be returned to preconstruction condition or better.

ITEM 12 – ACCEPTANCE

Final acceptance shall occur upon:

- Successful potable water laboratory testing
- Verification of operational well system
- Completion of startup testing
- Submission of all required documentation
- Approval of as-built drawings
- Completion of site restoration
- Final inspection approval by the Government

PART 3 – EXECUTION

Phase 1 – Mobilization and Site Preparation

- Coordinate access and staging with NPS
- Verify utility locations
- Install erosion and sediment controls
- Protect adjacent resources
- Mobilize drilling equipment

Phase 2 – Drilling Operations

- Drill borehole to required depth
- Monitor geological formations
- Protect groundwater from contamination
- Maintain drilling logs
- Stabilize borehole throughout operations

Phase 3 – Well Construction

- Install casing
- Pressure grout annular space
- Install sanitary completion components
- Develop well until clear and sand-free

Phase 4 – Pump and Electrical Installation

- Install pump assembly
- Install conduit and wiring
- Install disconnect and controls
- Perform electrical testing

Phase 5 – Testing and Disinfection

- Disinfect system
- Conduct yield testing
- Conduct drawdown testing
- Obtain certified potable laboratory testing

Phase 6 – Startup and Restoration

- Verify system operation
- Restore disturbed areas
- Remove debris and temporary facilities
- Submit closeout documentation
- Participate in final inspection