creating solutions for today's environment

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Geoprobe® & Mobile Lab Services

JBR Environmental Consultants, Inc. (JBR), Montana's first direct-push contractor, has performed thousands of direct-push borings using our original lab-equipped rig, a portable unit, and a more powerful Geoprobe®540U machine. On a cost-per-foot basis, direct-push borings are typically half the price of other technologies. The three units provide flexible, cost-effective environmental sampling and can assist you in identifying and solving complex environmental issues. Current projects have given us the opportunity to advance borings to 55 feet below ground surface. We have performed projects in Montana, Wyoming, North Dakota, South Dakota, Idaho, Utah, Nevada, and Oregon.

Sampling Services

JBR has performed many subsurface investigations using direct-push equipment. We have used it to complete both in-house projects and work for other consultants as a subcontractor. We can offer Macro-Core®, dual-tube, and large-bore sampling and most other special requests such as water sampling and small-diameter monitoring well installation.

Mobile Lab Services

JBR's Geoprobe® is a four-wheel drive van that contains a hydraulic, direct-push soil probing unit and a fully contained, climate-controlled, on-board lab. The lab consists of a gas chromatograph (GC) with three detectors (PID, FID, and ECD), a digital integrator, an on-board computer, a printer, and associated laboratory equipment. The system can identify compounds including solvents, pesticides, and petroleum products and other organic compounds. The lab can be used during the exploratory phase and during the cleanup phase of projects. The unit can also provide analyses for soil, water, or gas/vapor samples.

In Situ Services

JBR is a highly experienced contractor with in situ remedial injections on a wide variety of remedial sites. JBR can put the whole team together and provide turn key solutions including personnel, pumps, tanks, and piping systems along with the Geoprobe® direct-push machines and tooling. This technology has been used on sites contaminated with pesticides, solvents, and petroleum products. We have injected chemicals including sodium permanganate, emulsified oil, HRC®, ORC®, and RegenOX®.

Geoprobe® Capabilities

- Boring platforms including a portable wheeled unit, a 1-ton, 4-wheel drive Dodge truck, and a 1-ton, 4-wheel drive Ford van.
- Up to 18,000 lbs. of down force and 25,000 lbs. of retraction force for quick boring.
- Macro-core, discreet, and dual tube soil sampling methods.
- Low profile (108" with the mast extended).
- Low mobilization costs.
- Minimal waste core material to dispose.
- Temporary piezometers or permanent monitoring wells.
- Supporting field lab gas chromatograph work or for larger jobs requiring a three unit fleet.
- Licensed State of Montana small-diameter monitoring well constructor.

JBR Corporate Headquarters
801.943.4144 - Salt Lake City, UT

Tempe, AZ (AEC) 480.829.0457
Denver, CO 303.968.6774
Boise, ID 208.853.0883

Butte, MT 406.723.7980
Elko, NV 775.738.8766
Reno, NV 775.747.5777

Medford, OR 541.770.6977
St. George, UT 435.652.8301
Seattle, WA 425.977.4994

Project Experience

Delineation of a Fuel Oil Spill from a Tank Overfill, WY

An operational malfunction at a fuel oil storage system resulted in a release of number two heating oil at a lodging facility in Yellowstone National Park. An estimated 800 gallons of fuel oil were released onto porous surface soils and absorbed into the subsurface. JBR personnel provided Geoprobe® and on-site analytical services to identify the vertical and horizontal extent of contamination from the release. Soil samples at multiple depths and various distances from the spill origin were collected using Geoprobe® direct-push technology. The samples were analyzed in the on–board laboratory, using a gas chromatograph with a flame ionization detector. After the three-dimensional shape of the contaminant plume was defined, confirmation samples were submitted to a commercial laboratory. The combined data were later used by JBR personnel to design, install, and operate a remedial system and provide in situ remediation of the spill, as existing infrastructure had prevented excavation of the area.

Delineation of Hydrocarbon Contamination at an Auto Dealership, MT

A property transfer resulted in the need for a hydrocarbon contamination (Phase II) investigation at a former auto dealership in Bozeman, Montana. JBR provided Geoprobe® soil-boring services to collect soil samples for commercial lab analyses at indoor and outdoor locations at this site. Soil samples at multiple depths and locations were collected using Geoprobe® direct-push technology. Soil samples were submitted to the client for forwarding to a commercial laboratory for conformational analysis to satisfy the due diligence requirements of the property transaction.

Abandonment of Monitoring Wells Via Pressure Grouting, WY

Abandonment of three groundwater monitoring wells at a remote disturbed soil storage location in Yellowstone National Park was required prior to closure of the storage site. Wyoming regulations required grouting of the wells from the bottom up and documentation of abandoned well parameters. JBR provided Geoprobe® services to abandon the wells by application of bentonite grout using a high-pressure Geoprobe® grout pump in combination with a Geoprobe® direct-push rig. Water depths, grout volumes, well depths, and locations were logged and reported according to Wyoming regulations. The wellheads were removed and marked with permanent flush concrete monuments in advance of final storage site closure.

Mobile Lab Capabilities

Advantages of JBR's mobile lab capabilities:

- Allows immediate contaminant plume mapping can be performed in the field.
- Makes plume delineation possible in the first phase of the investigation.
- Provides on-site analysis and results.
- Increases speed of site characterization.
- Offers multiple sampling alternatives - groundwater, soil, or soil gas.
- Minimizes need for permanent sampling points.
- Minimizes laboratory analytical costs.
- Provides a flexible range of sample intervals.
- Minimizes disposal issues.
- Minimizes intrusion to the site.
- Reduces requirements for RUSH analytical.

In Situ Capabilities

Advantages of JBR's in situ capabilities:

- JBR has two injection pumps. The Geoprobe DP800 is designed to pump chemicals or semi-abrasive materials in high volumes where low volume/high pressure pumps are not well suited. At 8 gpm, this pump can inject most chemicals, including potassium and sodium permanganate. The pump fits the need for injection of acids, permanganate products, HRC, and other oxidizers. It is ideal for high porosity soils.
- The GS1000 Grout Pump is designed to pump material at low volume/high pressure. It is ideal for injecting ORC and HRC and sealing boreholes with standard grout mixes. With pressure producing capabilities of up to 1000 psi, it has the ability to inject in low porosity soils.
- JBR has tooling to provide "bottom up" or "top down" injections. We also have a 2"-4" bladder packer for injection down an existing well.