Statement of Qualifications: Directed Technologies Drilling, Inc.















irected Technologies Drilling, Inc. (DTD) is the nation's most experienced provider of near-surface horizontal systems for environmental remediation and water resource development. DTD specializes in environmental applications of guided boring technology, including the installation of remediation wells and venting systems, groundwater resource development, and subsurface sampling. DTD is well known for successfully completing complicated river crossings, infiltration wells, and pipeline installations.

DTD is managed and staffed by environmental professionals, including registered professional geologists, engineers, and construction managers. Moreover, we support and invest in continual innovation to increase the sustainability of environmental and water resource development projects.

CORPORATE PROFILE

Veteran Owned Small Business

Office locations:

- Bremerton, Washington
- Bellefonte, Pennsylvania
- Mineral Wells, Texas

NAICS Codes: 213111, 237110, 237120, 237990,

541620, 562910 CAGE Code: 56P12

DUNS Number: 04-244-8022 Website: www.horizontaldrill.com E-Mail: info@horizontaldrill.com

Contacts:

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James Doesburg, PG -- Vice-President 360-674-2180 jim@horizontaldrill.com

uses horizontal and directional drilling technology to install environmental remediation wells, water resources wells, and associated infrastructure (conveyance lines, control systems, etc.) For larger non-environmental projects, we employ our midi-class HDD equipment to complete difficult stream or river crossings, and similar pipeline or utilities conduit

installation. Our equipment inventory is maintained in a state of readiness, with regular maintenance, cleaning, and painting. Our standard is to maintain a high-quality image on your project site with clean equipment and a professional crew.

Environmental Applications

Soil Vapor Extraction	Soil Venting
Chemical Injection	Dewatering
Ozone Injection	Oxygenation
Treated Water Infiltration	Dual Phase Extraction
Bioaugmentation	Air Sparging
Soil Sampling	

Water Resources

Desalinization Wells	Potable Water Wells
Hydraulic Barrier Wells	Salt Water Intrusion Wells
Shallow Radial Wells	Radial Well Systems

Infrastructure

Pipelines	Railroad Crossings
Stream Crossings	Shore Approaches

Drilling Equipment



DTD owns and operates nine drill rigs manufactured by Vermeer, CMS, and American Augers. These rigs range in size from small rigs for residential or confined space operations, to large rigs for extended and difficult well installations, including specialized rigs for directional drilling in hard rock. With our equipment inventory, we have the appropriate drill rig to install remediation systems ranging from a few tens of feet of small diameter PVC pipe, to systems 2000 feet in length with large diameter steel casing. DTD's drilling equipment inventory includes:

Drill Rig	Thrust/ Pullback	Torque
Vermeer 7x11	7,000 lbs.	1,100 ftlbs.
Vermeer 10x15	10,000 lbs.	1,500 ftlbs.
Vermeer 24x40 (2)	24,000 lbs.	4,000 ftlbs.
Vermeer 36x50DR	36,000 lbs.	5,000 ftlbs.
CMS 6015	60,000 lbs.	15,000 ftlbs.
CMS 9030	100,000 lbs.	30,000 ftlbs.
American Augers DD10	100,000 lbs.	14,000 ftlbs.
American Augers D210	210,000 lbs.	25,000 ftlbs.

Support Equipment

To support our drill rigs, DTD owns mud mixing and recycling systems, as well as pumps, hoses and piping, and ancillary support equipment. We own self-contained trailers for equipment and tool transport. These trailers improve site security and prevent equipment theft and vandalism, as well as providing a discreet appear-



ance at sensitive environmental remediation sites. DTD also owns and operates semi– and flatbed trucks for mobilization and project service.

Drilling Fluid Systems

Mud System	Capacity (gallons)	System Type
DTD 300 (2)	300	Mixer
DTD 750	750	Mixer
Vermeer ST 750 (2)	750	Mixer
Vermeer MX240	750	Mixer
Basic 200	1,200	Recycler: 160 gpm
Mudtech MCT-160	2,000	Recycler: 160 gpm cleaning
Mudtech MCT-800	3,600	Recycler: 800 gpm cleaning
American Augers MP400	5,000	Recycler: 400 gpm cleaning

DTD's drilling fluid systems are matched to the equipment and the project requirements. From small, single pass mixing units to large recyclers, we can select the proper system to accomplish the project objectives while minimizing waste and drilling fluid costs.

Drilling Tools

DTD works closely with manufacturers and custom machinists to fabricate specialized tools for installing remediation systems. One of DTD's significant contributions to the field is a set of tooling and a method (patent pending) that enables us to install single-ended, or "blind," wells through the drill string, but detaching and abandoning the drill bit downhole. This method provides a high level of assurance that the well screen and casing can be installed even in difficult, collapsing bore conditions.

Some additional examples of custom tools designed and fabricated to our specifications include custom locating sondes, pilot drills for hard coral formations and soft sand, borehole reamers, forward reaming assemblies, and pipe-pulling assemblies.

DTD has perfected soil sampling through directional bores. To advance this technology, we have developed new sampler designs

to facilitate the collection of undisturbed samples for chemical analysis and geotechnical testing.

In addition to these tools, DTD engineers and geologists have also invented and patented specialized well casing and well construction methods, adapted to specific horizontal well applications. The patented EnviroFlex well casing is one such product, comprising a well screen with an integrated filter material to prevent silt or sand infiltration into a well in fine-grained formations. DTD holds the patent to this product and is the sole provider of the material. We have also developed a patent-pending method for the construction of water wells with radial collector systems.

Tracking and Steering Systems

The drill head tracking and steering systems used by DTD are designed and built by several manufacturers, and have been selected on the basis of their applicability to our typical drilling scenarios and conditions. Tracking and steering of the drill head are

related functions based on detecting and interpreting a signal transmitted from the drill head during installation of the pilot hole.

DTD uses navigation systems that can operate at depths up to approximately 80



feet, depending on site conditions. We have walkover and remote systems available, and can typically maintain an accuracy of approximately two inches down to a depth of approximately 12 feet. Below 12 feet, we often maintain an accuracy of two percent.

For deeper bores, we frequently work with industry leaders like Sharewell and SlimDril, who provide navigation and steering services using external coil systems and gyroscopic steering tools. These systems provide highly-precise, real-time navigation and steering capabilities, with the ability to detect minute steering deviations and make corrections on-the-fly.

HEALTH AND SAFETY

DTD operates under a health and safety program that has been reviewed by federal and state agencies. DTD incorporates the special health and safety requirements of each of our clients as a normal part of our business. We work with our clients to ensure that all field operations are consistent with client expectations. Our Experience Modification Rating (EMR) is currently 0.71.

All field staff members are fully trained in accordance with CFR 1910.120 (e), and are subject to applicable medical surveillance requirements. Personal protective equipment is provided to meet expected site conditions and field staff is fully trained in its use. Daily safety meetings are held to ensure that health and safety measures are adhered to and to provide a mechanism for communicating and discussing potential safety issues. All field project managers have current first aid and blood borne pathogen training.

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