

Exploration Services

*Your First Choice for Energy,
Industrial & Environmental Management*





Comprehensive Exploration Services

At Clean Harbors, we've built a reputation for providing the most comprehensive project management with expertise to lay out, cut, and survey source and receiver lines, and perform seismic drilling. Our techniques maximize efficiencies and minimize environmental impact. From planning to equipment utilization, our experienced professionals deliver quality service—safely, on time, and on budget.

Our success is based solely on the success of our customers. By delivering a wide range of exploration services as well as complete project management, Clean Harbors empowers the oil and gas industry to concentrate on what makes them profitable and efficient.

We understand your challenges and changing demands. Therefore, we're able to offer customized services tailored for the way you operate and conduct business. From more specific needs like land and aerial surveying, line clearing, and drilling, to managing large scale projects, our goal is to eliminate your liability, reduce costs, and help you maintain your competitive edge.



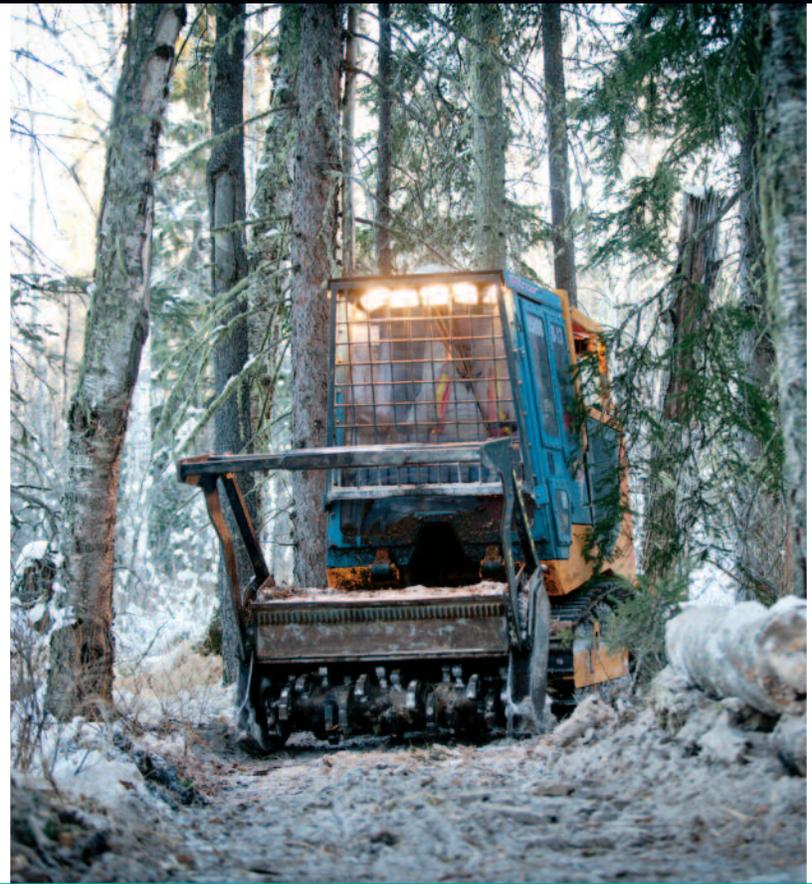
First Things First: Your Health and Safety

At Clean Harbors, we understand that hiring a contractor to work on your project can mean liability exposure, a risk you simply cannot afford to take. SafetyFirst!, our company's comprehensive and industry-leading health and safety program, is employee-driven with a firm management commitment to meet the oil and gas industry's safety statistic requirements for service providers.

Clean Harbors' programs are continually monitored by an internal team of safety professionals and are updated routinely to maintain approved status by ISNetworld, ComplyWorks, and other customer utilized safety databases for contractor approval. That's why our training protocols and health and safety procedures are unsurpassed in the industry. Our training programs and our overall approach to the health and welfare of our employees—as well as our customers' employees—have been developed to first and foremost keep our employees and those around us safe.

From our own operations, to our people in the field, to our customer sites, Clean Harbors adheres to all regulations and plays an active role in keeping up with changing compliance standards to ensure we put safety first.

- Always in compliance with latest government regulations and industry standards
- Comprehensive training programs put employee and customer health and safety first
- Radio and GPS tracking for travel management, 24-hour on-site standby medics, and daily check-in/check-out procedures
- Full-time safety representative connected to every job



Services at a Glance

Surveying

Clean Harbors' methods of line layout and surveying in forested areas take advantage of GPS for positioning on all aspects of a project. Using GPS technology, we preprogram positional data, and with the use of differential GPS techniques, we lay out a seismic program as intended by the seismic program designer. Clean Harbors has over 65 Leica GPS backpack units that have a high degree of accuracy to locate the exact ground position required.

- Permitting
- Hazard assessment
- Production survey
- Line locating
- Pipeline locating
- GPS tracking

Line Clearing

Clean Harbors provides mulcher and hand cut line clearing techniques to cut source and receiver lines or to maintain right-of-way for roads, utilities, pipelines, or other industry needs. With GPS-guided equipment, our constructed lines follow the pre-plot position provided by our client to within a 25-meter corridor, with no continuous line of sight produced. With this methodology, all the requirements of low-impact seismic cutting are adhered to.

Our techniques promote safety, maximize efficiencies, expedite subsequent geophysical activities, and minimize environmental impact.

Our fleet of over 95 mulchers has a variety of cutting widths and ranges from 83 horsepower to 850 horsepower. Clean Harbors' experienced personnel will match equipment to the needs of the specific job.

All mulchers have cab enclosures for operator safety and are track mounted for low ground pressure

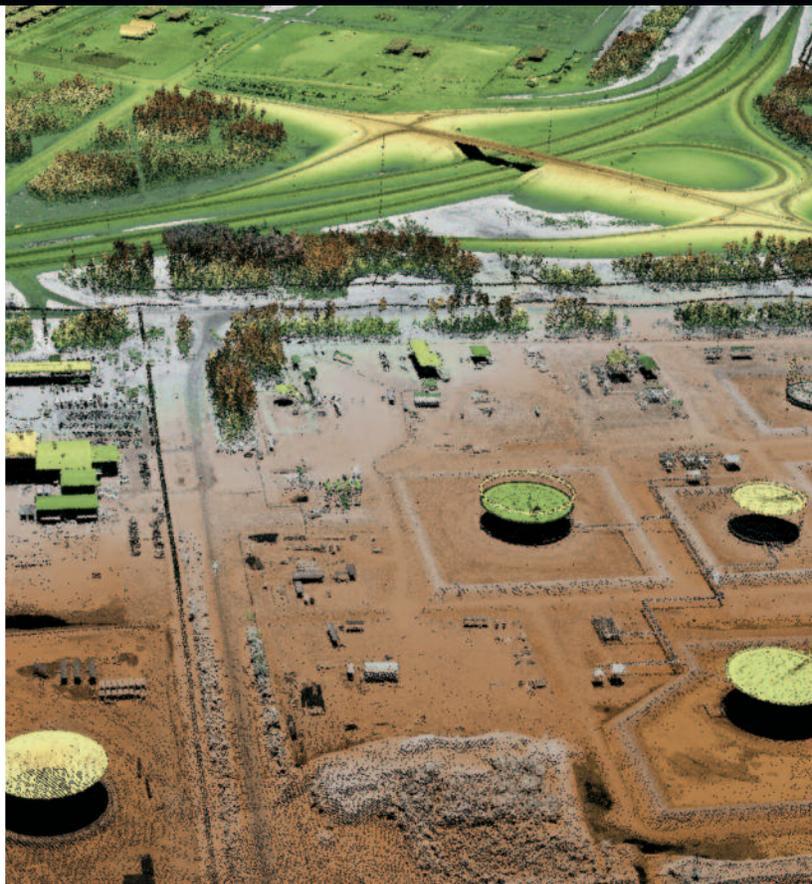
- Meandering line to block continuous line of site
- Avoidance cut line in areas that require it
- Minimum disturbance to the duff layer

Shot-Hole Drilling

With five crews for heli-portable drilling and over 30 track drills, we can access and drill at virtually any location.

Our state-of-the-art drills are custom built with the focus on safety, production, and durability. Since our drills are built in a variety of widths, Clean Harbors can employ small drills in hard-to-navigate terrain and large drills in mulched or open terrain to maximize shot-hole drilling production. Our drills are user friendly, lightweight, and provide the air and power needed to maximize production. To minimize downtime, every crew has spare equipment and a full-service mechanical support unit.

- **Track drills**
 - 5-foot, 7-foot, and 8-foot-wide drills with low ground pressure
 - Rated to 50 meters, 8-foot stroke, up to 3 7/8-inch-diameter holes
 - Liquid cooled motors with Pro-heat heating systems allow quicker drilling even in temperatures as cold as -30C/-22F
 - Rubber tracks protect the environment
 - 200-gallon water tank with an additional 40-gallon mud premix tank for injection into shattered and gravel formations
 - Two pressurized injection tanks for downhole chemicals



- Detachable compressor package with an additional 160-gallon bolt-on water tank for extra water capacity for water drilling
- Downhole hammer or water injection with auger capabilities
- **Heli-portable drills**
 - Rated to 50 meters, 1.5-meter stroke, up to 3 7/8-inch-diameter holes
 - Drill and compressor units are completely self contained with all fuel, magazines, and drill rods on board
 - Everything required to drill the shot hole is moved onto the location in two picks
 - Each piece of equipment is equipped with 10-pound ABC fire extinguishers, and a first-aid kit is located on the drill unit
 - Downhole hammer or water injection with auger capabilities

minimizes environmental impact and time in field, maximizes safety, and keeps costs down.

Airborne LiDAR is incorporated with every phase of a lease site's life span. The same data set is used for permitting and stakeholder consultation, geophysical program planning, design and implementation, heavy equipment moves, environmental assessments, spill planning and drainage, locating and costing well sites with cut and fill modeling, design and planning of pipelines and access roads.

Even after the completion or abandonment, the data is invaluable as an accurate reflection of the condition of a site prior to the exploration project, which is key in dealing with stakeholder/landholder concerns and issues pertaining to cause and effect.

Learn more about Airborne Imaging at www.airborneimaginginc.com.

LiDAR Geospatial Technology

Airborne Imaging, a Clean Harbors company, is a leading provider of Light Detection And Ranging (LiDAR) mapping services to the energy sector. Airborne LiDAR remote sensing technology provides high resolution Digital Elevation Models (DEMs) of the vegetation height and the surface beneath the vegetation layer (Bare Earth). The technology accurately maps ground through tree canopy making it the fastest, safest, and most cost-effective and environmentally sound method of determining slope, drainage, and earth moving requirements to efficiently budget and deploy the correct resources for any exploration project.

Airborne has over 200,000 mi² of topographic data on North America for oil, gas, and mineral exploration. Having the most accurate data



Committed to Your Business

Total Project Management

Clean Harbors Exploration Services provide turnkey project management and are your one-stop-shop for complete surveying, cutting, and drilling needs. With the depth of in-house resources of manpower and equipment, we have the ability to scale our resources to meet your demands. Our expertise, equipment, highly trained personnel, and a focus on safety provide you with the peace of mind knowing your project, whatever the size, is in good hands.

Simplify and reduce costs by working with one company for full project management aligned with the way you do business.

Our goal is to eliminate your liability, reduce costs, and help you maintain your competitive edge.



Clean Harbors

Commitment. Leadership. Confidence.

Clean Harbors is North America's leading provider of environmental, energy and industrial services serving over 50,000 customers, including a majority of Fortune 500 companies, thousands of smaller private entities, and numerous federal, state, provincial, and local governmental agencies.

Within Clean Harbors Environmental Services, the Company offers a broad range of hazardous material management and disposal services, including the collection, packaging, recycling, treatment and disposal of hazardous and non-hazardous waste. We also provide a wide variety of environmental cleanup services on customer sites or other locations on a scheduled or emergency response basis.

Within Clean Harbors Energy and Industrial Services, the Company provides industrial and specialty services, such as high pressure and chemical cleaning, catalyst handling, decoking, material processing, and industrial lodging services to refineries, chemical plants, pulp and paper mills, and other industrial facilities. We also provide seismic, production, directional boring services, and surface rentals to the energy sector serving oil and gas exploration, production, and power generation.

Founded in 1980, Clean Harbors has grown to be the leading and most trusted environmental, energy and industrial services, and waste management company, fully committed to preserving natural resources, serving local communities, and adhering to strict government regulations.

Look to Clean Harbors to handle every aspect of your environmental, energy and industrial services management program.

Environmental Services

- Chemical Packing
- Emergency Response
- Field Services
- Household Hazardous Waste
- InSite Services
- Recycling Services
- Transformer Services
- Waste Disposal

Energy and Industrial Services

- Directional Boring
- InSite Services
- Lodging Services
- Production Services
- Industrial and Specialty Industrial Services
- Seismic Services
- Surface Rentals



For Exploration Services

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