



Hydro Excavation: The Safer, More Effective Choice

117 Industry Road
Marietta, Ohio 45750
Phone: 800.752.2400
www.x-vac.com

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Attendees of the 2014 Pumper Show in Indianapolis, Indiana, were sure to notice one thing immediately. The year 2014 appears to be the year of hydro excavation. Many of the major equipment exhibitors had at least one hydro excavator on display. What is the explanation for this growth in the hydro excavation sector? The truth is that hydro excavation is safer and more efficient than conventional equipment for a variety of applications. This white paper will explore why hydro excavation is increasingly in demand.

The History of Hydro Excavation

Every story must begin at the beginning. Hydro excavation began its story in the 19th century in the gold mines of California. After the surface gold had been mined, accessing the valuable material became increasingly difficult. A process called hydraulic mining was born to help alleviate this difficulty. Hydraulic mining essentially used water to wear away large landmasses to make the gold visible.

Despite its early start in California, hydro excavation as we know it today truly began in Canada. During the 1970s and 1980s hydro excavation equipment began to appear in its early form, and in the 1990s companies began to manufacture the kinds of truck and trailer-mounted equipment with which we are familiar today.

With the increase in underground fiberglass wiring and the rapid growth of the gas and oil mining industry, it is likely that the hydro excavation industry will continue to grow rapidly as well.

What Makes Hydro Excavation Safer and More Effective?

Unlike digging with backhoes and bulldozers, hydro excavation is a non-mechanical process that uses pressurized water in conjunction with high-power vacuum to first create a watery mud where the excavation needs to take place and then to vacuum up the mud to the debris tank on the truck.

Virtually eliminates risk of underground utility damage

Despite “do not dig” warnings, utility lines are cut every day costing thousands of dollars in repairs and lost service to customers. Because hydro excavation systems use only water and vacuum, the risk of damage is virtually eliminated. What’s more, a hydro excavation truck can be parked on a street at a fair distance from the excavation site, thereby minimizing the impact on the surrounding area.

Safer for the environment

One of the most important benefits of hydro excavation is that it does not heavily impact the environment in which it is being conducted. Traditional excavation equipment not only disrupts the soil around the working area in a much wider scope, it also is much more likely to dig through buried gas lines or fiber optic wire.

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2

More convenient to use

Because hydro excavators do not need to be positioned right next to the work area, the truck can be parked nearby in a more convenient area while still providing access to the work area. Conventional excavation equipment must be positioned right at the work area no matter how inconvenient that may be.

Safer for the operators

In addition to being safer for the environment, hydro excavation is also safer for the people who are operating the machinery. Consider first the difference between manual shoveling and hydro excavation. Not only can manual shoveling put workers at higher risk for injury, it can also result in workers suffering from heat exhaustion or frostbite on very hot or cold days. When a worker is tired, the chance for error grows exponentially.

Hydro excavation enhances safety as well because operators are only jetting pressurized water and directing a vacuum hose. The truck can be at some distance away from the site, as mentioned previously. Less noise and less heavy equipment on the site creates a far safer environment for all workers on the job.

More effective

The safety benefits of hydro excavation are clear, but how do these facets of this process also help to make hydro-excavation more effective?

First, as has already been mentioned, the ability to precision target areas with hydro excavating greatly enhances the effectiveness and efficiency of any project. Lessening the chance for human error, injury, and damage to underground wires and piping will also make hydro excavation projects seem far more favorable than more traditional approaches to projects.

The most obvious way that hydro excavation can enhance the effectiveness of a project is the speed with which it works. Especially in comparison to manual digging, using hydro excavation is faster and more precise. A final benefit at the end of the job is that because hydro excavation is more precise and does not disrupt the soil like conventional excavation methods, there is little need for backfilling after the job is complete. That saves time and allows workers to move on to the next emergency project.

Ideal Applications for Hydro Excavation

Understanding that hydro excavation is safer and more effective than other conventional methods, what kinds of applications can benefit from hydro excavation? Here is a short list.

Utility evaluation

Preventing potential problems with utilities requires regular monitoring and evaluation. Increasingly, utility wires and cabling are located underground, making it more difficult to access what is needed. Commonly called potholing or daylighting, hydro excavation can expedite the process of accessing those utility features.

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Cold weather digging

Hydro excavation can keep your project going even in bitter cold weather. Not only can mobile hydro excavation systems access remote areas or areas that might be difficult to access in bad weather, but water from a hydro excavation truck can be warmed in order to get under snow and frozen surfaces.

Gas & Oil Mining

Hydro excavation can work very effectively in the gas and oil mining industry. The ability to use just a hose instead of heavy machinery can help work progress in small spaces, and the gentleness of water can also help prevent damage as gas and oil pipes are uncovered and/or evaluated.

Truthfully, any application that requires manual shoveling or traditional excavation could benefit from the safety and efficiency of the hydro excavation process.

Why X-Vac?

Clearly, hydro excavation is a valuable technology, and it is only increasing in value as the years progress. Why choose X-Vac Hydro Excavation Trucks if you are considering the use of this methodology, however?



X-Vac is the top-of-the-line hydro excavator on the market. All X-Vac trucks offer a low profile debris tank for a lower center of gravity, variable control for pressure and flow that is separate from the blower RPM, and a dual cyclone separator with enlarged collection chambers.

To learn more, visit www.x-vac.com.