

#### **Overview**

- Some of this discussion will venture to explain alternative uses of equipment
- modification of tools and apparatus to facilitate success in the diverse environment of the water and wastewater industry

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#### **Overview**

- Session will highlight Hydro Excavation techniques.
- Benefits and detriments of Hydro Excavation

# History of Hydro Excavation

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#### **Overview**

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- Session will also discuss the use of jetting and vacuuming equipment to find utilities
- Techniques for digging holes, pump station and manhole cleaning and maintenance

#### **History**

- It is believed that hydro excavation started in the mid 1800's.
- This is when the miners in California used steam pump-pressurized water to wear away land masses.

#### **History**

- They did this to capture gold and other minerals easily.
- This process they used was then referred to as Hydraulic Mining.

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#### **History**

 In 1990's, many companies began to manufacture trailer-mounted units and trucks in different configurations to satisfy the growing demand of the market for hydro excavation machines.



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#### **History**

 As time passed, technology got better and people invented a more competitive machine for excavation. The first hydro excavation services machine called the "ExcaVactor" was built in 1969 <u>History</u>

- Today, hydro excavation is being used widely across the United States & Canada.
- More and more companies are offering the hydro excavation service.
- Over the coming years it is expected that further improvements will create even better, easier & faster systems of hydro excavation.

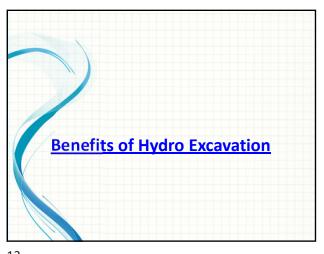
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#### **History**

 In 1970's and 1980's, vacuum trucks and sewer cleaners were adapted by the public for hydro excavation use. Some people removed the vacuums from these vehicles and put them on all-terrain types of vehicles in order to get to remote locations more easily.





#### **Benefits**

- Conventional excavation methods like manual digging and the use of backhoes are not as accurate for digging soil.
- Manual digging is very intensive and time consuming for the laborers.
- Heavy machinery poses safety risks to laborers and also causes damage to the surroundings.

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Hydro Excavation is able to reduce a lot of the risks and costs that are brought about by traditional digging methods.

High pressure water or air are used along with vacuum to complete the excavation system.

Hydro excavation eliminates these issues.

It is a non-mechanical, eco-friendly and safe method.

It gets the job done faster and more accurately with less effort from laborers.

This means that costs are cut and the service provided is better and more efficient

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#### **Benefits**

- Hydro excavation is very useful for several industries.
- Excavation of plumbing pipes and sewers, installation of posts, poles, etc are just a few examples of applications.
- This makes it more and more popular in the industrial world.









#### **Benefits**

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- Hydro excavation mainly involves water and vacuum.
- · Air excavation uses high pressure air and vacuum.
- The equipment for this process can be positioned at a distance from the actual excavation area.
- This lessens traffic and congestions at the excavation site.

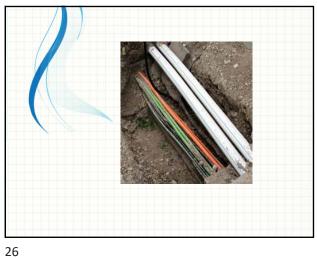
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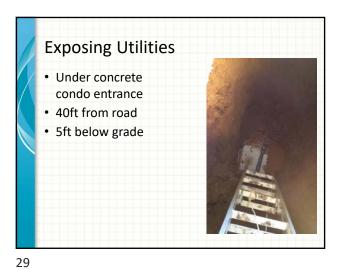


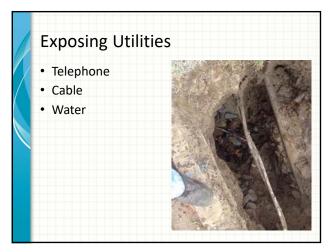


















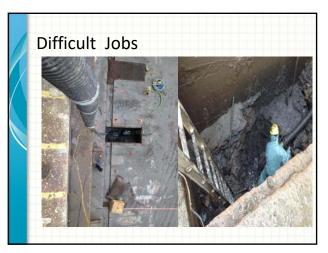




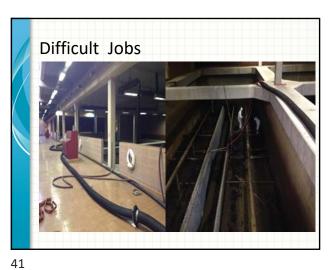


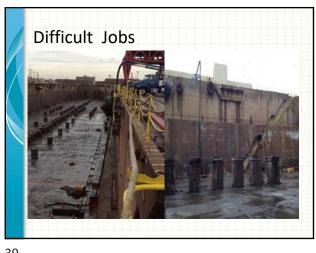


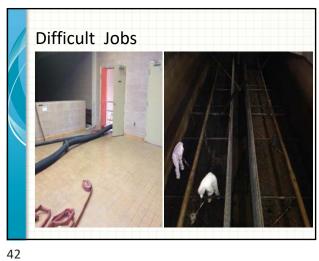


















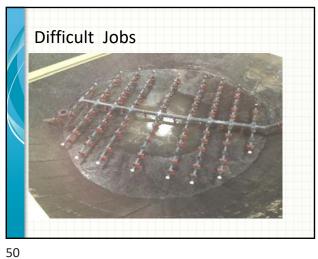


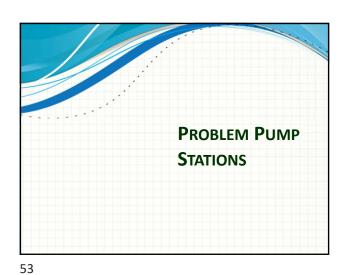


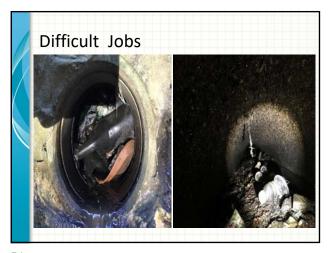


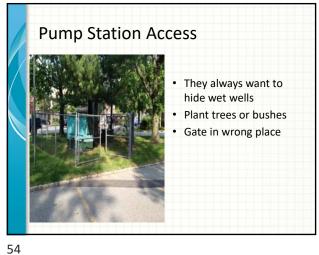


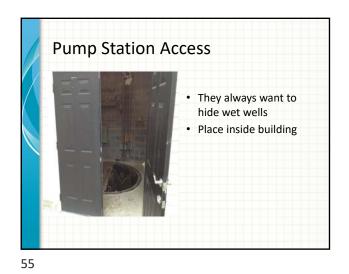














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