

THE UNDERGROUND UTILITIES EVENT | JANUARY 25-27, 2022 | FORT WORTH, TEXAS

# Staying Efficient with Modern Hydro Excavation Best Practices

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# Why Hydro Excavation

- Soft Excavation
  - Safe
  - Damage prevention
  - Existing infrastructure
- Efficient
  - Smaller footprint
  - Minimizes or eliminates spoils
  - Reduces cost
- Regulations
  - Nationally recognized





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## History of Hydro Excavation

- 1800's
  - Used by gold miners in the mid-1800's for hydro mining
- 1969
  - First Vacuum Excavator mounted to a modified truck chassis
- 1990's
  - Vacuum Excavation became an excepted practice
- Today
  - Required practice in many areas





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# Advances in Technology

- Engine Efficiencies
  - HP gains
  - Dynamic loading
  - Fuel efficiency
  - Quieter packages
- Other Improvements
  - Hydraulic systems
  - Blower technology
  - Nozzle advancements
  - Decreased footprint





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# Benefits of Technology Advancements

#### More Suction at the Tool

- Longer Uptime
  - Fuel efficiencies
  - Less water used
- Production
  - Nozzle advancements
  - Pump advancements
  - Use of heaters
- Jobsite Versatility





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### Nozzle Advancements

- Rotating Nozzles
  - Less flow / more productive
  - Ability to be rebuilt
  - Better internal materials
- Lessons Learned
  - No fan nozzles
  - Keep lance moving
  - Make sure the nozzle is the right rating for your vacuum

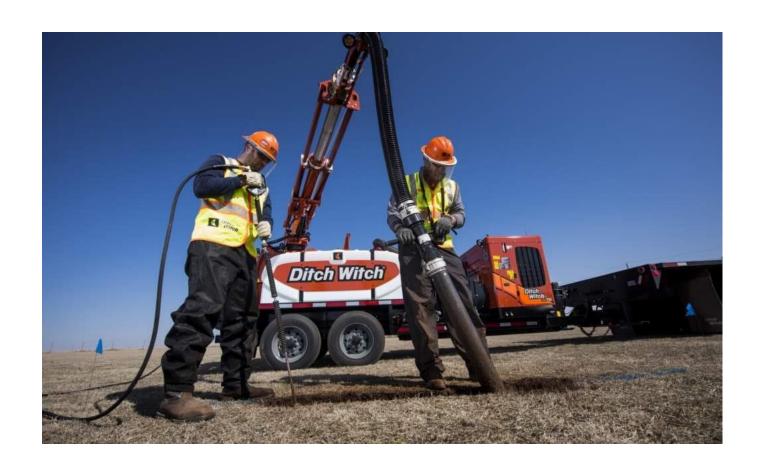




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# **Expanding Vacuum Uses**

- Traditional Vac Uses
  - HDD support
  - Mud disposal
- Today's Vac Uses
  - Daylighting
  - Post job mapping
  - Slot trenching
  - Soft excavation





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## Cross Bore

What is a cross bore?

 What can be done to mitigate cross bores?





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# Choosing the Right Vacuum Excavator

- What Type of Work?
  - Frequency?
  - What are the soil conditions?
- Horsepower
  - · Gas or diesel?
- Vacuum Specs
- Water System
- Air





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## Vacuum Excavation Best Practices

Always Call 811

Nozzle Selection

Pressure Selection

Keep the Digging Lance Moving





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## Vacuum Excavation Best Practices

- Verify Locates
- Physically Expose Conflict Zones
- White Line Intended Path

Heated Water Cuts Better





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Q&A