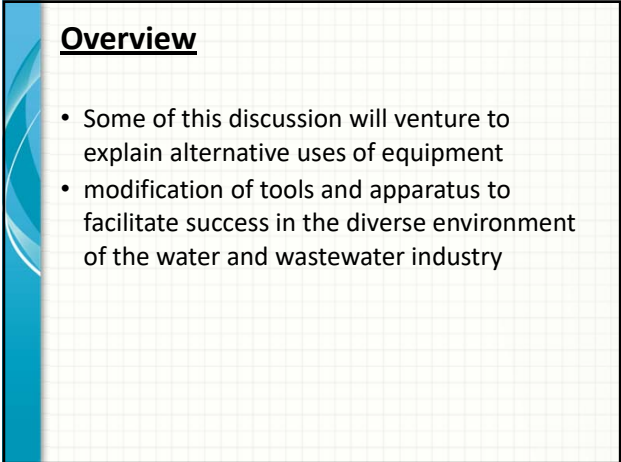
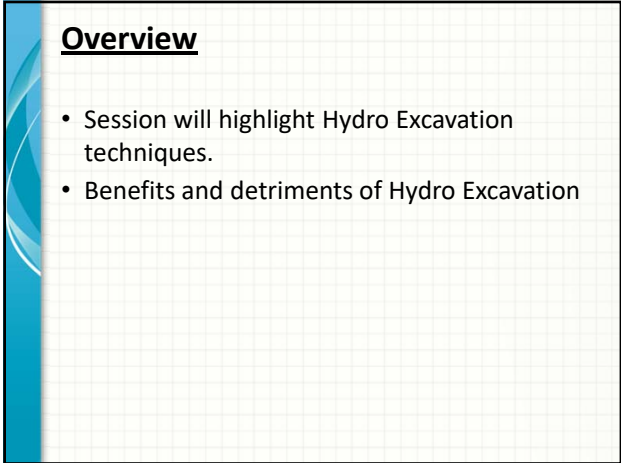


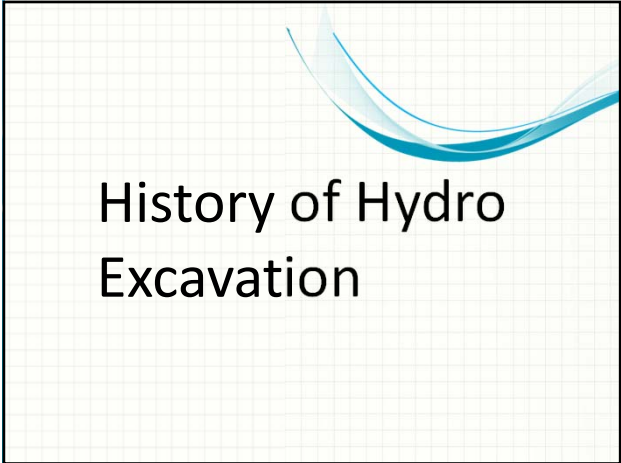
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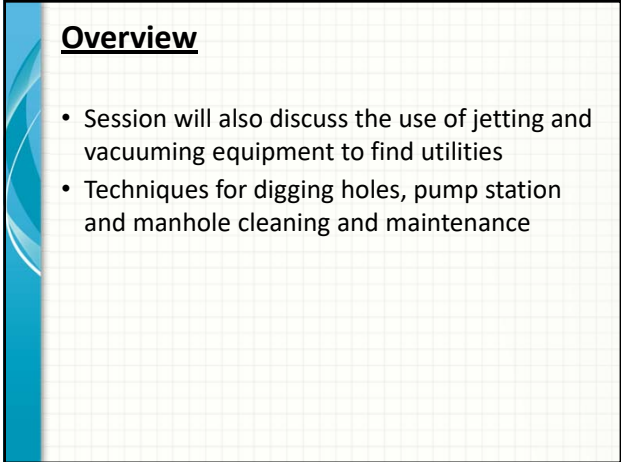
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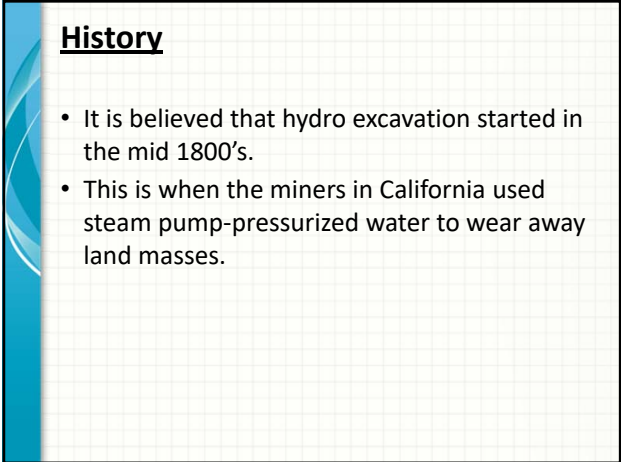
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6

History

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

7

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.



10

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

8

History

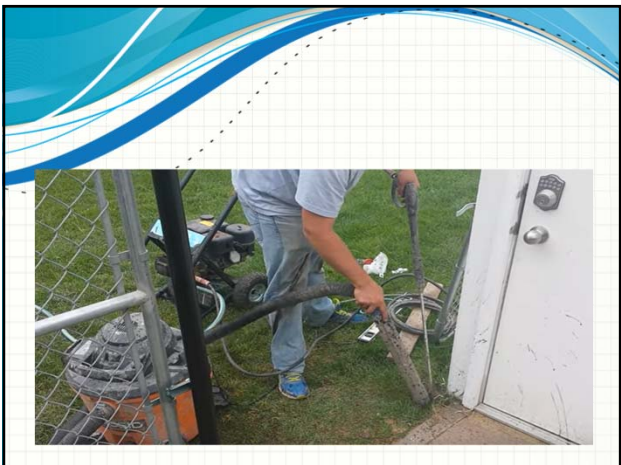
- Today, hydro excavation is being used widely across the United States & Canada.
- More and more companies are offering the hydro excavation service.
- Over the coming years it is expected that further improvements will create even better, easier & faster systems of hydro excavation.

11

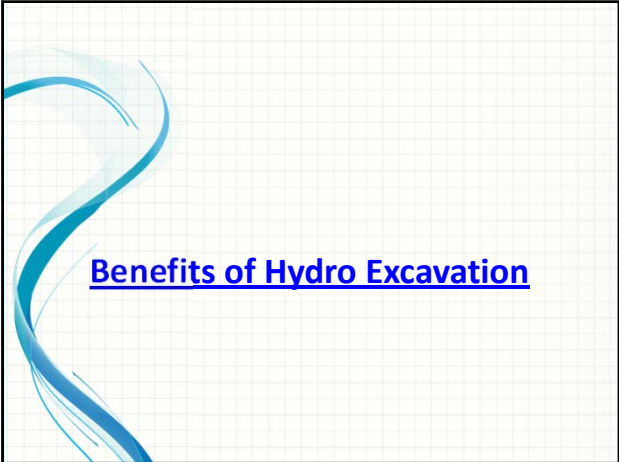
History

- 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.

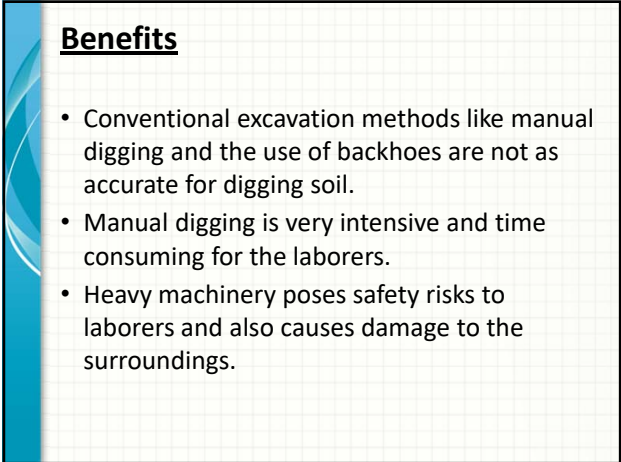
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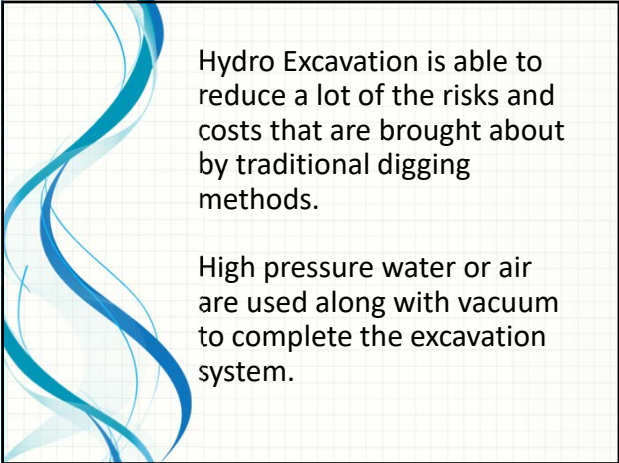
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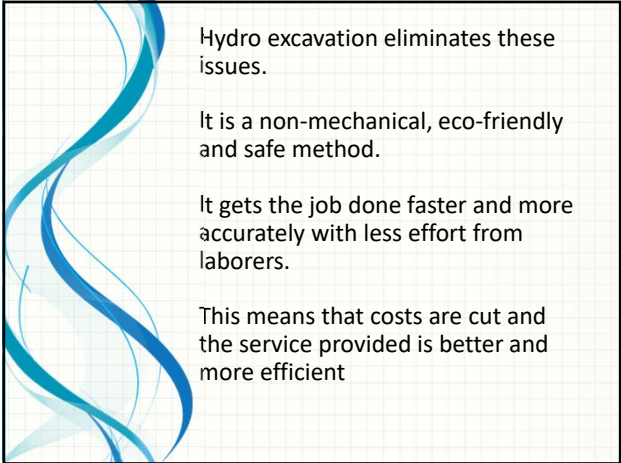
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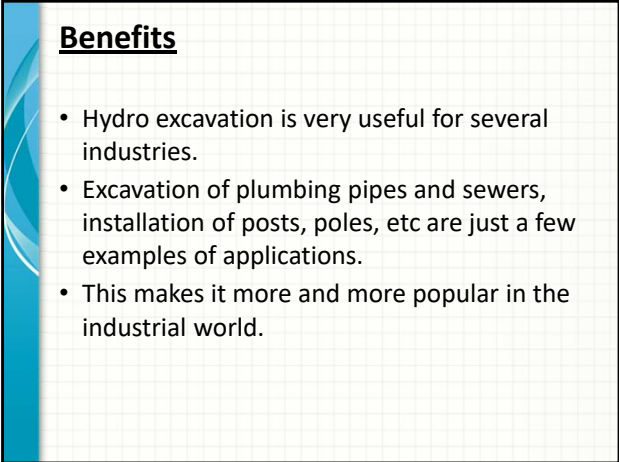
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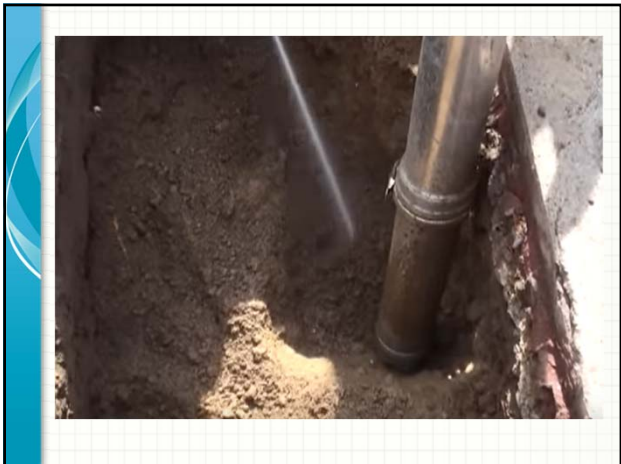
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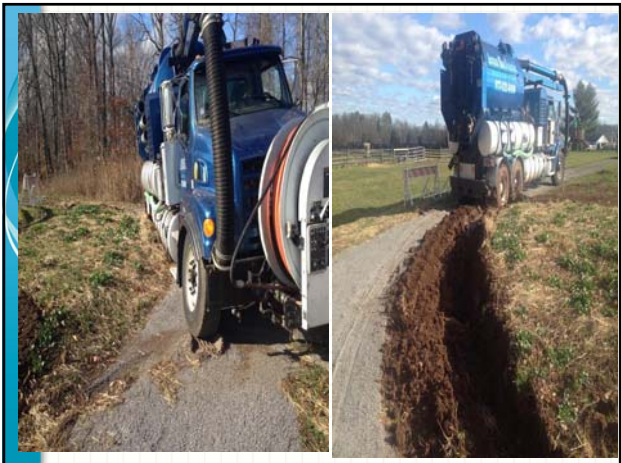
Benefits

- 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.

23



21



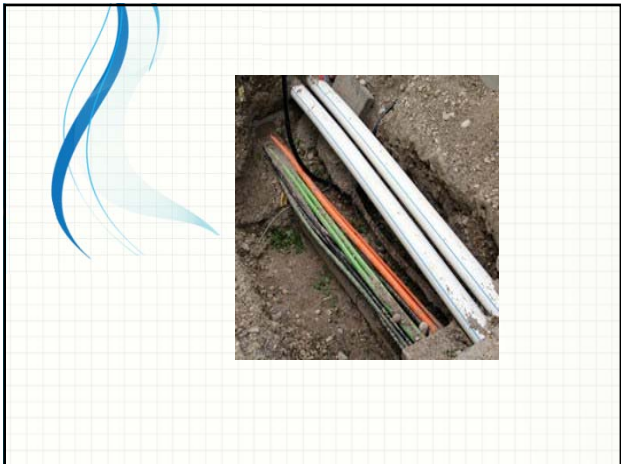
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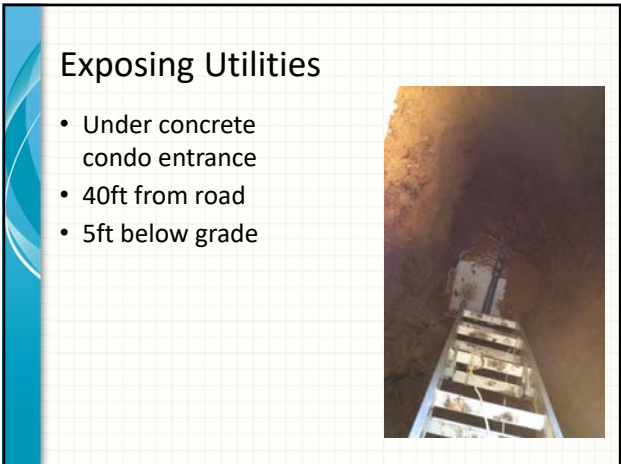
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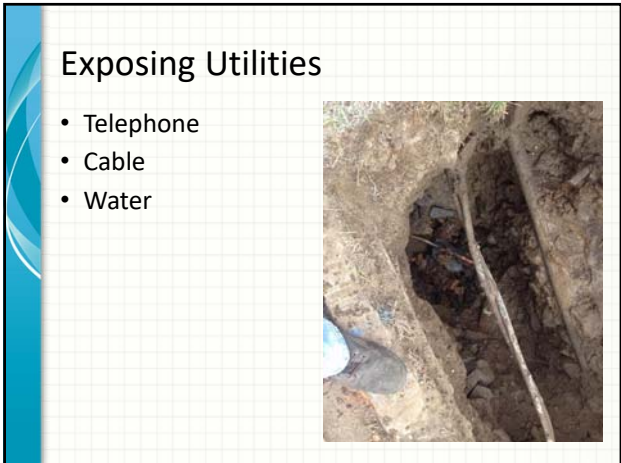
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Exposing Utilities



31

Super Storm Sandy



34



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Super Storm Sandy



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Exposing Utilities



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Super Storm Sandy



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Super Storm Sandy



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Difficult Jobs



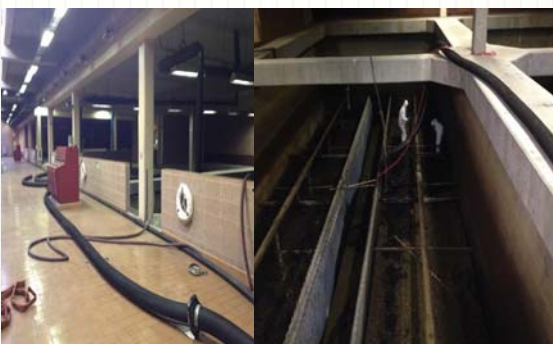
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Difficult Jobs



38

Difficult Jobs



41

Difficult Jobs



39

Difficult Jobs



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Difficult Jobs



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Difficult Jobs



46

Difficult Jobs



44

Difficult Jobs



47



45

Difficult Jobs



48

Difficult Jobs



49

Difficult Jobs



52

Difficult Jobs



50

PROBLEM PUMP STATIONS

53

Difficult Jobs



51

Pump Station Access



- They always want to hide wet wells
- Plant trees or bushes
- Gate in wrong place

54

Pump Station Access



- They always want to hide wet wells
- Place inside building

55

When overflow happens



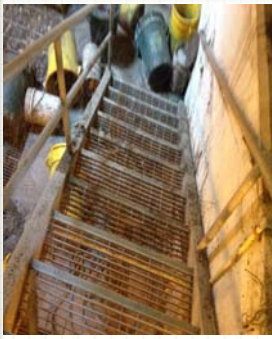
58

Pump Station Access



- Placement of wet well, control building and pump chambers make it difficult to clean without extra equipment

56



59

Pump Station Access



- Maintenance not planned for
- Wet Well on right side
- Raised sidewalk plus steep downgrade makes truck placement a problem

57

Hours later, all better



60

Pump Issues



61

Tools



64



62

Tools locally made



65

Pump Station Access



63

THANK YOU

66