



**national
ground water
association**
it's more than just water

AIR ROTARY DRILLING

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Air Rotary Drilling

- This workshop will present general information on air rotary drilling, safety around the drill rig and selecting proper size tools and their use. Safe equipment operation will be addressed, in addition to unique properties of this method.
- **In this session on air rotary drilling**, We will discuss safe set up and tear down, air rotary drill equipment , proper support equipment, bit selection and proper maintenance of hammers.

OUTLINE

- **Rig set up and tear down safely**
- **Air rotary drilling method**
- **Selection of proper support equipment & accessories**
- **Selection of a bit for maximum production**
- **Proper hammer maintenance**

RIG SETUP AND TEAR DOWN



Considerations

- 1. Always call for utility locations prior to set up.
- 2. Private utilities vs Public utilities
 - Duration & expiration dates
 - Site meets
 - Maps & drawings
 - Flag or paint (both)
- 3. Appropriate blocking methods

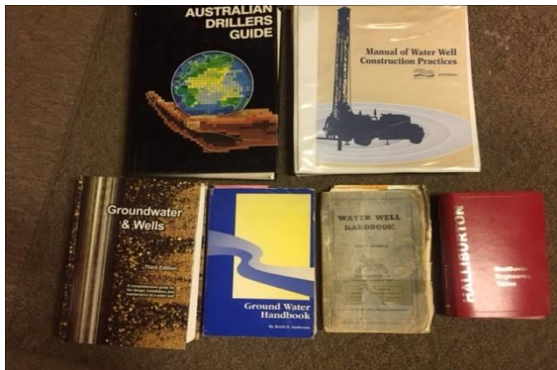


Good Blocking vs bad

Reasons for Proper Blocking



Air Rotary Methods

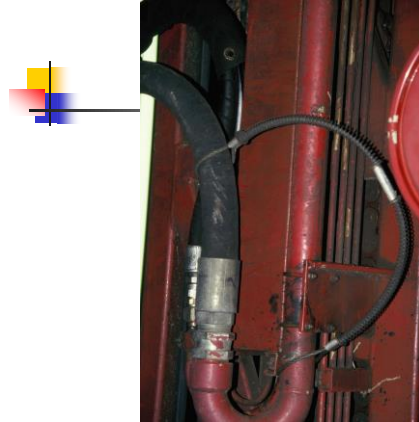


- Air compressor {cfm vs psi}
- Maintenance & safety issues
- Hose ratings & safety issues

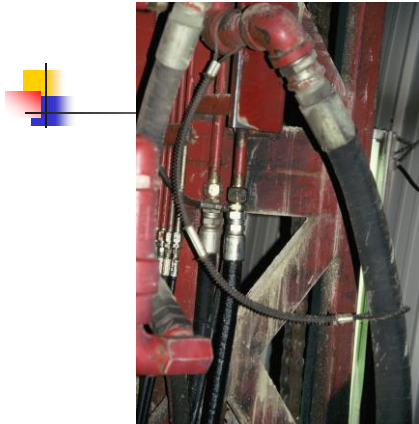




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Importance of proper bid selection





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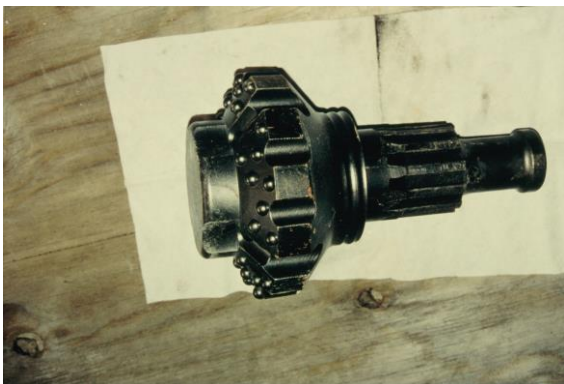
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- Rotary Speeds
Shock Subs (optional)



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- Pull down & hold back pressures
Down hole air pressure



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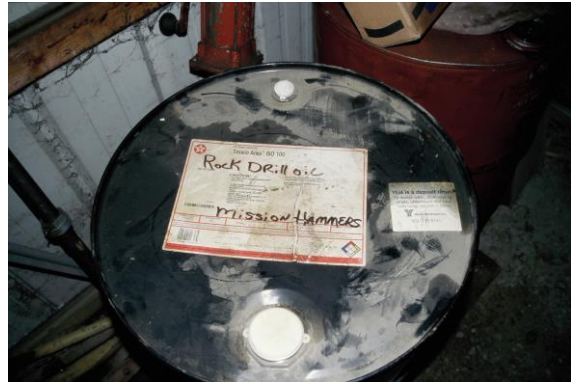


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- Most common methods of air rotary drilling
 - Air Drilling
 - Air Foam Drilling
 - Air Mist Drilling
 - Air Foam Gel Drilling



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Proper Containing of Drill cuttings



Hammer Maintenance

- Know your hammer and its parts
- Recognition of wear
- Importance of proper lubrications
- Hammer Storage techniques

Hammer Care



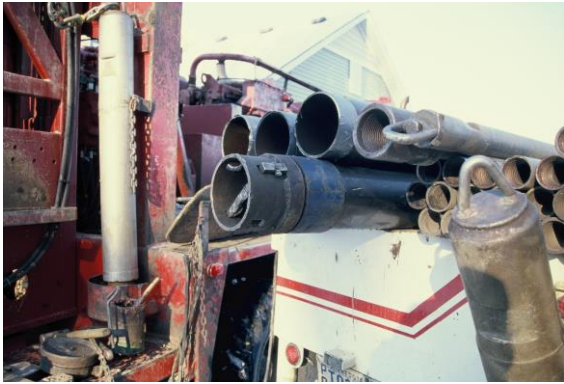
Hammer Storage



Hammer Transport



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Completion of Well

- Properly seated casing
- Properly grouted casing
- Proper development techniques
- Well head securement



Safety one more time

- Safety Training
- Tail gate talks
 - NGWA
 - Insurance company loss control
 - Fmcsa / Osha
- Loss control evaluation
- Accident evaluation

Safety First:

- At work
- At home
- At play
- And end of day.
- MAKE SAFETY LAST

■ Think About it!

In closing

- Water affects everyone and everything on Earth
- We are the GROUND WATER PROFESSIONALS.





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