Former Charlotte Naval Ammunition Depot

Groundwater Remediation Project
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• Agenda
  – Introductions
  – Health and Safety Moment
  – Scope of Work
  – Schedule
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• Introductions
  – USACE
  – PIKA-Pirnie JV
  – Subcontractors
    • Well Driller
    • Utility Locator
    • Waste Management Contactor
    • Analytical Laboratory
Health and Safety Moment

For your safety:

• Slope or bench trench walls, or
• Shore trench walls with supports, or
• Shield trench walls with trench boxes.
• Provide safe access through the use of ladders, ramps or stairways.
• Keep heavy equipment away from trench edges.
• Know where underground utilities are prior to digging.
• Keep excavated or other materials at least 2 feet back from the edge of trench.
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• **Scope of Work:**
  – To implement an active in situ remediation system consisting of 2 years of active injection
  – Complete Performance monitoring during the period of active injections
  – Complete MNA (monitored natural attenuation) monitoring for an additional 2 year period
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• Active Remediation of Groundwater
  – Enhanced Reductive Dechlorination
  – An engineered bioremediation technique which involves the periodic delivery of organic carbon into the target treatment zone
  – Carbon provides an electron donor to reduce CVOC constituents to inert end products
Construction Sequence

Week of January 7, 2013:

- Meet with property owners / occupants regarding upcoming work
- Complete utility mark outs
- Collect soil samples at IDW management areas
- Deliver roll off boxes, frac tanks, and install fence in IDW management areas
- Map out proposed monitor well locations
Construction Sequence:

Phase 1:
Monitor well installation
5 Transition Zone (25 ft)
6 Bedrock Zone (250 ft)

Schedule:
January 14-February 15

Tasks:
Drill rig on site with 3-4 persons to install each well. Installation time will vary from 1 day per well to 4 days per well.

Soil and water generated will be stored in designated areas.

Baseline groundwater monitoring will be completed in late February
Site Specific
Arrowood Southern Co.
Site Specific
Eastgroup Properties, LP
Site Specific
Beacon Commerce Park, LLC
Site Specific
Jim Pattison Developments, Inc.
Site Specific Pavestone Company, LP
Site Specific Textron, Inc.
Based on baseline groundwater monitoring results, injection wells will be installed.

- Shallow injection wells (53 estimated)
- Bedrock Injection wells (25 estimated)

Duration is anticipated to be approximately 3 months.
Overlapping with the installation of injection wells will be remedial system construction:

- Piping and trenching
- Remedial system compounds

Construction is tentatively scheduled to be completed in Mid-June.
Remedial System Compound

Carbon Storage, distribution, and controls
Operations

- Injection events will be completed on a quarterly basis for a 2-year period (8 events).
  - Each injection event will last from 2 to 5 weeks
  - An estimated 2.1 million gallons of solution will be injected during each event
  - The system will be automated. Periodic well inspections and material delivery will be the only visible evidence of operation.
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• Impacts to Property Owners and Occupants
  – There will be minimal disruption to daily activities. Any disruptions will be coordinated with Owners and Occupants prior to work activity beginning.
  – Minimal access limitations to Owners and Occupants
  – Periodic inspection of individual well vaults
  – Material delivery (tanker trucks delivering to system compounds)
  – Quarterly performance monitoring (4 years total)
    • Individuals set up at wells (20-30 total) for a duration of approximately 2 hours to sample
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• Project Completion:
  – The final groundwater monitoring event is anticipated for May 2017
  – Depending on the effectiveness of the remedial system, components may either be decommissioned or remedial activities will continue.