

# Former Charlotte Naval Ammunition Depot

Groundwater Remediation Project

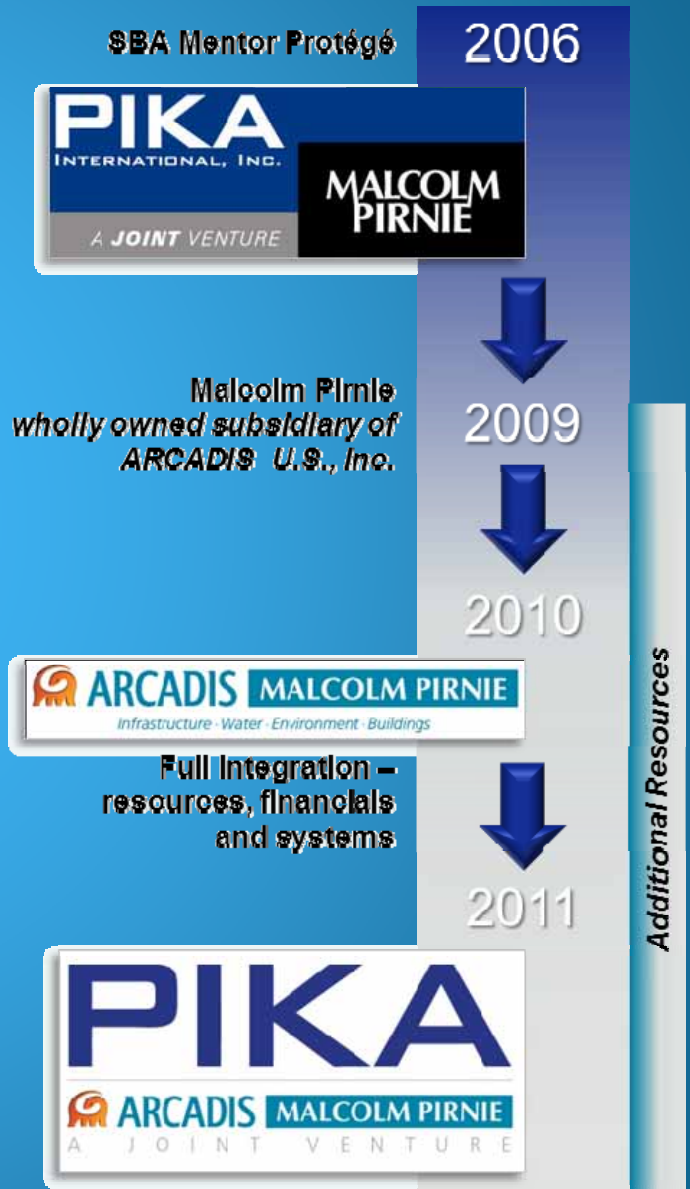


# Former Charlotte Naval Ammunition Depot

- Agenda
  - Introductions
  - Health and Safety Moment
  - Scope of Work
  - Schedule

# Former Charlotte Naval Ammunition Depot

- 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



# Former Charlotte Naval Ammunition Depot

- 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 Eastgroup Properties, LP



# Site Specific Beacon Commerce Park, LL

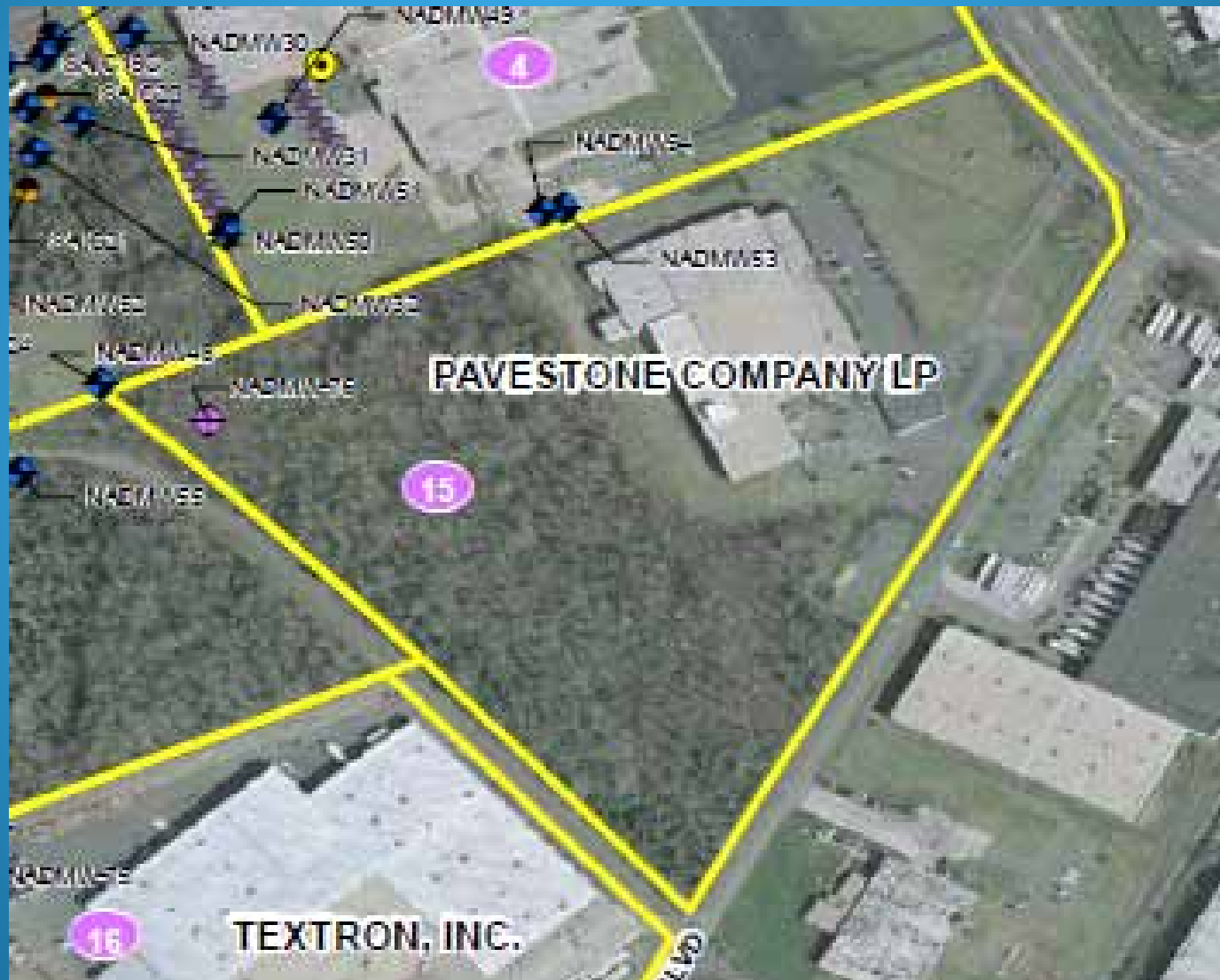


# Site Specific Jim Pattison Developments, Inc.





# Site Specific Pavestone Company, LP



# Site Specific Textron, Inc.







# Construction Sequence:



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



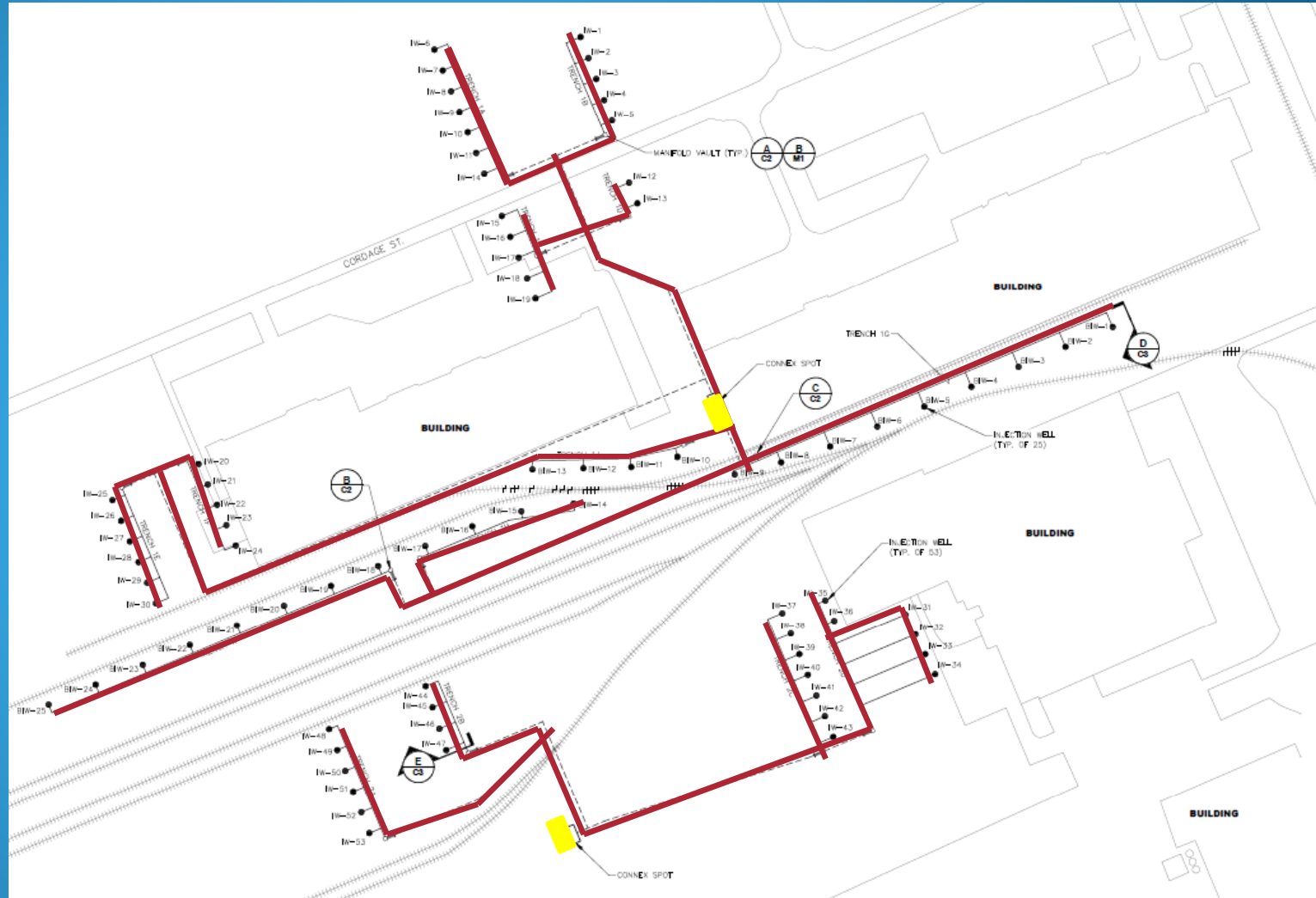
# Remedial System Construction

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.