Agenda

Restoration Advisory Board
Naval Weapons Industrial Reserve Plant Bethpage

April 4, 2012, 2011
Bethpage Senior Community Center,
103 Grumman Road W, Bethpage, NY. 7:00 p.m.

Welcome and Agenda Review
Lora Fly, NAVFAC Mid-Atlantic

Meeting Minutes
All Members

Technical Progress

Site 1 Activities – Onsite Drilling Activities
Rob Sok, Tetra Tech

GM-38 Operation
Jen Good, H&S

Soil Vapor Extraction Containment System Performance and Modifications
Jen Good, H&S

OU 2 - Offsite Groundwater Investigation, Public Water Supply Design, and Interim System Construction
David Brayack, Tetra Tech

Closing Remarks
Lora Fly

Presenters will be available after the program for questions.

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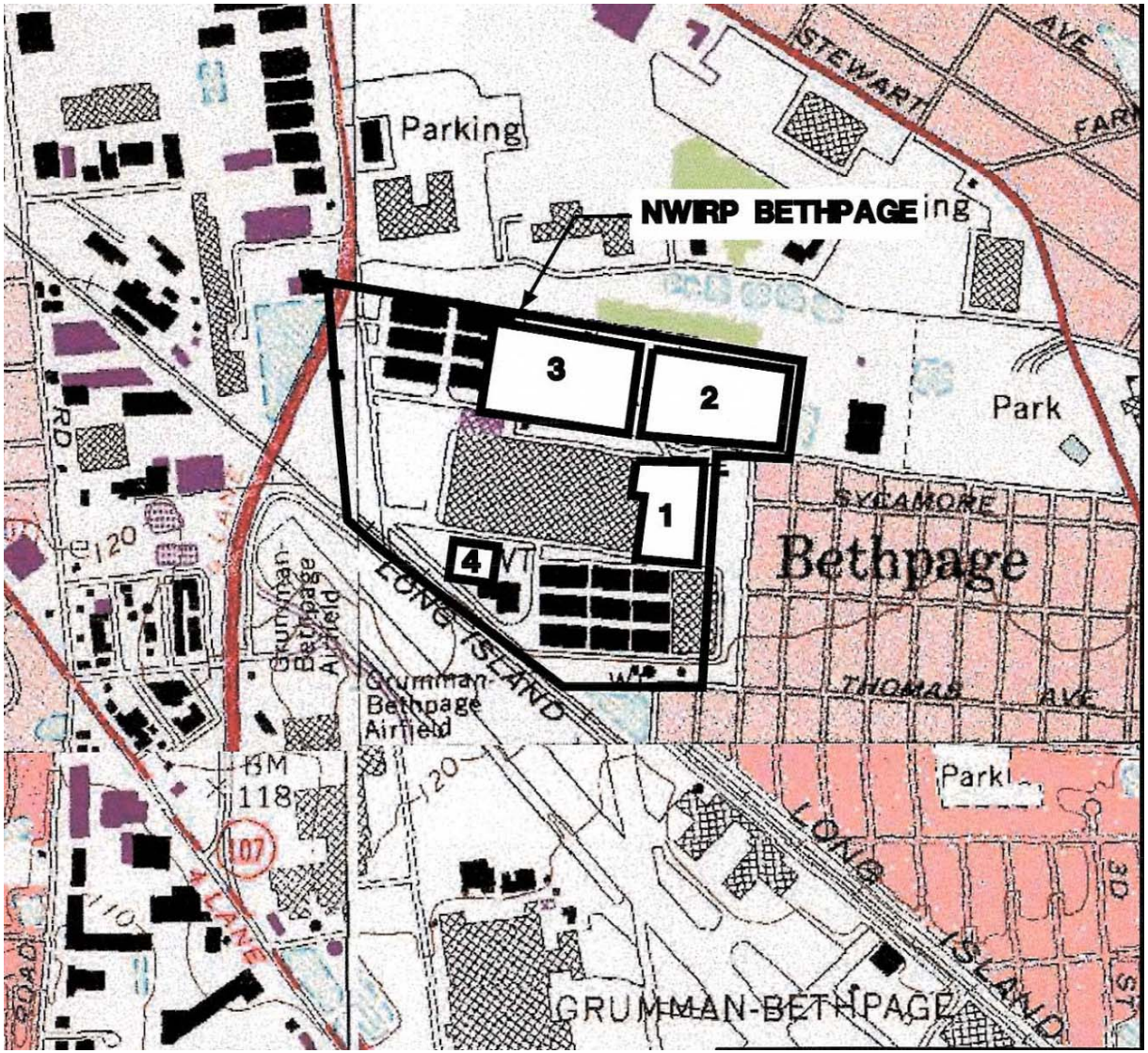
Restoration Advisory Board (RAB) Meeting

Site 1 PCB Investigation - Update

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

April 4, 2012

FACILITY MAP



PCB INVESTIGATION UPDATE

- SAP/Work Plan for PCB Investigation finalized May 2010
- Primary Objectives:
  - Delineate vertical extent of PCBs in soil
  - Determine whether PCB-contaminated groundwater has migrated beyond the site boundary
  - Determine whether organics could have acted as a carrier fluid promoting PCB migration
- 6 soil borings and 15 monitoring wells installed in 2010 via rotosonic drilling methods
- Groundwater sampling events conducted in early December 2010 and March 2011

PCB INVESTIGATION UPDATE

- Vertical extent of PCB contaminated soils determined at approximately 70 feet bgs in source area soil borings
- Fuel and solvent-related VOCs detected at low concentrations, not likely to affect PCB migration
- Groundwater sampling events conducted in early December 2010 and March 2011
- Based on Groundwater results, Interim Report and SAP Addendum submitted in July 2011
- 15 additional monitoring wells installed October – December 2011 (upgradient and downgradient)
- Groundwater sampling event conducted in late January 2012

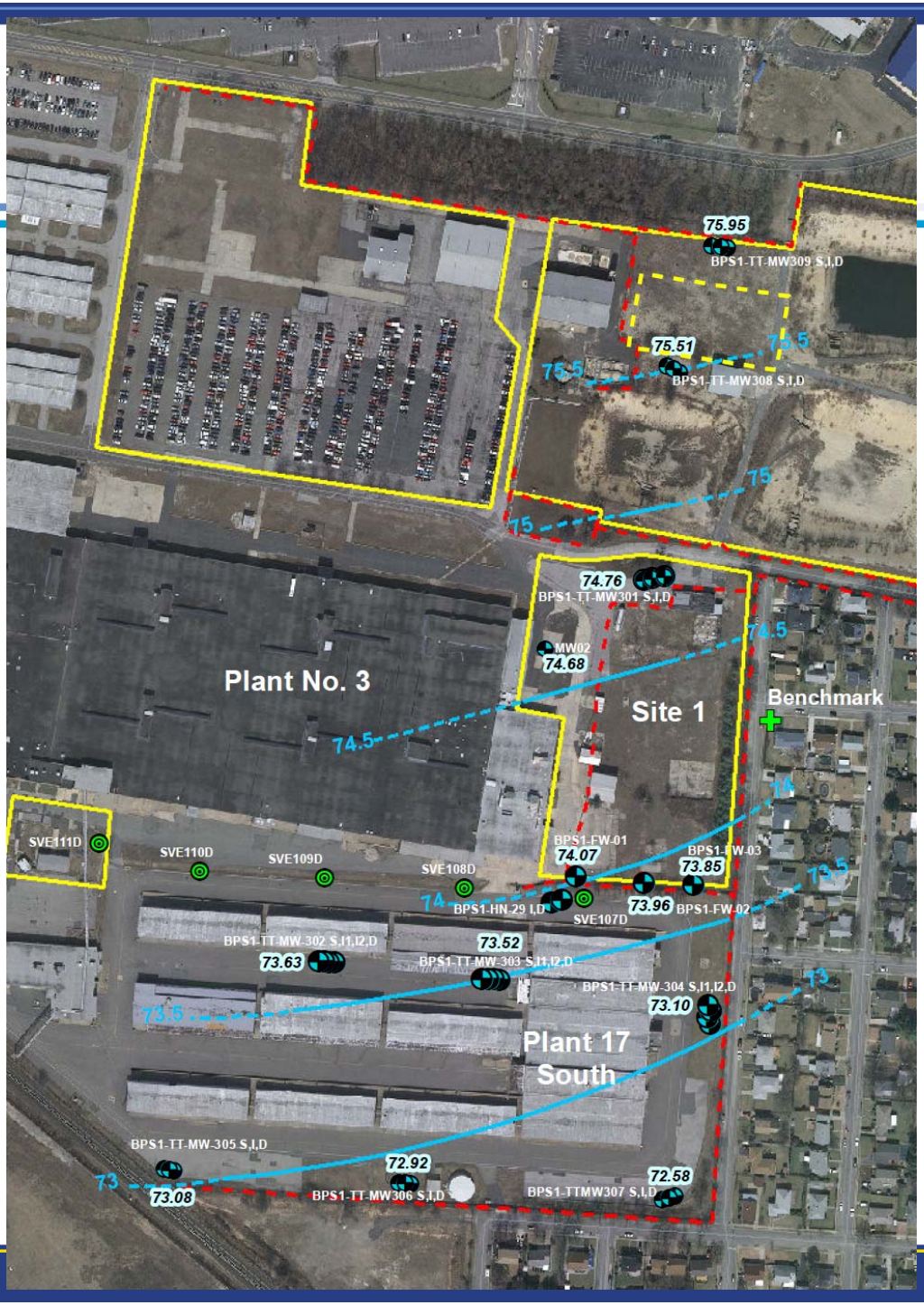
GROUNDWATER RESULTS

- Groundwater detections of PCBs (aroclor 1242 and 1248) in 30 of the 34 monitoring wells.
- Average concentration of PCBs in groundwater at 1.14 µg/L (NYSDOH MCL is 0.5 µg/L)
- Total chromium detected above MCL of 100 µg/L in one monitoring well (MW304I2 at 200 µg/L).
- Chromate detected at a maximum concentration of 181 µg/L
- Elevated detection of TCE at 3,900 µg/L in MW305I, southwestern most monitoring well cluster.

PCB INVESTIGATION UPDATE

- **Well Location Map**

Shallow Potentiometric Surface Map



Intermediate Potentiometric Surface Map

PCB INVESTIGATION UPDATE

- Based on the groundwater sampling results, additional investigation of groundwater is needed.
- Data gaps in soil delineation of PCBs at Site 1 have been identified after review of historical and recent soil sampling results
- Interim Report and SAP Addendum for Site 1 soils will be submitted in April - May 2012
- Objectives: Address data gaps observed in Site 1 soils, further delineate extent of PCB-contaminated soil, and support remedial alternative analysis

Proposed soil Borings for Soil Delineation

Proposed Soil Borings for Soil Delineation

PCB INVESTIGATION – FUTURE WORK

- Soil investigation planned for Spring/Summer 2012 to address data gaps and complete soil delineation.
- Submit Data Summary Report to present new groundwater results and recommendations for further groundwater investigation.
- Two additional rounds of groundwater sampling planned for 2012 (summer and winter events)
- Remedial Investigation Report and Feasibility Study planned for 2013

QUESTIONS ?

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Restoration Advisory Board (RAB) Meeting

GM-38 Area Groundwater Treatment Plant and Site 1 Soil Vapor Extraction Containment System Operation

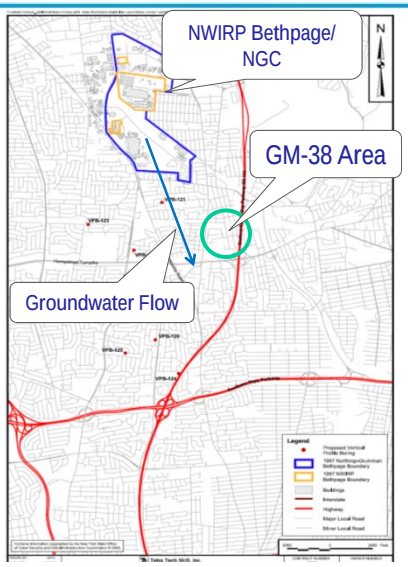
Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage
April 4, 2012

Presentation Agenda

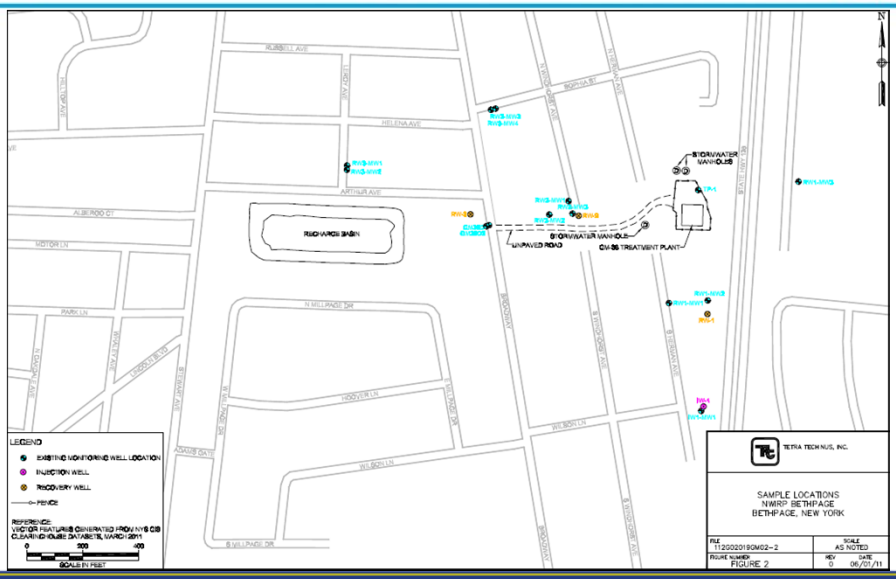
- GM-38 GWTP
  - o Overview
  - o Operational Activities
  - o GWTP performance and future activities
- Site 1 SVECS
  - o Overview
  - o Operational Activities
  - o System performance and future activities

GM-38 Project Overview

- Purpose: Treat an area of higher concentration volatile organic compound (VOC)-impacted groundwater.
- System started operation in October 2009.
- Extracts 45 million gallons of water and 200 pounds of VOCs per month.



GM-38 REMEDIAL ACTION



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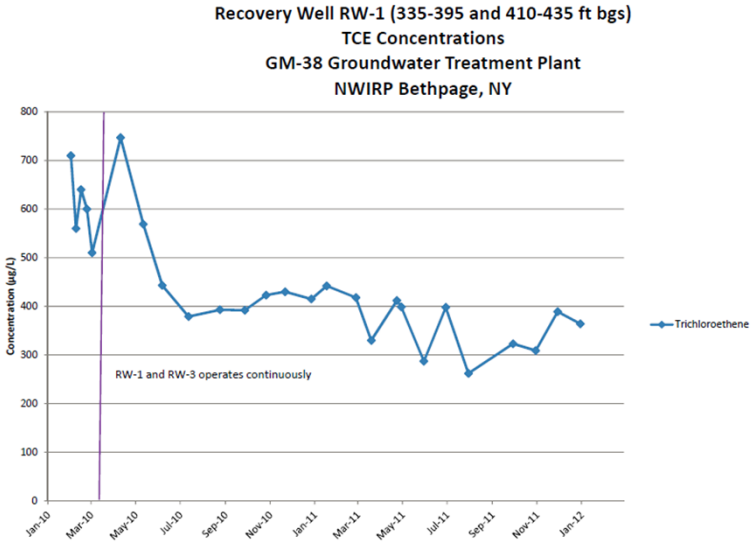
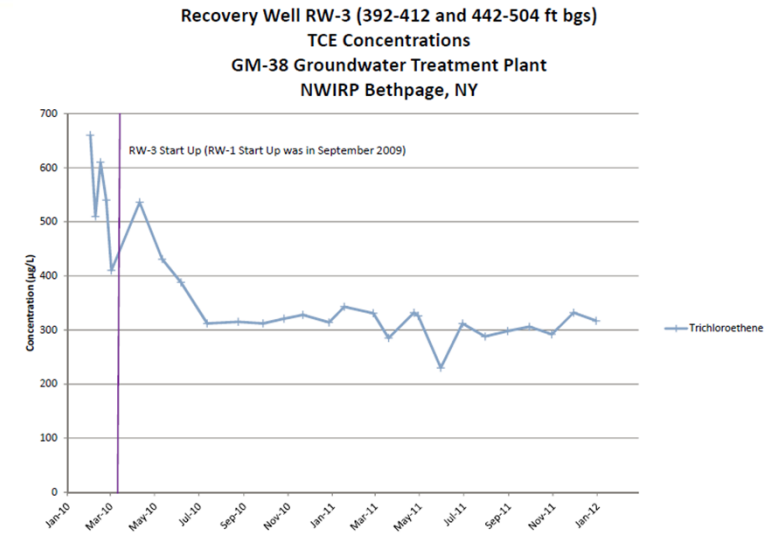


GM-38 REMEDIAL ACTION



GM-38 GWTP Operational Activities

- Quarterly groundwater samples collected from eight monitoring wells (29-30 November 2011 and 7-8 March 2012).
- Performed routine change out of vapor phase granular activated carbon (VGAC) (3-5 January 2012).

GM-38 GWTP Performance and Future Activities

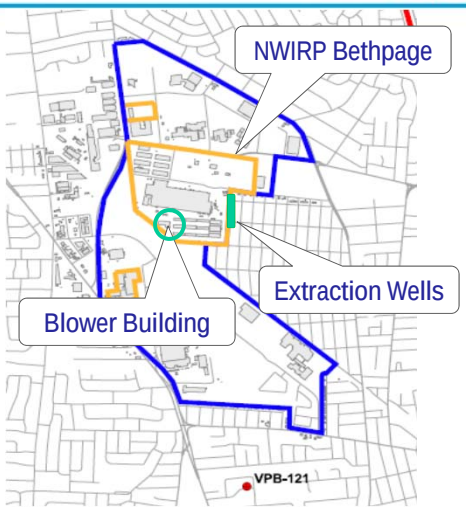
- Plant operates in compliance with air and SPDES permit guidelines.
- Runtime is above 95% with minimal downtime due to power outages and scheduled maintenance.
- Approximately 1,225 million gallons of water treated through March 2012.
- Collect monthly air and water compliance samples.
  - Submit monthly O&M compliance reports.
- Collect quarterly groundwater samples of surrounding monitoring wells.
  - Submit quarterly operations reports.

GM-38 GWTP Performance and Future Activities

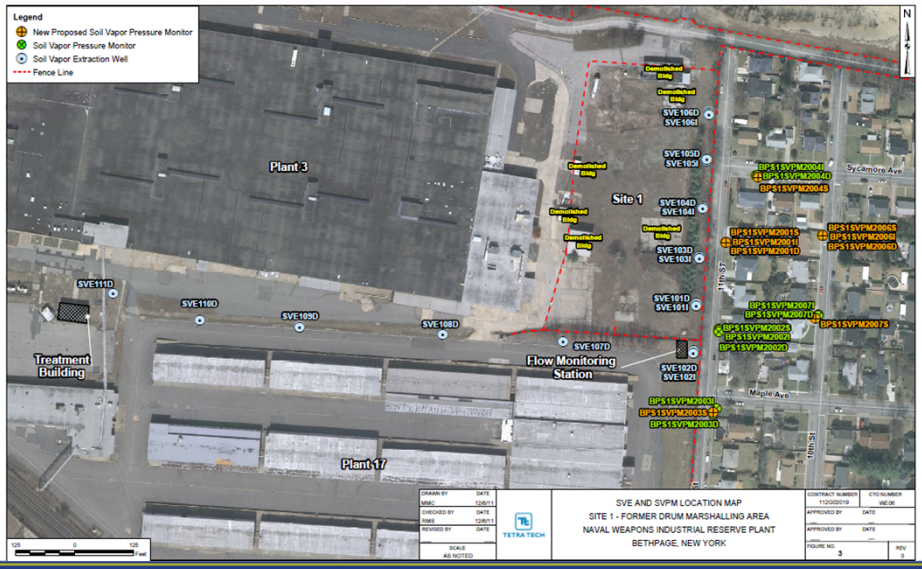
- System is expected to operate until approximately 2014.
- Optimization activities are ongoing
  - Improve performance
  - Evaluate capture zone
  - Reduce operating cost

SITE 1 SVECS Project Overview

- Purpose: Prevent offsite migration of Site 1 VOC-impacted soil gas and cleanup offsite soil gas.
- System started operation in January 2010 and continues to operate.
- Extracts approximately 500 cubic feet per minute of soil gas from 12 wells located along Site 1 fence line. Five additional extraction wells added in October 2011 to address potential VOCs under Plant No. 3 and South Warehouse.



SITE 1 SVECS Offsite Soil Gas Monitoring



SITE 1 SVECS Operational Activities

- Five additional SVE wells installed (16-22 October 2011). Brought on-line in mid-November 2011.
- Routine change out of vapor phase granular activated carbon (VGAC) performed (4 January 2012).
- Quarterly vapor samples collected from 12 SVE wells (10 February 2012).

SITE 1 SVECS Performance and Future Activities

- Plant operates in compliance with air permit guidelines.
- Runtime is above 95% with minimal downtime due to power outages and scheduled maintenance.
- Collect monthly air compliance samples.
- Collect quarterly air samples of SVE wells.
    - Submit quarterly operations reports.

SITE 1 SVECS Performance and Future Activities

- System is expected to operate until approximately 2015.
- Optimization activities are ongoing
    - Improve performance
    - Evaluate capture zone
    - Reduce operating cost

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Restoration Advisory Board (RAB) Meeting

OU2 - Offsite Groundwater Investigation and Public Water Supply Design

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

April 4, 2012

OU2 GROUNDWATER INVESTIGATION - PURPOSE

- Delineate groundwater contamination in areas south of NWIRP Bethpage
- Program consists of:
  - Vertical profile borings - used to quickly screen areas for the presence, depth, and concentration of contamination
  - Permanent monitoring wells - to confirm presence/absence of contamination and develop trends

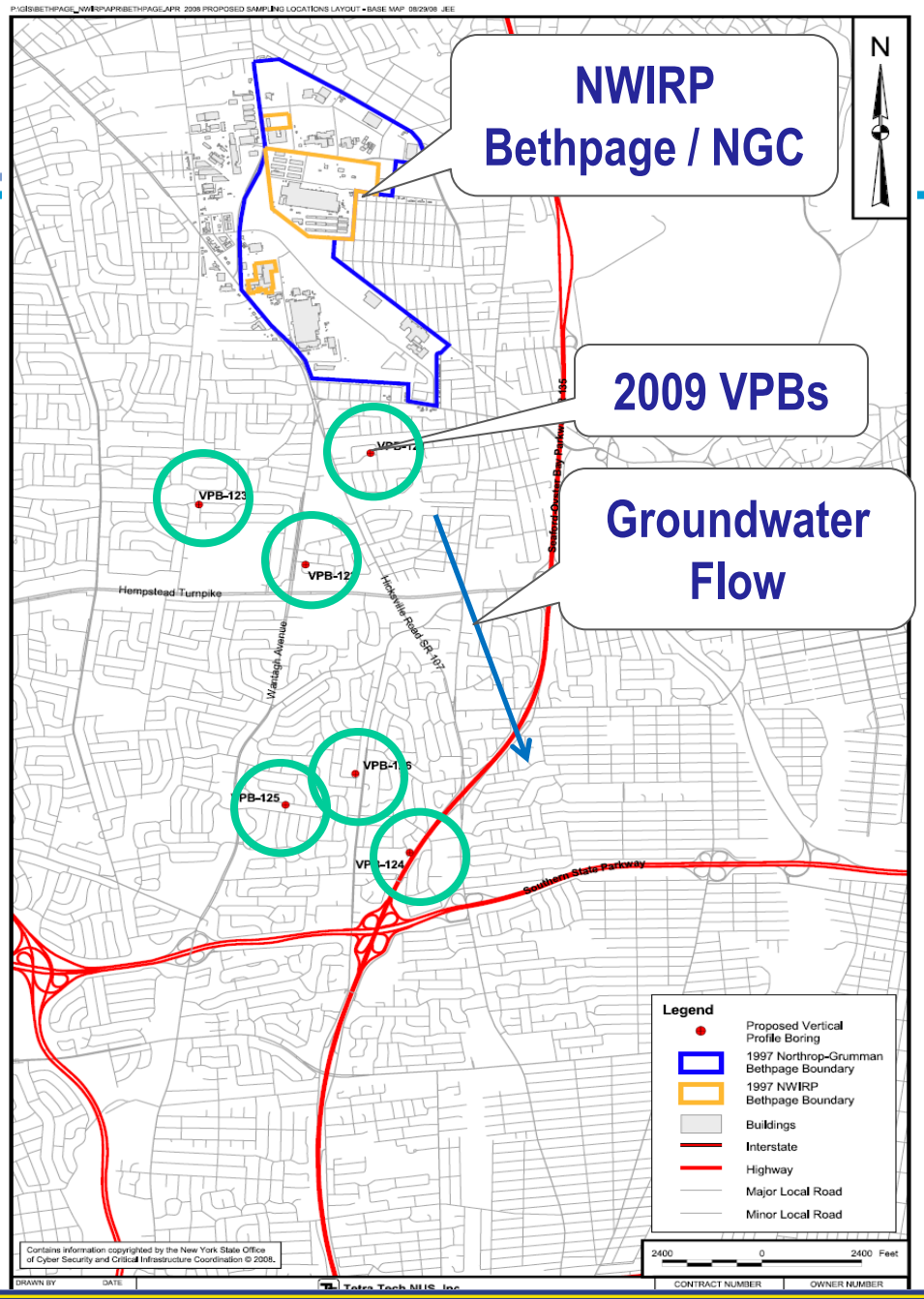
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM

- A vertical profile boring is a 12-inch diameter hole drilled into the ground. At select depths, the drilling is stopped, a device is lowered to depth, and a sample of the water is collected
- The borings will extend to the Raritan Clay Layer at a depth up to 860 to 1000 feet below ground surface
- 36 groundwater samples are collected per boring and analyzed for VOCs

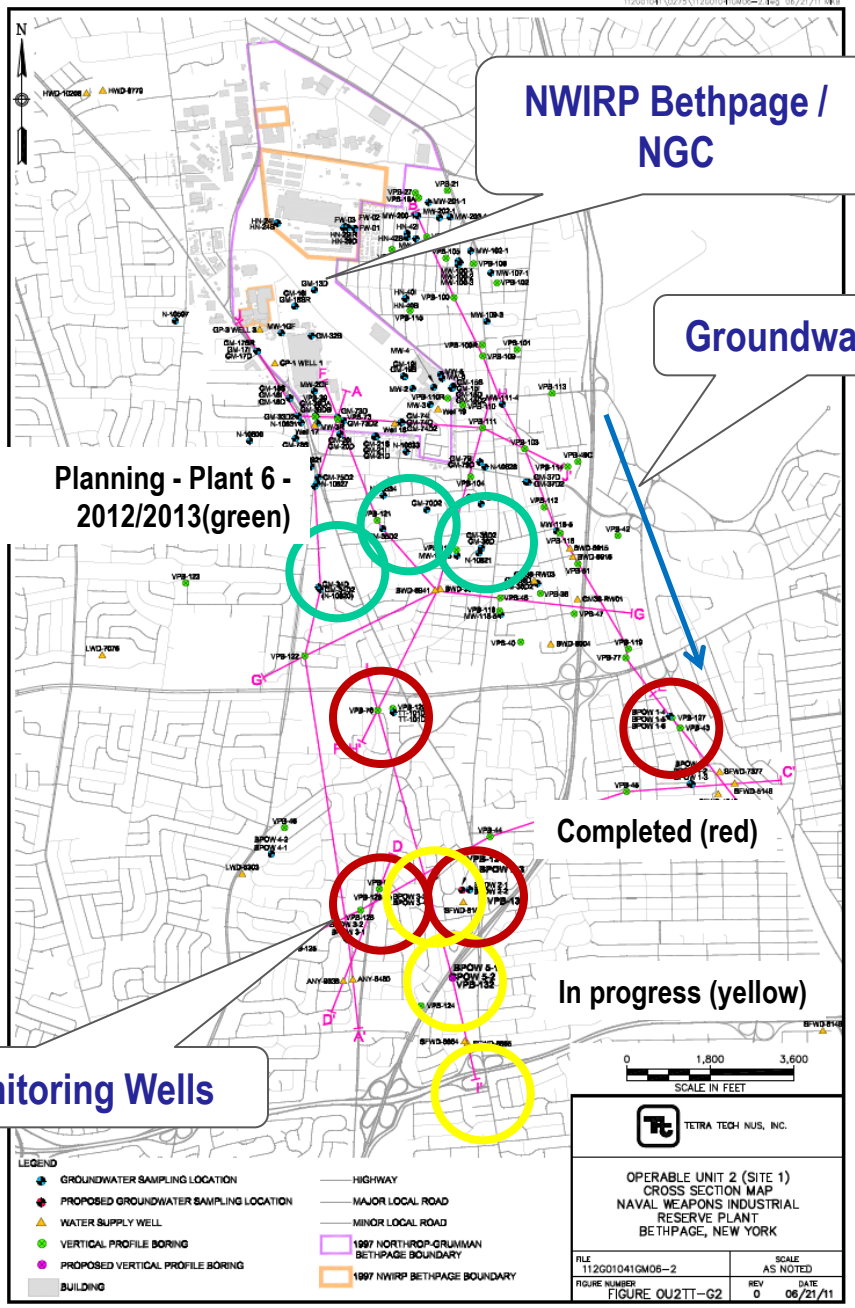
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM (Cont.)

- Each boring requires 4 to 6 weeks to complete
- Six locations were completed in 2009
- Addition borings and monitoring wells are currently being installed through 2012
  - Since Oct 2010, six borings and nine wells completed and one boring and three wells in progress
  - Five borings and two wells are planned for 2012/2013

2009 Vertical Profile Borings



2010 to 2013 Vertical Profile Borings and Monitoring Wells



OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM

OU 2 PUBLIC WATER SUPPLY DESIGN

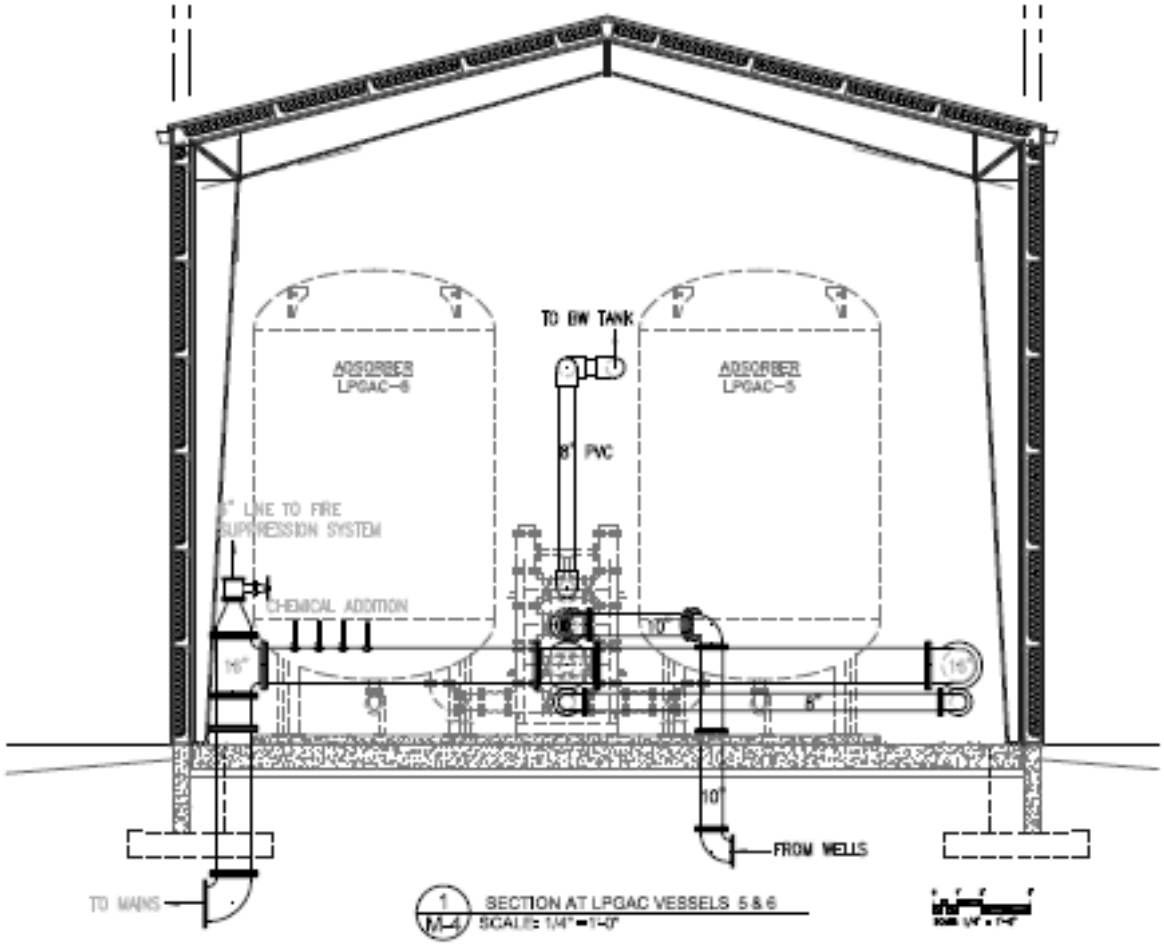
- Navy is currently designing a full-scale Granular Activated Carbon treatment system for an offsite Public Water Supply
  - Design started in 2009 and will be completed in 2012
  - Working with TOH and DOH
  - Construction is anticipated to start in mid-2012
- Navy also design and is currently constructing an interim treatment
  - Construction started in March 2012 (Tank foundation)
  - The GAC equipment is scheduled for delivery on April 4th
  - Installation, tie-in, disinfection, backwash, and startup and testing to last through April, with an anticipated final startup date of April 27th (pending final approvals by DOH)

OU 2 PUBLIC WATER SUPPLY DESIGN

Full Scale Liquid Phase Granular Activated Carbon System

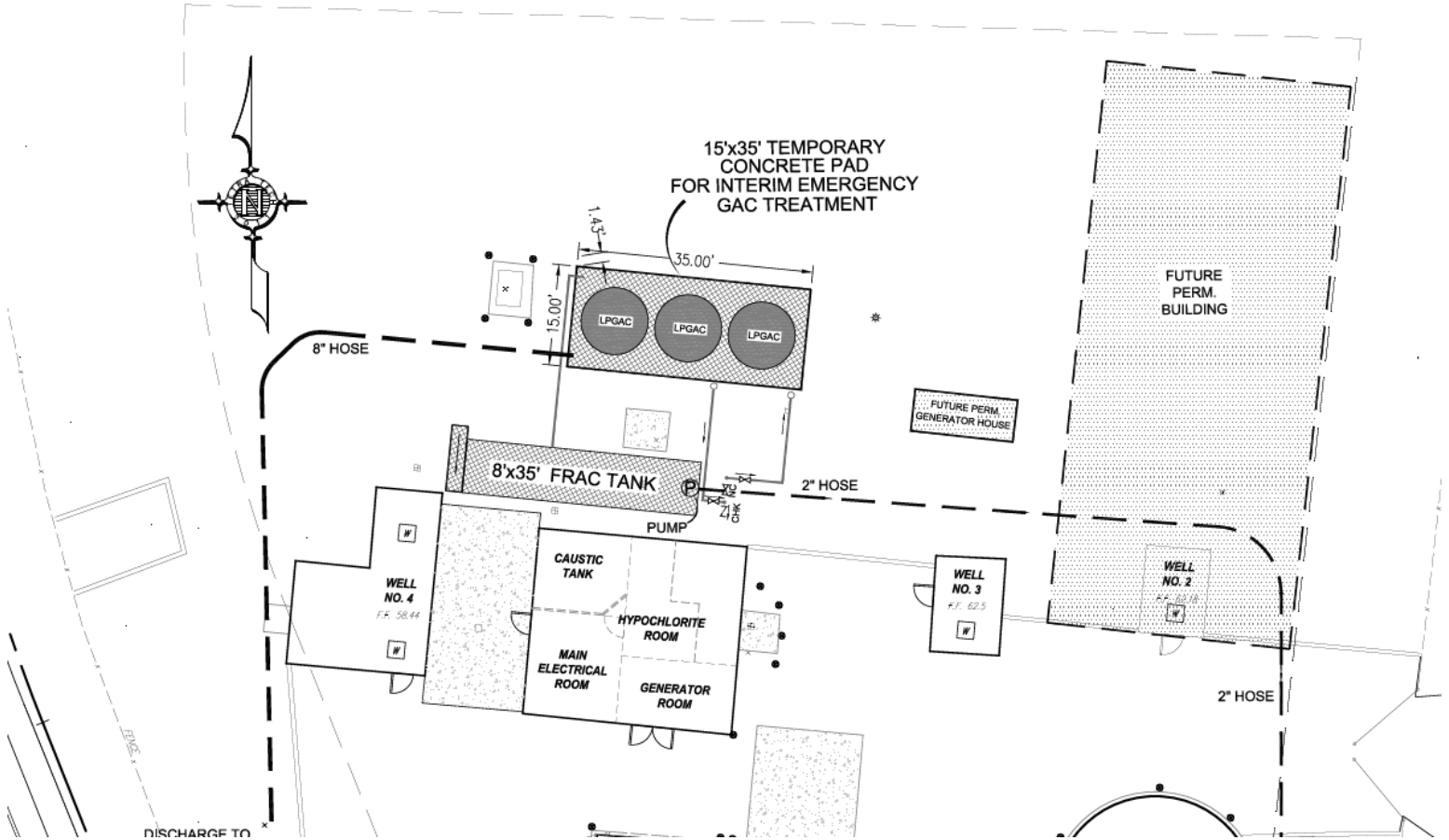
OU 2 PUBLIC WATER SUPPLY DESIGN

Full Scale Liquid Phase Granular Activated Carbon System



OU 2 PUBLIC WATER SUPPLY DESIGN

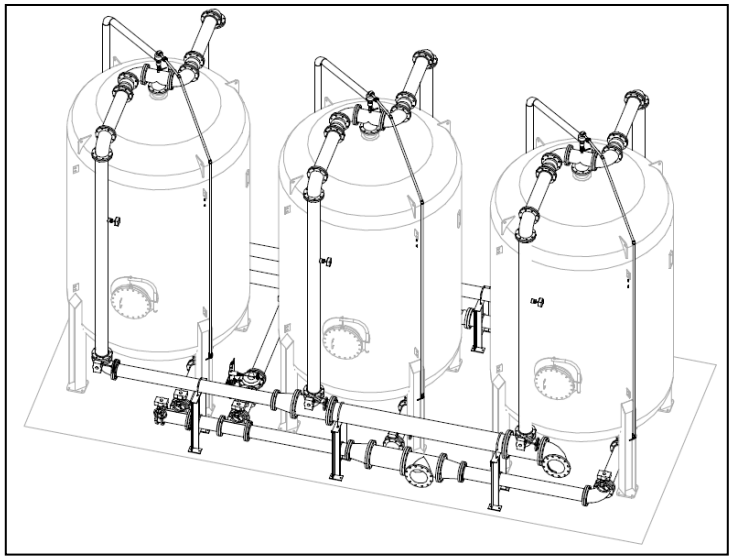
Interim Liquid Phase Granular Activated Carbon System



OU 2 PUBLIC WATER SUPPLY DESIGN

Interim Liquid Phase Granular Activated Carbon System

Concrete Pad Pour



GAC Unit Schematic

OU2 ACTIVITIES

Questions