DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, MID-ATLANTIC
9742 MARYLAND AVENUE
NORFOLK, VIRGINIA 23511-3095

IN REPLY REFER TO:
5090
OPNEEV/15/lbf
22 Dec 2008

MEMORANDUM

FOR THE MEMBERS OF THE RESTORATION ADVISORY BOARD (RAB) FOR THE INSTALLATION RESTORATION PROGRAM AT NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

Enclosed is the meeting minutes from the Restoration Advisory Board (RAB) meeting that was held at the Bethpage Community Center on Wednesday, November 5, 2008. The Navy requests that you review the meeting minutes and provide comments to either myself or the RAB Community Co-Chair, Mr. Jim McBride. These minutes will be discussed and approved at the next RAB meeting

If you have any questions regarding these minutes, please contact me at 757-444-0781 or by e-mail at lora.fly@navy.mil.

Sincerely,

LORA B. FLY
Remedial Project Manager
By direction of the
Commanding Officer

Enclosure: (1) Meeting Minutes from the 5 Nov 2008 RAB Meeting

Distribution:
NAVFAC Mid-Atlantic, Lora Fly
NAVAIR, Richard Smith
NYSDEC (Albany), Steve Scharf
NYSDEC (Albany), Henry Wilkie
NYSDEC (Stony Brook), Walter Parish
NYSDOH, Jacquelyn Nealon
NYSDOH, Joseph DeFranco
USEPA Region II, Carol Stein
USEPA Region II, Carla Struble
Town of Oyster Bay, Hon. John Venditto
Town of Oyster Bay, Richard Pfaender
Town of Oyster Bay DPW, Matt Russo
Tetra Tech NUS, Dave Brayack
ECOR Solutions, Al Taormina
Northrop Grumman, John Cofman
ARCADIS, David E. Stern
Community Co-Chair, Jim McBride
Community RAB Member, Mike Grello
Community RAB Member, Hon. Ed Mangano
Community RAB Member, Linda Mangano
Community RAB Member, Ed Resch
Community RAB Member, Charles Bevilacqua
Community RAB Member, Roy Tringali
Community RAB Member, Rosemary Styne
Community RAB Member, Eugenia Mazzara

Non-RAB Member Mailing List
Residence in Attendance

RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), BETHPAGE
BETHPAGE COMMUNITY CENTER, BETHPAGE, NEW YORK
WEDNESDAY, NOVEMBER 5, 2008

The twenty-second meeting of the Restoration Advisory Board (RAB) was held at the Bethpage Community Center. Meeting attendees included representatives from the Navy (Lora Fly), New York State Department of Environmental Conservation (NYSDEC) (Steven Scharf), Town of Oyster Bay (Rich Pfaender), RAB community members (Charles Bevilacqua, Rosemary Styne, and Roy Tringali), Tetra Tech Inc. (David Brayack, Debbie Cohen, Robert Sok, Stavros Patselas, and Edward Urbanek), ECOR Solutions, Inc. (Al Taormina), and ARCADIS (David Stern). Six Bethpage residents also attended the meeting. The meeting sign-in sheet is provided as Attachment 1.

WELCOME AND AGENDA REVIEW

The Navy representative, Ms. Lora Fly, welcomed everyone to the RAB meeting and introduced the meeting agenda. The agenda for the meeting is included as Attachment 2. The presentations for the meeting are included as Attachment 3.

COMMUNITY UPDATE AND REVIEW AND APPROVAL OF MEETING MINUTES

Ms. Fly asked whether the RAB members received the July 2008 minutes, which were distributed in October 2008, and asked whether there were questions or comments on the minutes. There were no questions or comments. Ms. Fly then asked whether the RAB members could approve the July 2008 meeting minutes. The RAB motioned to approve these meeting minutes, the motion was seconded, and the July 2008 meeting minutes were approved.

A motion was made to include Bethpage resident Eugenia Mazzara, a regular attendee at the Bethpage RAB meetings, as a community member on the RAB. The motion was seconded, and Ms. Mazzara was made a RAB community member.

BUDGET UPDATE

Ms. Fly provided information on the funding status for fiscal year (FY) 08 and FY09 for NWIRP Bethpage projects. Details on funding are provided in the presentation in Attachment 3. Ms. Fly mentioned that funding for FY09 includes money to install and operate a soil vapor extraction

system to address soil vapor concerns along the property boundary at Site 1 and to conduct a pilot study for solidifying Site 1 PCB-contaminated soil in a concrete matrix to prevent PCBs from leaching from soil to groundwater. In addition, funding is included for RAB and community meetings.

SITE 1 SOIL VAPOR STUDY INFORMATIONAL SESSION AND INVESTIGATION

Mr. Robert Sok (Tetra Tech Inc.) provided a presentation on the status of the Site 1 soil vapor study. The presentation is included in Attachment 3. Treatment of volatile organic compound (VOC) contamination in soil and groundwater at Site 1 was conducted from 1998 to 2002. However, based on recent New York State Department of Health (NYSDOH) vapor intrusion guidelines, the Navy is evaluating potential offsite migration of VOCs through the soil gas. In addition, the Navy will evaluate indoor air quality in offsite residential housing. As discussed at the April and July 2008 RAB meetings, the first step in the evaluation showed there was a potential for offsite migration of contaminated soil gas. The extent of contaminated offsite soil gas was uncertain. In September 2008, the Navy submitted a work plan for investigation of offsite soil gas and conducted the investigation in October 2008. The investigation included soil gas sampling in the neighborhood adjacent to Site 1 along 10th and 11th Streets and Sycamore and Maple Avenues. Soil cores were drilled to approximately 50 feet below ground surface (bgs), subsurface geological conditions were observed, and soil gas samples were collected. Mr. Sok showed photographs of the soil coring and sampling equipment. The Navy expects to receive the analytical results of the soil gas sampling in January 2009. The Navy is also anticipating conducting a pilot test for soil gas containment along the property in January 2009. The pilot test will support the design of a full-size treatment system.

Questions and discussion related to the investigation included the following:

- In answer to a question on the geological conditions observed, Mr. Sok explained that subsurface soil was mostly sand. However, a clay layer at about 45 feet bgs was observed along 11th Street.
- In answer to a question on the size of the boring for soil gas sampling, Mr. Sok indicated that the cores were 2¾ inches in diameter. Larger-size (12 inch) diameter borings, used for very deep soil profiles for the offsite groundwater investigation, were not used for the soil gas investigation.

- Several residents of 11th Street expressed concerns related to the indoor residential sampling. The Navy explained that six homes on 11th Street between Sycamore and Maple were identified for sampling and the Navy is contacting the residents to arrange access for the sampling. The sampling will consist of one outdoor air sample, one indoor air sample, and one indoor soil gas sample. The indoor soil gas sample will be collected beneath the concrete slab in the basements of the homes. The diameter of the hole for collecting this sample will be ½ inch. The Navy will identify a location that will be the least conspicuous.

The Navy has established a website specific to the Site 1 Soil Gas activities. The residents can check this website for results and the status of activities.

OFFSITE GROUNDWATER INVESTIGATION – GM-75 WORK PLAN

Mr. David Brayack (Tetra Tech) discussed the progress on the offsite groundwater investigation. The presentation is included in Attachment 3.

As discussed at the July 2008 RAB meeting, the onsite groundwater containment system, which has been in operation for approximately 10 years, prevents contamination from leaving the property boundary. However, before the containment system began operation, some of the groundwater contamination migrated beyond the property boundary. The offsite groundwater contamination plume is generally widespread and contains low-level VOC contamination. There are a few distinct areas with greater levels of contamination (hot spot areas). The GM-38 area is one hot spot area where the extent of contamination was defined. Contamination in this area is deep. Construction of a groundwater remediation system is underway. The extent of contamination in the other area, GM-75, has not been adequately defined. An investigation in the GM-75 area will be conducted to delineate the area with trichloroethane (TCE) concentrations greater than 1,000 micrograms per liter (µg/L) in groundwater. The Navy will use deep vertical profile borings to screen locations to determine the depth and concentration of contamination in groundwater and to locate permanent monitoring wells. The work plan for the investigation was submitted in October 2008. The Navy is preparing property access agreements for the six planned vertical profile borings. Drilling of each boring takes 4 to 6 weeks to complete; therefore, appropriate arrangements with the property owners need to be in place before drilling can begin. The Navy is anticipating the access arrangements will be in place shortly so that the investigation can begin in December 2008 or early January 2009.

The Navy is also working with the water supply district to ensure protection of the drinking water supply. Mr. Brayack explained that the groundwater concern for the GM-75 area is VOC contamination in the deep subsurface; surficial soil and groundwater contamination is not a concern for this area. Mr. Scharf (NYSDEC) explained that the VOC contamination in groundwater in this area was from solvents used for cleaning equipment and machine parts as part of past operations.

GM-38 CONSTRUCTION STATUS

Mr. Stavros Patselas (Tetra Tech Inc.) provided an update on the status of construction of the GM-38 Area Groundwater Remediation Project since the July 2008 RAB presentation. The presentation is included in Attachment 3.

The presentation included a summary of the treatment system design and well installations and an update on construction activities and schedule. The purpose of the treatment system is to remove VOCs from groundwater. The primary treatment process will be air stripping followed by carbon polishing. The Navy will split the discharge of treated water between injection wells and a county recharge basin. For discharge to either injection wells or recharge basin, treated water needs to meet NYSDEC treatment standards before discharge. Vapor from the air stripping process will be treated with carbon prior to venting to the atmosphere. Mobilization for system construction began in June 2008, and will continue through winter 2008-2009. Plant start-up is scheduled for spring 2009, and operations are expected to continue for 10 years. After construction is complete, the Navy will solicit a qualified contractor to operate the system. The system operation will be conducted in accordance with an operation and maintenance plan that a Navy contractor will prepare.

Mr. Patselas explained that construction is underway for the building that will house the treatment system. All equipment for the treatment system has been ordered and delivered; equipment can be seen in the construction area. The Navy is using various local subcontractors for construction of the building and treatment system. Since the end of October 2008, the Navy began providing overnight security at the construction site to prevent trespassers from entering the area. The Navy distributed leaflets to the neighborhood around the treatment system to provide information on the project and contact information (NYSDEC Citizen Participation Office and Navy Contract hotline number) for the community to use if there are any concerns with the

treatment system. Mr. Patselas showed photographs of the construction activities for the treatment system.

CLOSING REMARKS

Ms. Fly thanked everyone for coming to the meeting and asked whether there were any general questions. With no other questions or comments Ms. Fly proposed that the next RAB meeting be held on March 4, 2008. The next RAB meeting date was agreed upon and the meeting was adjourned.

ATTACHMENT 1

NOVEMBER 5, 2008 RAB MEETING SIGN-IN SHEET

22nd RAB Meeting for NWIRP Bethpage
November 5, 2008
Sign-In List

Name	Address (if interested in being on mailing list)	Organization	How Did You Hear of Meeting?
Robert Sok		Tetra Tech NUS	
Stavros Patselas		TEEC	
Joyce MARINACCIO (Joanne Perrio)		- resident on 11th St	(from Community RAB mem. member)
Ed URBANEK		TTEC	
Steven Scharf		NYSDEC	
DAVID STERN		ARCADIS	NGC
Rosemary Styne		RAB.	
Gene Mazzara		Resident	Eugenia Mazzara
Roy Surgah		RAB	
J. Rulli		Resident	Maple & 11th
Denise Rulli		Resident	
Rich Pfaender		Town of Oyster Bay	

22nd RAB Meeting for NWIRP Bethpage
November 5, 2008
Sign-In List

Name	Address (if interested in being on mailing list)	Organization	How Did You Hear of Meeting?
Al Taormina		ECOR	
Debbie Cohen		TENUS	
CHARLES BEVILACQUA		RAB	
Lora Fig		NAVY	
LORRAINE SSONS			
David Brayack		TENUS	

ATTACHMENT 2

NOVEMBER 5, 2008 RAB MEETING AGENDA

Agenda

Restoration Advisory Board
Naval Weapons Industrial Reserve Plant Bethpage

November 5, 2008
Bethpage Community Center, Bethpage, NY
7:00 p.m.

Welcome and Agenda Review
Lora Fly, NAVFAC Mid-Atlantic

Meeting Minutes
All Members

Technical Progress

Budget Update
Lora Fly

Site 1 Soil Vapor Informational Session and Investigation
Rob Sok, Tetra Tech

Offsite Groundwater Investigation – GM-75 Work Plan
David Brayack, Tetra Tech

GM-38 Construction Status
Stavros Patselas, Tetra Tech

Closing Remarks
Lora Fly

Presenters will be available after the program for questions.

ATTACHMENT 3

NAVY AND TETRA TECH PRESENTATIONS

NAVFAC MIDLANT, NORFOLK, VA

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK INSTALLATION RESTORATION PROGRAM

BUDGET UPDATE – FY-08 ACTUAL COSTS AND FY-09 EXECUTION PLAN

Restoration Advisory Board (RAB) Meeting

11/05/2008

NWIRP Bethpage FY-08 ACTUAL EXECUTION

PROJECT	*FUNDED*	*REMARKS*
GM-38 – Additional Plant Construction Cost	**$ 2,607,282**	**Construction underway**
GM-75 – Additional Vertical Profile Borings	**$ 740,407**	**Awaiting site access**
Site 1 – Soil Vapor Investigation, On Site and Off Site	**$ 181,230**	**On-site complete off-site underway**
Site 1 – Site Preparation for Soil Removal	**$ 302,289**	**Awarded to Small Business Contractor**
Site 1 – Technology Evaluation for Soils	**$ 20,899**	**Report complete sent to NYSDEC for comments**
TOTAL for FY-08 =	***$3,852,107***	

NWIRP Bethpage FY-09 PLANNED EXECUTION

PROJECT

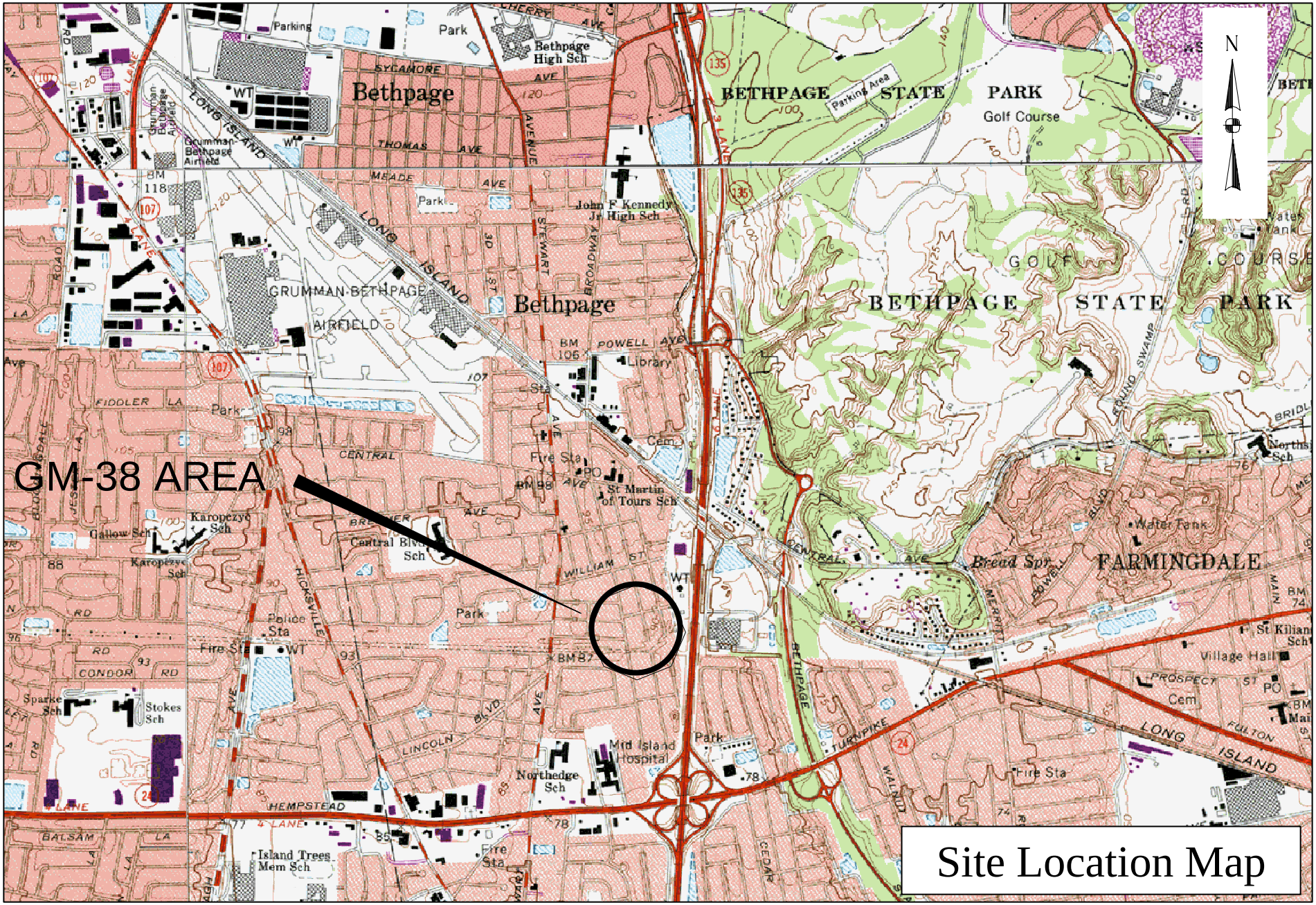
- **Site 1 Construction of Soil Vapor Extraction System**
- **GM-38 Addition Construction Cost**
- **Evaluation of Treatment System for Off-site Water Supply**
- **Community Support**
- **Site 1 Pilot Study for In-situ Soil Solidification of PCB-contaminated Soil**

Groundwater Remediation Project

Naval Weapons Industrial Reserve Plant
Bethpage, NY
GM-38 Area

Restoration Advisory Board Meeting

November 5, 2008


GM-38 AREA
N
Bethpage
BETHPAGE STATE PARK
Golf Course
GRUMMAN-BETHPAGE AIRFIELD
Bethpage High Sch
John F Kennedy Jr High Sch
Library
St Martin of Tours Sch
Central Blvd Sch
Karopczyc Sch
Gallow Sch
Police Sta
Fire Sta
Mid Island Hospital
Northedge Sch
Island Trees Mem Sch
Stokes Sch
Sparke Sch
FARMINGDALE
Bread Spr
Water Tank
Village Hall
St Kilian Sch
LONG ISLAND
HEMPSTEAD
TURNPIKE
BETHPAGE
CENTRAL
POWELL AVE
WILLIAM ST
HICKSVILLE
LINCOLN BLVD
CONDOR RD
FIDDLER LA
MEADE AVE
THOMAS AVE
SYCAMORE AVE
CHERRY AVE
BROADWAY
STEWART
BRIDLE
ROUND SWAMP
MERRITT
PROSPECT ST
FULTON
BALSAM LA
CEDAR
WALNUT
Site Location Map

Treatment System Design

- Mass Removal of Volatile Organic Compounds (VOC's) from groundwater
- Process Flow Rate = 1,100 gallons per minute (gpm)
- Max. Design Flow Rate = 1,375 gpm
- Pumping from two recovery wells (one located on Route 135 western right of way and other to be located on west side of Broadway)

Treatment System Design (cont'd)

- Primary treatment is Air Stripping
- Secondary treatment (polish) is Carbon Media
- Vapors from Air Stripping Treated w/ Carbon Media
- Split the discharge of treated water into one injection well and into a county recharge basin

Well Installations

- Currently installed (Nov 2004 - May 2005)
  - 2 Recovery Wells
  - 1 Injection Well
  - 6 Monitoring Wells
- To be installed during construction
  - 1 Recovery Well (RW-3)
  - 6 Monitoring Wells (may change)

Construction Status

- Construction Entrance is located at 100 Broadway between residences at 96 and 106 Broadway
- Dig Safe Notifications and Geophysical Surveys completed.
- Concrete – Sumps, Piers, and Grade Beam are complete
- Treatment equipment has been ordered with some on-site.
- Trenching to Recovery and Injection Wells has started.
- Utility and Process Piping entry points into building are complete.
- Electric Load letter submitted to National Grid
- Majority of local and state permits have been submitted

Construction Upcoming

- Set Large Equipment onto foundation with Crane
- Receive Building Material and Begin to Erect Structure (columns and framing)
- Interior Piping and Electric
- Install Fire Alarm and Security Systems
- Install and Test Instrumentation
- Test and Balance All Systems
- Site Restoration

Local Subcontractors

- Mechanical from East Setauket, NY
- Electrical from Medford, NY
- Building GC from Farmingdale, NY
- Erector from Huntington, NY
- QC Testing Lab from Bay Shore, NY
- Surveyor from Brookhaven, NY
- Third Party Consultant from Melville, NY

Esthetic Considerations

- Excavated soil used to construct berm
- Maintain as many existing trees as possible
- 100 new trees to be planted
- Building exterior to be a natural color
- Exterior building lights are motion activated
- No audible exterior alarms
- Chain link fence with privacy screening

Project Status

- Access agreements in place for Town, NYSDOT, and Long Island Railroad properties.
- Subcontracts issued to local companies for the building, mechanical, and electrical. Treatment equipment ordered.
- Continue building and treatment system construction.
- Obtain all outstanding necessary local permits and approvals for utility connections (i.e. sewer, water, electric, etc.)
- Finalize discharge details into county basin.
- Issue subcontract for driller.

Current Schedule

Milestones	Date
Mobilization & Start of Construction	June 2008
Set Large Treatment Equipment Into Place	November 2008
Install of Additional Wells	November 2008 – Winter 2009
Exterior Process Piping and Utilities	Oct 2008 – Feb 2009
Building Complete, Continue Interior Work	Winter 2008 - 2009
Treatment System Construction Complete	Spring 2009
Plant Start-Up, Calibration & Testing	Spring 2009

Community

- A project goal is to minimize disturbance to the surrounding neighborhood to best extent possible during the construction.
- NYSDEC Citizen Participation Office

  631-444-0350
- Project Hotline cell phone number is

  516-732-3393
- Periodic project updates will be delivered to the surrounding residences (approx. 200).
- Overnight security is present 7 days per week

NAVFAC
Naval Facilities Engineering Command

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Wrap-up

Questions?

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Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Restoration Advisory Board (RAB) Meeting

GM-75 Groundwater Investigation Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

November 5, 2008

GM-75 PROGRAM PURPOSE

- **Purpose: The GM-75 Program is being conducted to delineate an area of groundwater contamination that has TCE at a concentration greater than 1000 ug/l and is beyond the capture zone of the On-Site Groundwater Containment System.**
- **Program is also being used to investigate lower concentrations in groundwater that may impact water supplies.**
- **Vertical profile borings are used to quickly screen areas for the presence, depth, and concentration of contamination.**

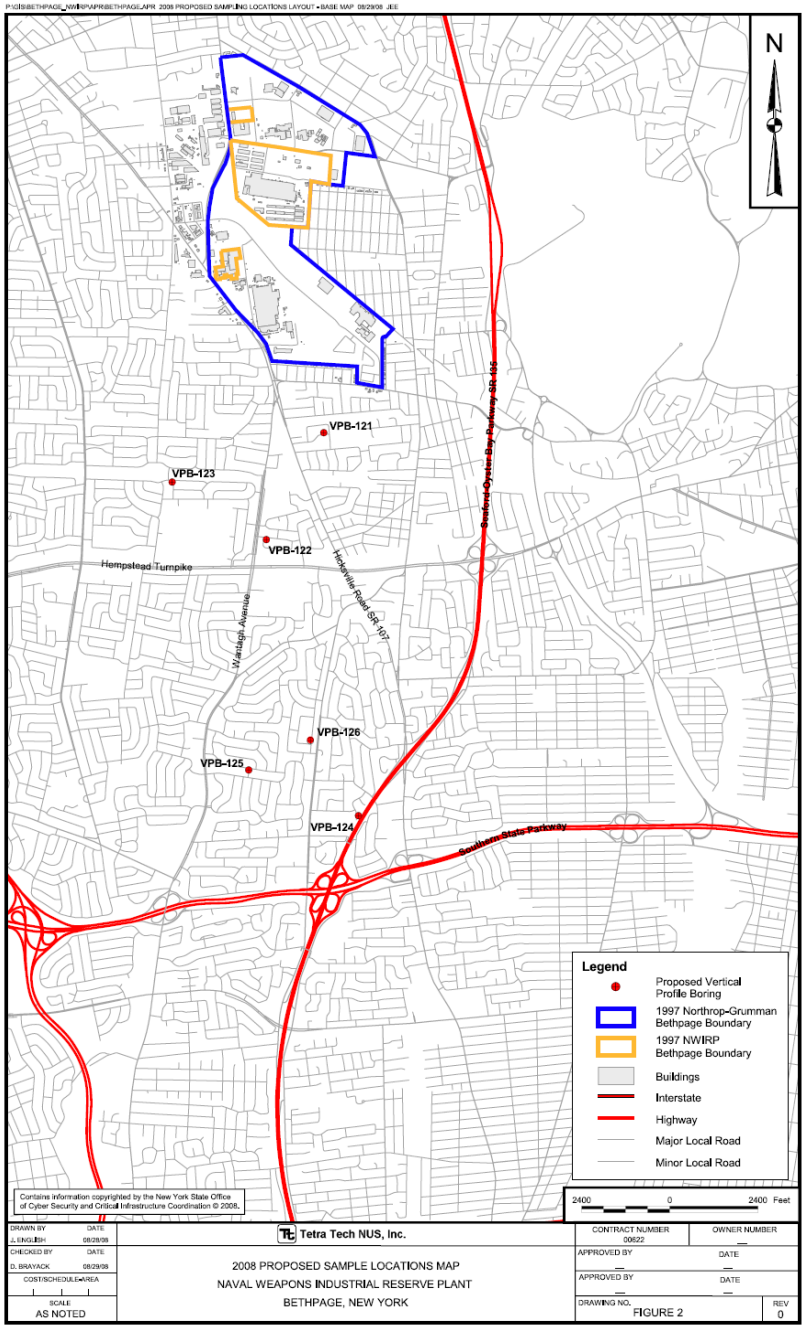
GM-75 VERTICAL PROFILE BORING PROGRAM

- A vertical profile boring is a 12-inch diameter hole drilled into the ground. At select depths, the drilling is stopped and a sampling device is lowered to the depth, and a sample of the water encountered is collected.
- The borings will extend to the Raritan Clay Layer at a depth up to 840 feet below ground surface.
- At 840 feet, the sampler is exposed to a pressure of 340 pounds per square inch (PSI).
- 36 groundwater samples will be collected per boring and analyzed for VOCs.

GM-75 VERTICAL PROFILE BORING PROGRAM (CONTINUED)

- Each boring requires 4 to 6 weeks to complete and costs $150,000 to $200,000.
- Based on results, permanent monitoring wells may be installed.
- Six locations have been selected, additional borings are planned.
- Pending property access agreements, work is scheduled to start December 2008.

GM-75 VERTICAL PROFILE BORING PROGRAM (CONTINUED)

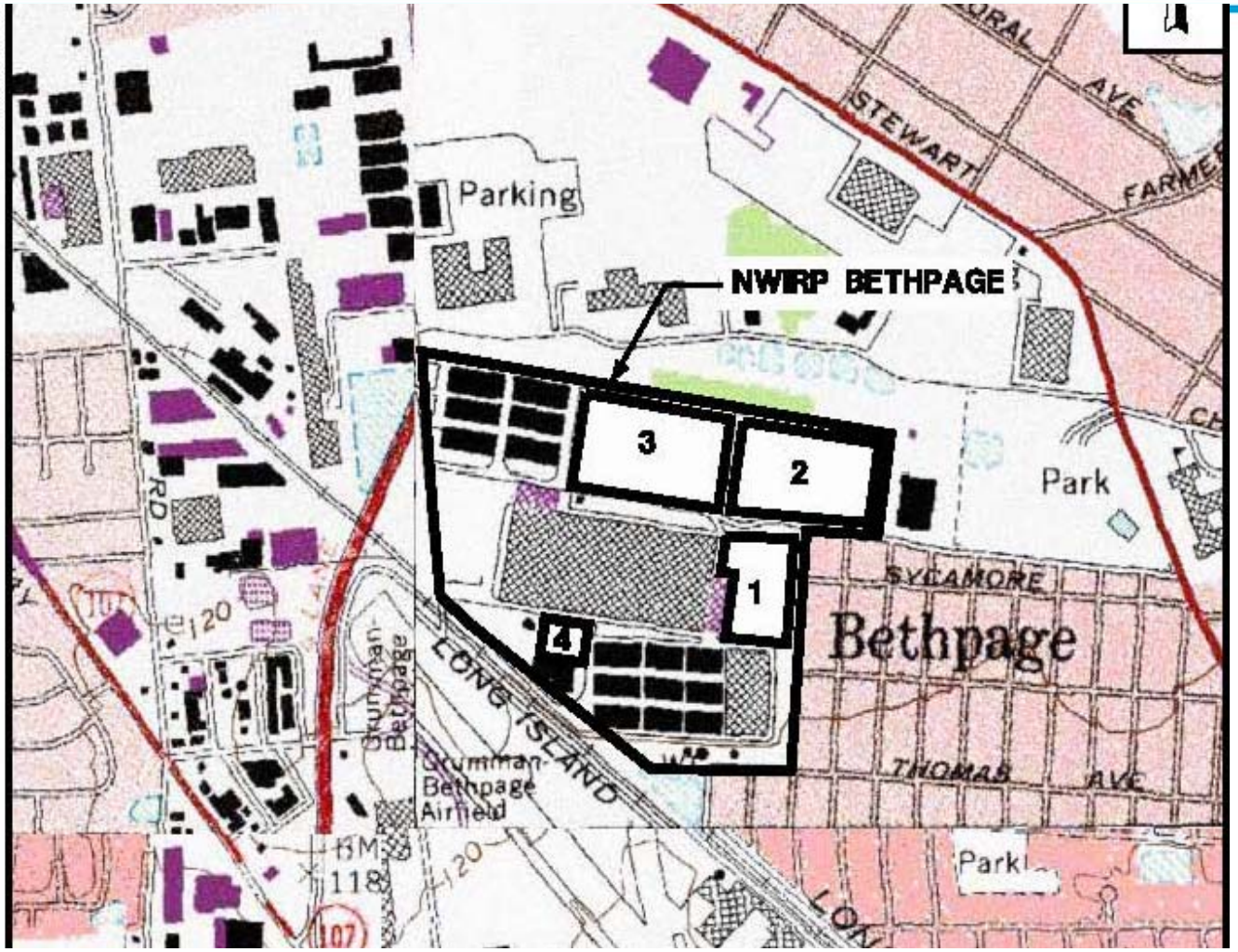


NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Restoration Advisory Board (RAB) Meeting

Site 1 – Soil Vapor Testing Update Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage November 5, 2008

SITE MAP

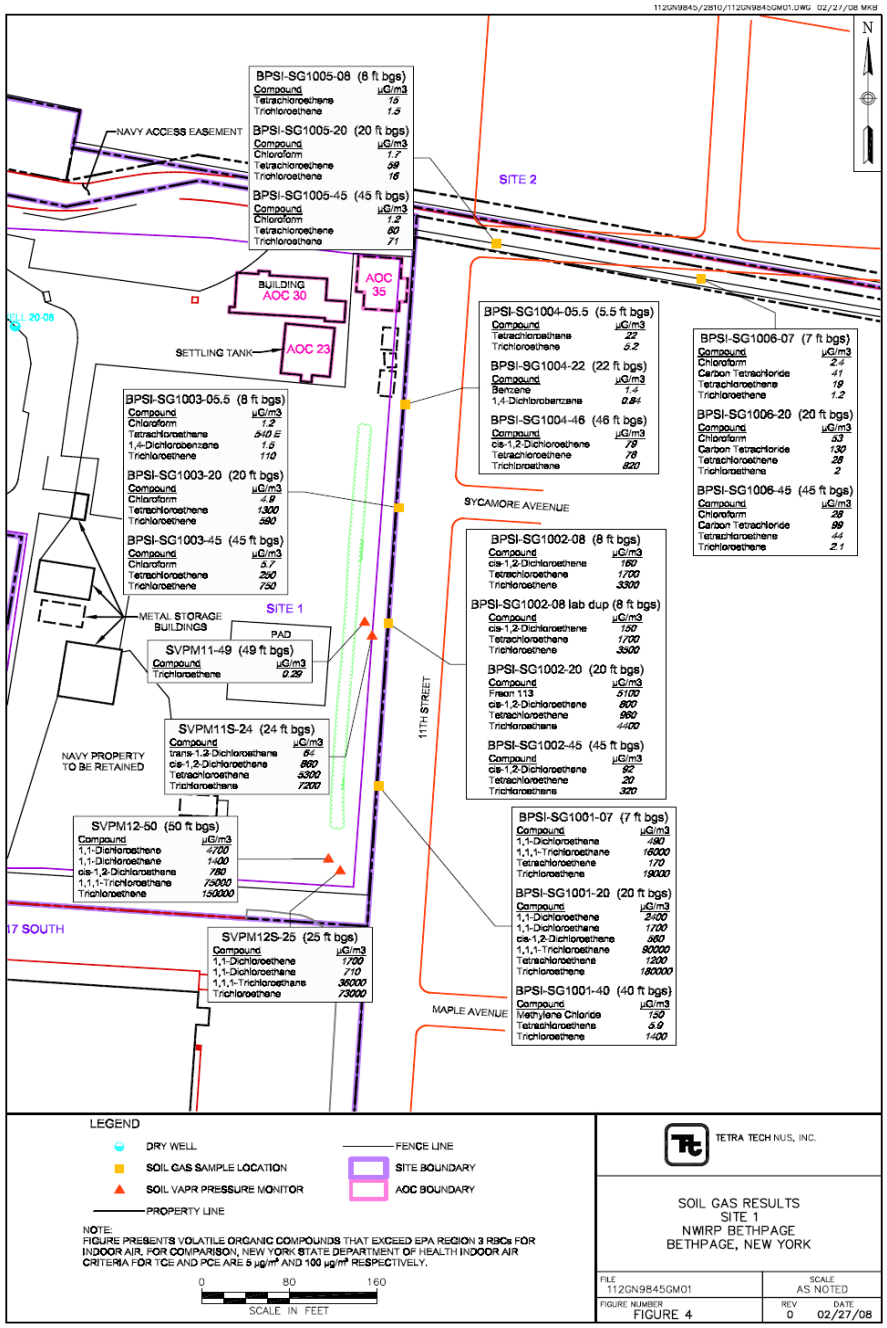


NWIRP BETHPAGE
3
2
1
4
Parking
Park
Bethpage
STEWART
SYCAMORE
THOMAS AVE
LONG ISLAND
Grumman-Bethpage Airfield
Park

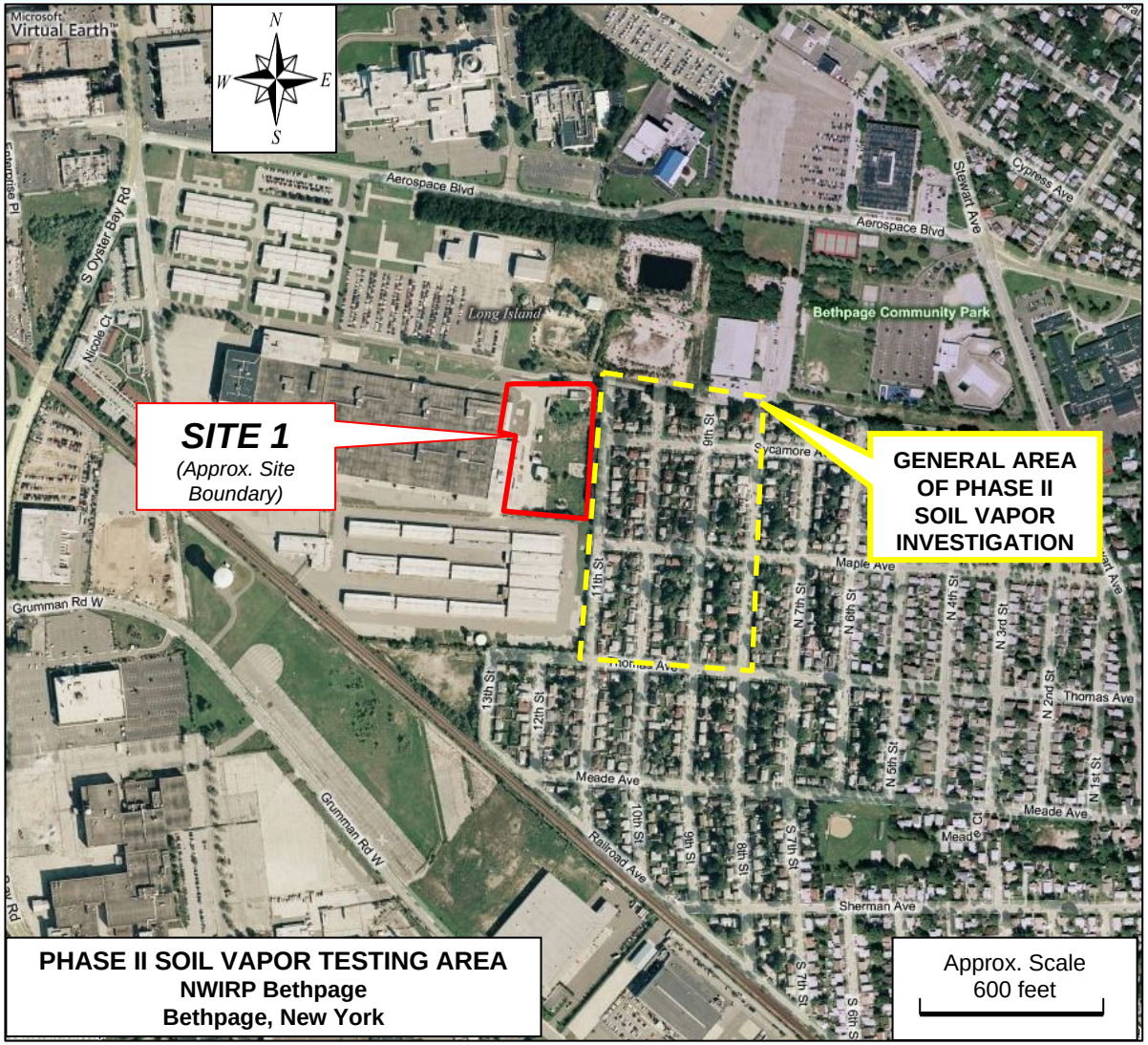
SITE 1 HISTORY – SOIL VAPOR

- October 2006 New York State Department of Health issued soil vapor intrusion guidelines – identifies soil vapor migration and potential intrusion into buildings as a potential concern.
- January 2008, Navy conducted a soil gas investigation at the eastern fence line of Site 1. Investigation was conducted to determine whether there was a potential for off site migration.
- Soil gas results indicated elevated levels at the fence line.
- September 2008 Work Plan developed for offsite soil vapor testing.
- October 2008 soil vapor testing conducted in the adjacent neighborhood along 10th and 11th Streets, and Sycamore/Maple Avenue (10-20-08 to 10-31-08).

SITE 1 SOIL GAS SAMPLING RESULTS (January 2008)

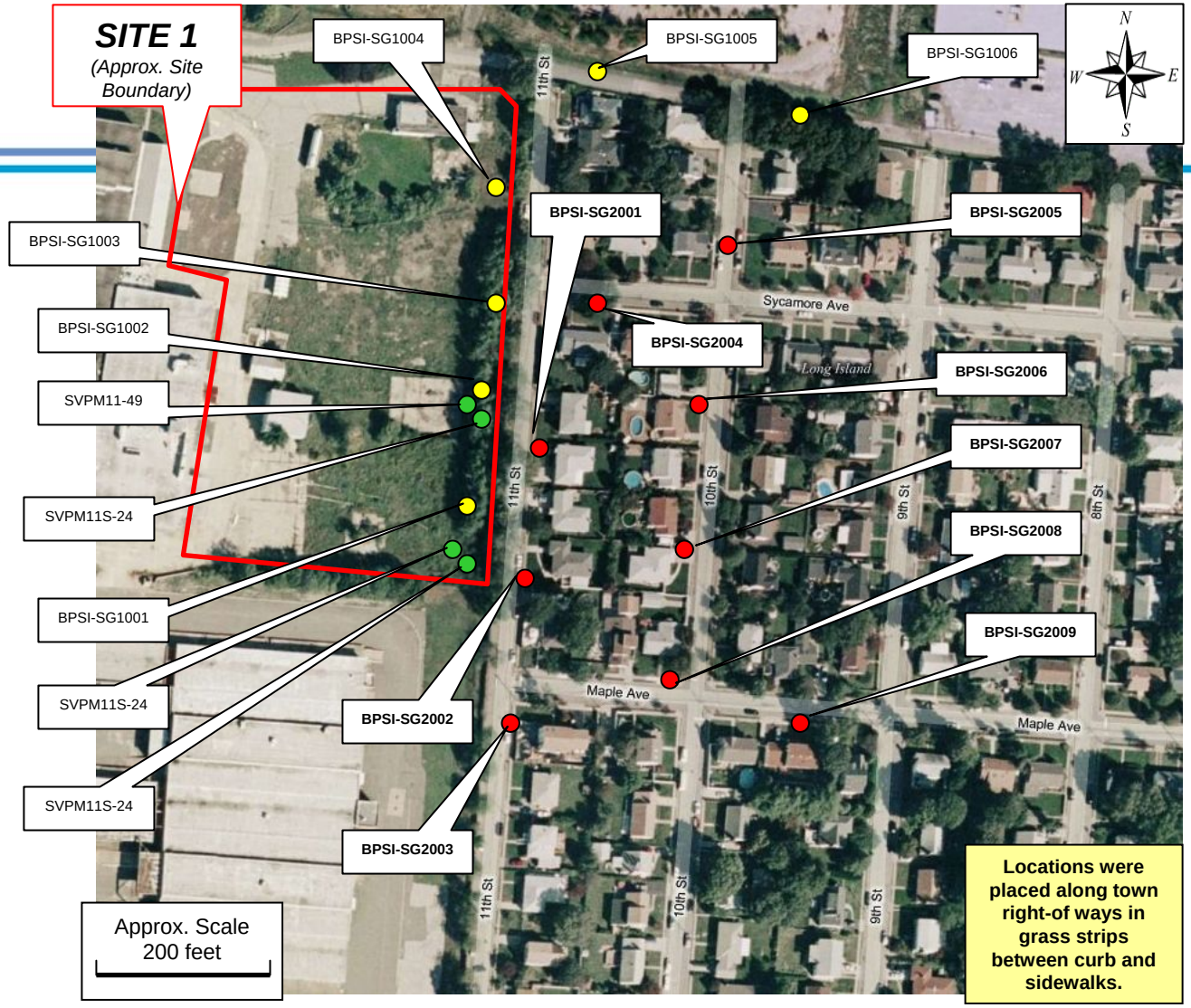


SITE 1 – PHASE II SOIL GAS INVESTIGATION



PHASE II SOIL VAPOR TESTING AREA
NWIRP Bethpage
Bethpage, New York

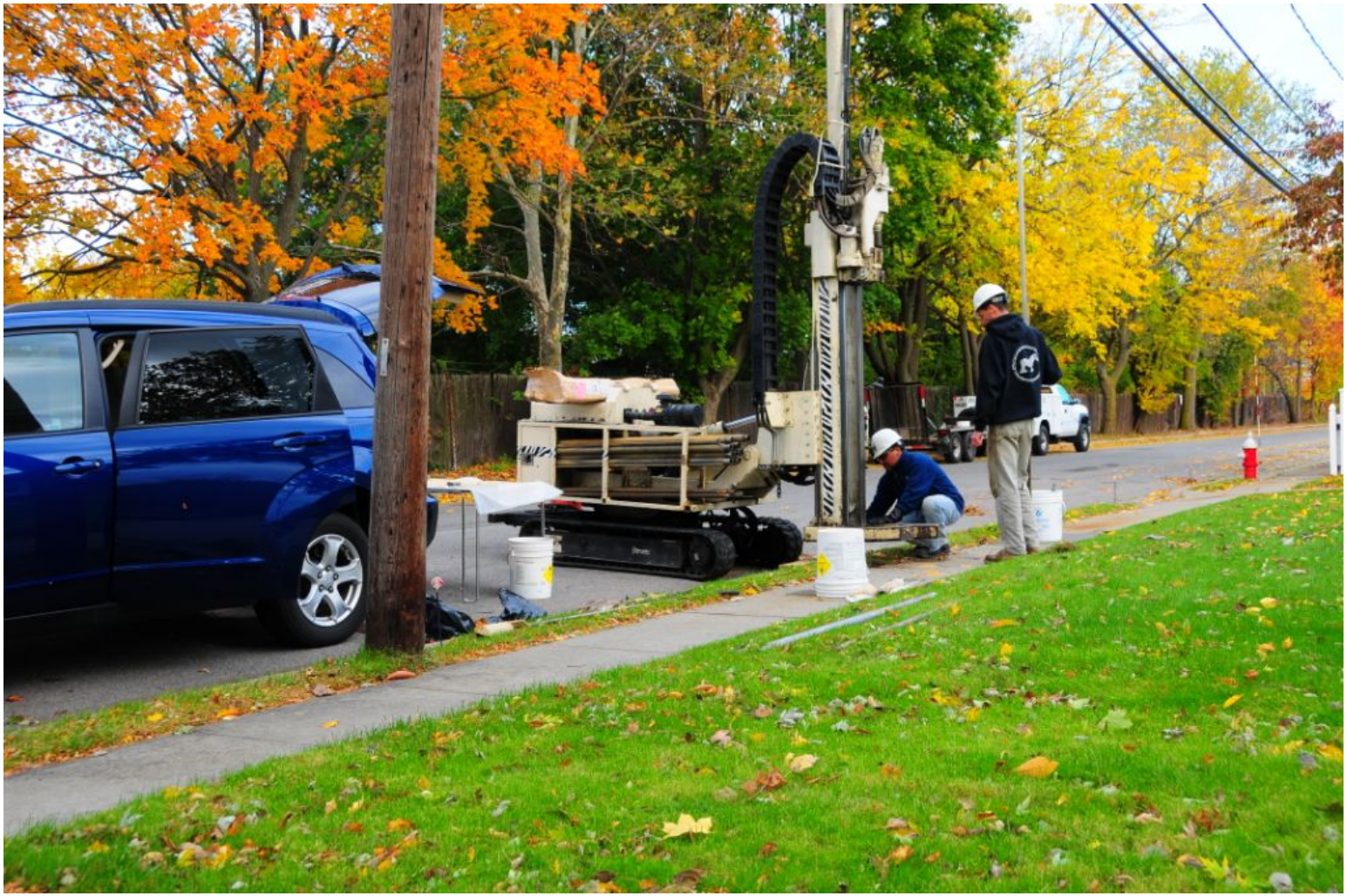
SITE 1 SOIL GAS SAMPLING LOCATIONS



Legend:
- Former Soil Vapor Sample Locations
- Former Soil Vapor Pressure Sample Locations
- Soil Vapor Sample Locations

Soil Gas Sampling Photos

Soil Gas Sampling Photos



Soil Gas Sampling Photos

Soil Gas Sampling Photos

SCHEDULE

- Field work was completed on October 31, 2008.
- Final analytical results from soil gas testing will be available in January 2009.
- Pilot test for SVE system at Site 1; pilot test anticipated to be conducted in early January 2009.
- Draft Work Plans are currently being developed for indoor air sampling (anticipated to be submitted in November 2008); Navy working on property access agreements with homeowners along 11th Street.
- Indoor air sampling tentatively scheduled to begin in mid-January 2009.