

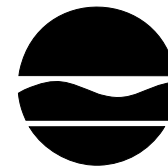
# Availability Session Remedial Investigation/Feasibility Study Bethpage Community Park

Bethpage Community Center  
June 8, 2006  
5:30 PM to 9:00 PM

***NORTHROP GRUMMAN***

A blue curved line graphic that starts under the 'N' and sweeps upwards and to the right, ending under the 'M'.

NEW YORK STATE  
DEPARTMENT OF



ENVIRONMENTAL  
CONSERVATION

# Why Are We Here Today?

- Northrop Grumman has signed a Consent Order to investigate contamination related to the Bethpage Community Park.
- The Work Plan for the Remedial Investigation (RI) / Feasibility Study (FS) has been approved by the NYS Department of Environmental Conservation (DEC):
  - RI field work has begun in the Park and on adjacent Northrop Grumman property.
  - RI field work will soon begin in nearby neighborhoods.
- A chronology of prior work and a description of work to be done for the latest phase of the RI will be provided today.
- Representatives of Northrop Grumman and NYS are here to answer questions regarding the proposed work.

# Parties Involved

- The NYS Department of Environmental Conservation (DEC) and Department of Health (DOH) are the participating regulatory agencies.
- Northrop Grumman, the United States Navy, and the Town of Oyster Bay are the identified potentially responsible parties.
- This session focuses on work to be performed pursuant to the Northrop Grumman RI/FS Work Plan.

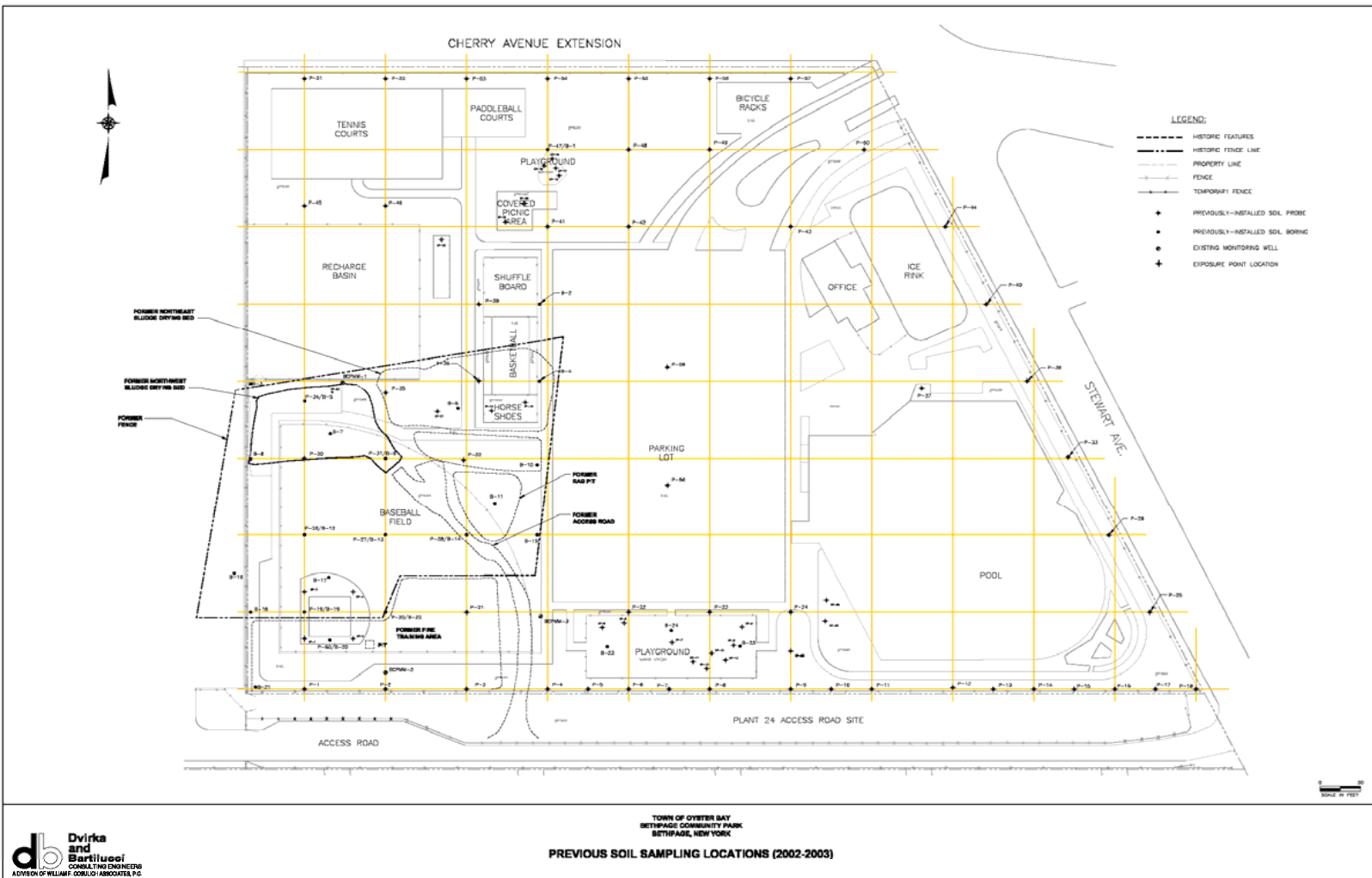
# Park Chronology

- 1962: Grumman donates property to Town for use as a park
- 2002: Northrop Grumman discovers contamination in the Park; public notified
- 2002 – 2003: Initial Investigation/Activities:
  - Soil investigations in the Park
  - Public availability sessions
- 2004 – 2005: Pre-Consent Order Investigations (Phase 1)
  - June 2004 to February 2005: Groundwater/Soil Gas
  - May to June 2005: Soil/Groundwater
- February to May 2005: Access Negotiations
- July 2005: Northrop Grumman signs RI/FS Consent Order

# RI/FS Work Plan Chronology

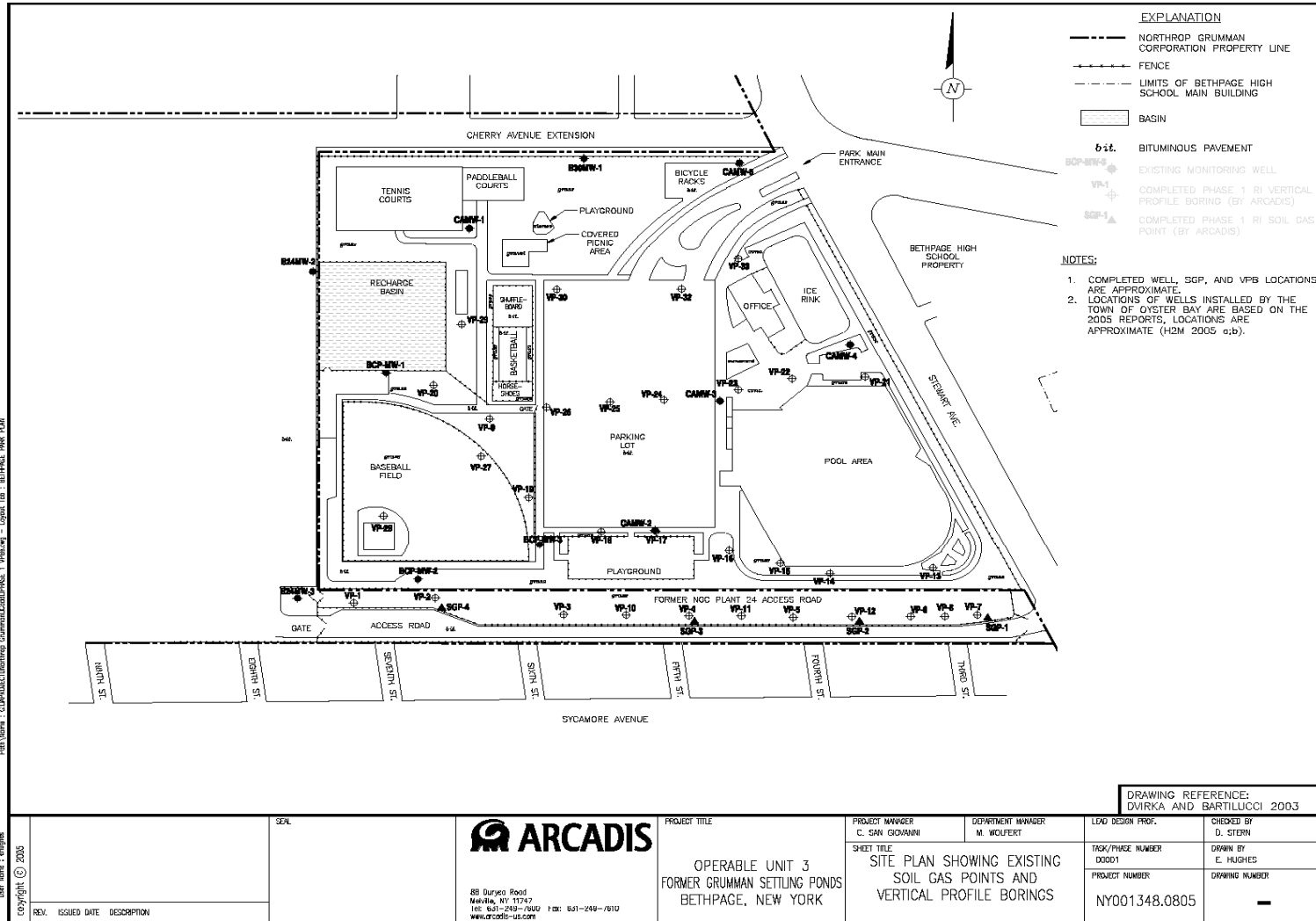
- July 2005: DEC requires preparation of a RI/FS Work Plan
  - August 18, 2005: Northrop Grumman submits Draft-Final RI/FS Work Plan to DEC
  - October 2005 to March 2006: DEC and Northrop Grumman evaluate and develop proposed scope of work
  - March 8, 2006: Northrop Grumman submits revised RI/FS Work Plan to DEC
  - March 31, 2006: DEC approves RI/FS Work Plan
- April 2006: Northrop Grumman begins field work for the next phase of the RI (Phase 2)

# Sampling Locations (2002-2003)



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# Sampling Locations (2004-2005)



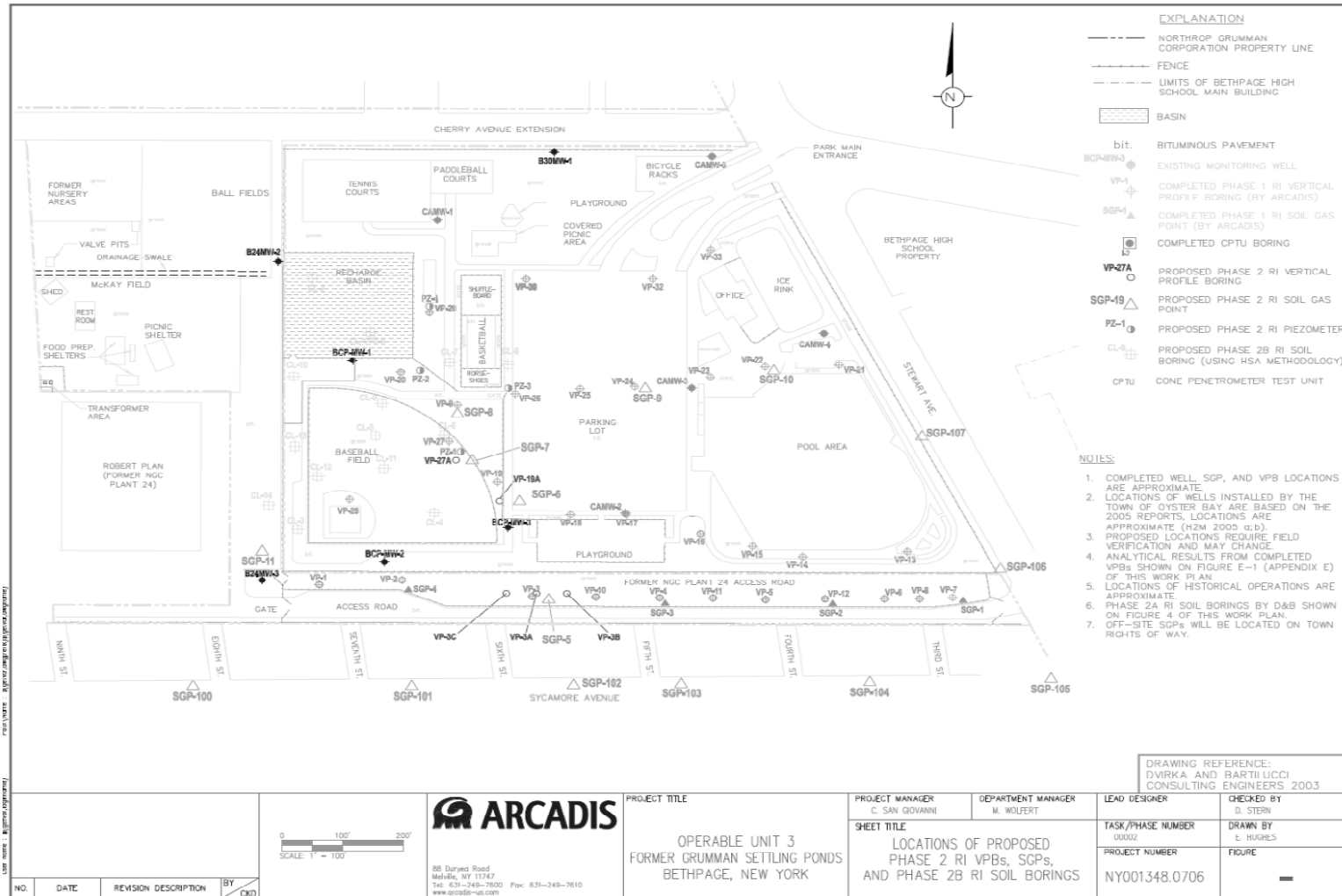
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# What Will We Be Doing in the Park During Phase 2?

- Surveying for buried utilities and structures
- Soil sampling and analysis
- Soil gas sampling and analysis
- Shallow groundwater sampling and analysis
- Well installation, sampling, and water analysis
- Digging test pits, as needed

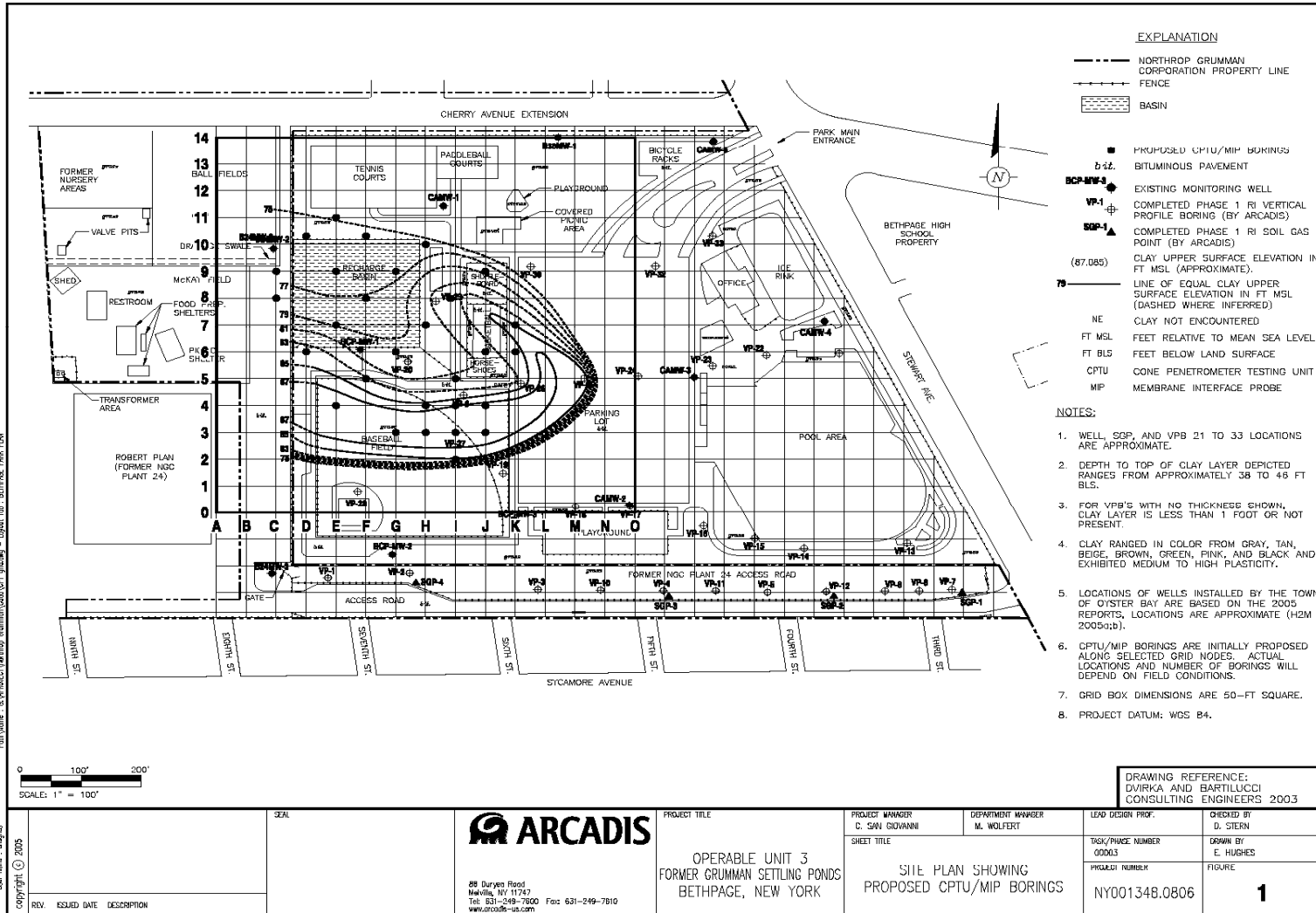


# Proposed Drilling Locations (1)



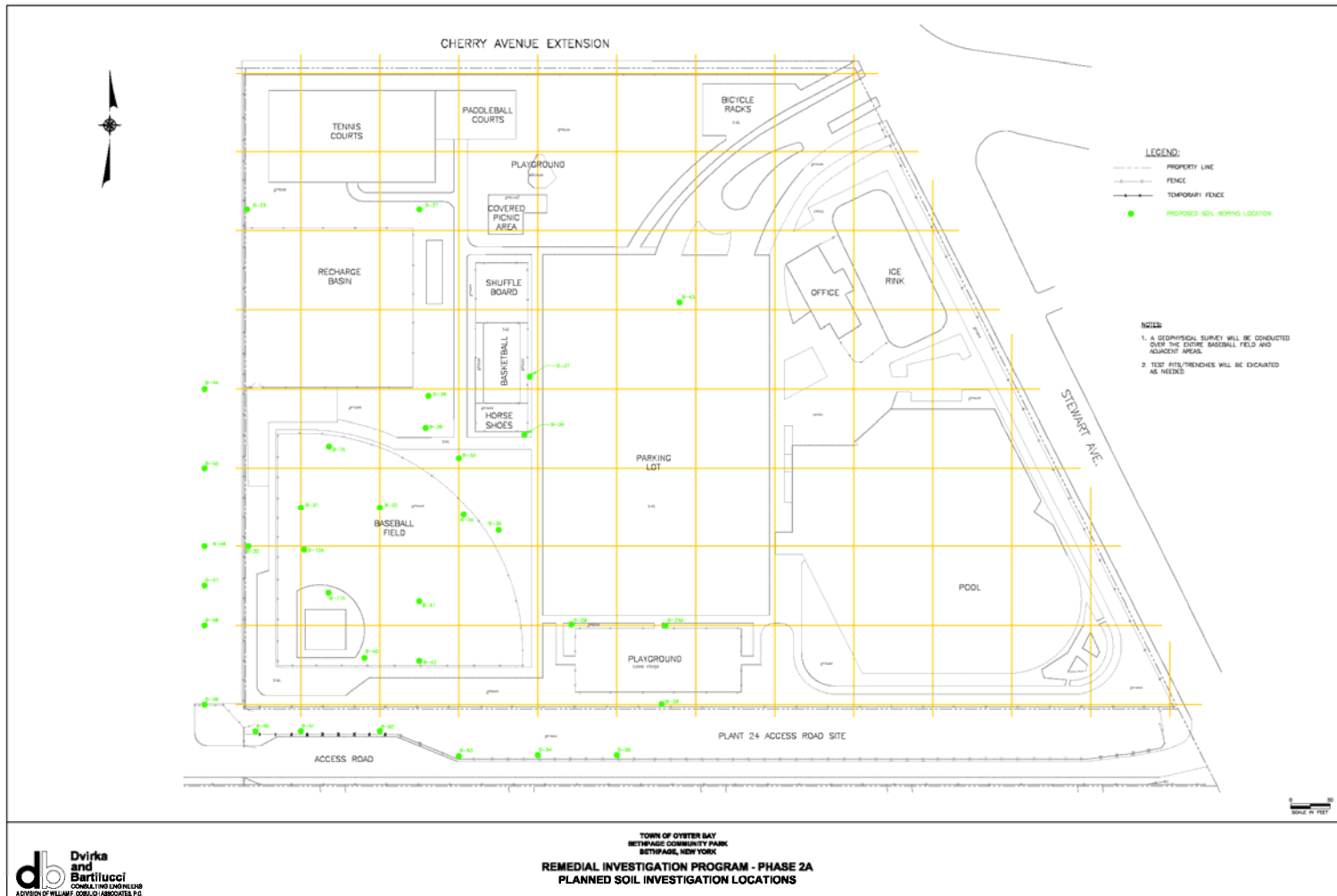
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# Proposed Drilling Locations (2)



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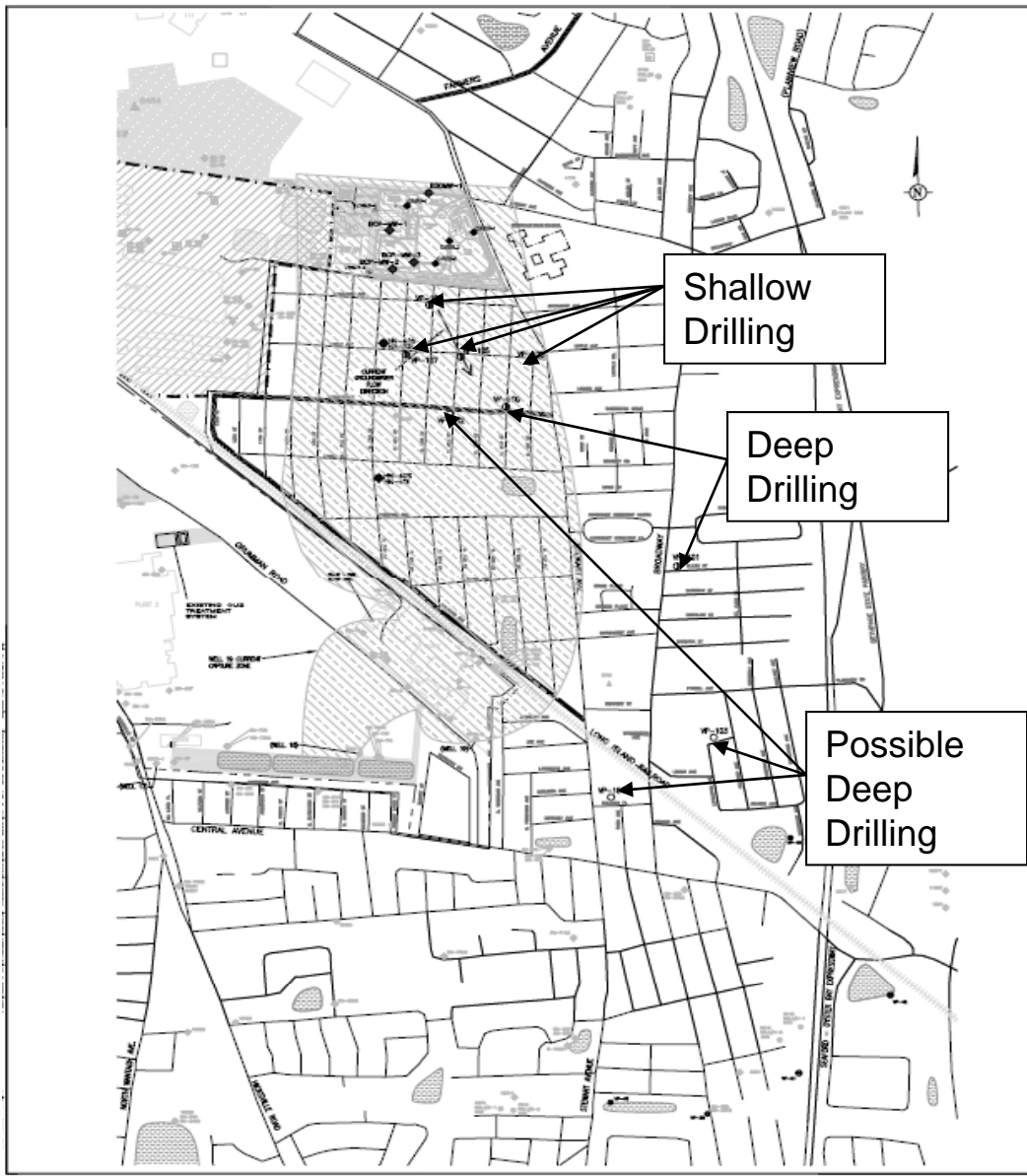
# Proposed Drilling Locations (3)



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# What Will We Be Doing In the Neighborhood for Phase 2?

- Mark-outs of underground utilities
- Shallow (approx. 150 ft) drilling and soil/groundwater sampling and analysis
- Temporary well installation and removal
- Deep (min. 400 ft) drilling and soil/groundwater sampling and analysis
- Soil gas sampling and analysis



- EXPLANATION**
- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AIRSPACE SITE
  - PROPERTY BOUNDARY OF U.S. NAVY SITE
  - ||||| LONG ISLAND RAILROAD
  - ▨ NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2002)
  - ▩ DEKAYED U.S. NAVY OWNED PROPERTY (AS OF 2002)
  - ▧ RECHARGE BASIN
  - ▭ LAND SURFACE PROJECTION OF THE CAPTURE ZONE OF WELL ONLY 2 (WELL 130) PLUMBED AT ITS NORMAL RATE OF 700 GPM
  - ← CURRENT DIRECTION OF GROUNDWATER FLOW
  - LIMITS OF BETHPAGE HIGH SCHOOL WASH BUILDING
- W-100 PROPOSED OUS VERTICAL PROFILE BORING  
W-101 CONTINGENT OUS VERTICAL PROFILE BORING  
W-102 OBSERVATION MONITORING WELL (GRAY - SHOWN FOR REFERENCE)  
W-103 (BLACK - PROPOSED TO BE SAMPLED IN PHASE 2 RI)  
W-104 INDUSTRIAL WELL  
W-105 PUBLIC SUPPLY WELL  
W-106 IRRIGATION WELL  
W-107 NORTHROP GRUMMAN OR NAVY PRODUCTION WELL  
W-108 ABANDONED PRODUCTION WELL  
W-109 COMPLETED OUS VERTICAL PROFILE BORING
- ABBREVIATIONS:**  
BWD BETHPAGE WATER DISTRICT  
VPS VERTICAL PROFILE BORING  
RI REMEDIAL INVESTIGATION  
OU3 OPERABLE UNIT 3

- GENERAL NOTES:**
1. THIS FIGURE INCLUDES LOCATIONS OF PUBLIC SUPPLY WELLS BASED ON INFORMATION RECEIVED BY AGENCIES IN RESPONSE TO A SEPTEMBER 2001 LETTER TO WATER DISTRICTS.
  2. EXIST LOCATIONS OBTAINED FROM LONG TOPOGRAPHIC MAPS (SOUTHWARD, HORTONVILLE, FROSTPORT AND HAYTOWN), QUADRANGLES AND INFORMATION PROVIDED BY NORTHROP GRUMMAN.
  3. NORTHROP GRUMMAN PROPERTY HOLDINGS BASED ON DATA PROVIDED IN JUNE 2002.
  4. LOCATIONS OF MONITORING WELLS INSTALLED BY ENVIKA & SARTIOLLO (EMSI) AT PLANT 1 (E.G. MW-1 TO MW-5) ARE APPROXIMATE BASED ON DMS SITE PLAN PROVIDED ON DECEMBER 19, 2002.
  5. LOCATIONS OF MONITORING WELLS INSTALLED BY ENVIKA & SARTIOLLO (EMSI) AT SCOUTAGE COMMUNITY PARK ARE APPROXIMATE BASED ON DATA PROVIDED BY DMS SITE PLAN DATED DECEMBER 2002.
  6. APPROXIMATE LOCATIONS OF BETHPAGE TOWN MONITORING WELLS INSTALLED BY THE TOWN OF OYSTER BAY ARE BASED ON THE 2005 REPORTS (DWM 2005a,b).
  7. OUS RI ON-SITE VPSs DRILLED BY ARCADIS ARE SHOWN ON FIGURE 2.
  8. PROPOSED LOCATIONS SUBJECT TO FIELD VERIFICATION AND MAY CHANGE.
  9. W-100 TO W-104 WELLS CHECKED IN OCTOBER 2005, BUT REQUIRE CONFIRMATION.

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D	3/8/2006	REVISION/ISSUE/ISSUE DATE	1/06
REV.	ISSUE DATE	DESCRIPTION	
001/06			

0' 500' 1000'  
SCALE: 1" = 500'

PROJECT TITLE:  
OPERABLE UNIT 3  
FORMER GRUMMAN SETTLING PONDS  
BETHPAGE, NEW YORK

DRAWN BY:  
SOUTH PROJECT AREA  
SHOWING PHASE 2 RI OFF-SITE  
VERTICAL PROFILE BORINGS AND  
WELLS PROPOSED FOR SAMPLING

**ARCADIS**

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www.arcadis-us.com

DRN	DRN
PROJECT MANAGER C. SHAW DENNARD	OFFPROJECT MANAGER W. WOLFEY
LEAD DESIGN PROFESSIONAL 00000	CHECKED BY J. SELEN
DESIGNER 00000	DRAWN BY E. HEDDES
PROJECT NUMBER NYD01348.0705	FIGURE 6

BETHPAGE COMMUNITY PARK  
EXTENTS AND FEATURES  
DARRA AND BARTILUCCI  
CONSULTING ENGINEERS 2003  
ALL COORDINATES REFERENCED TO  
NORTH AMERICAN DATUM 83

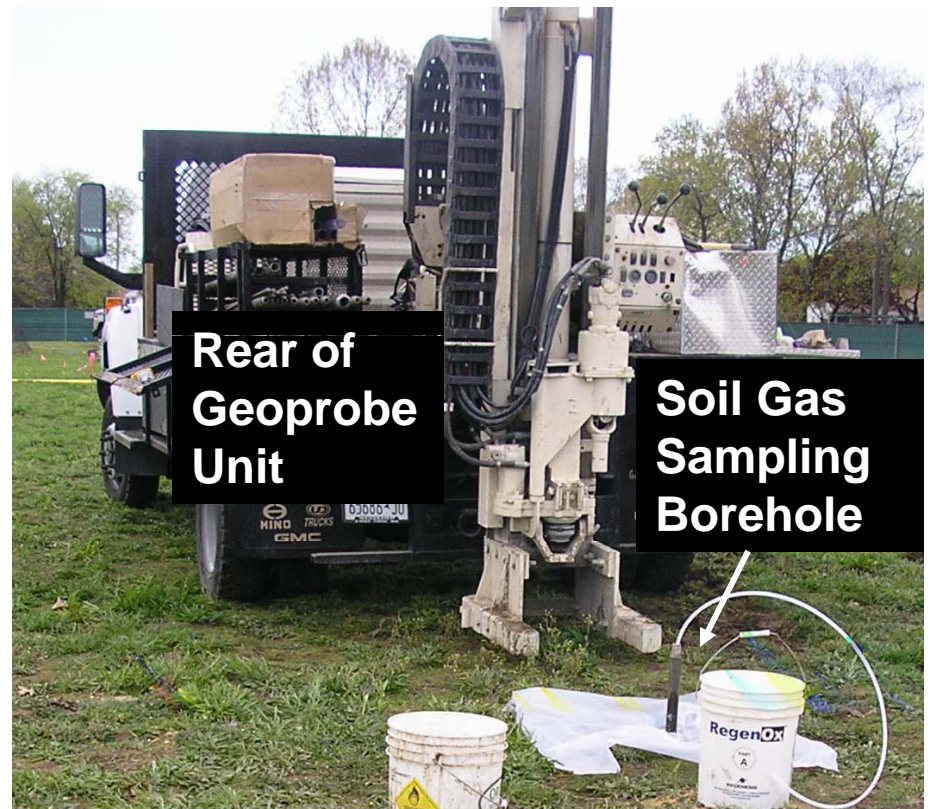
# What Equipment Will Be Used?

- In the Park and Northrop Grumman property:
  - Auger Drilling Rig (Soil and Shallow Groundwater)
  - Geoprobe Unit (Soil and Soil Gas)
  - Cone Penetrometer Testing Unit (CPTU) and Membrane Interface Probe (MIP) Units (Soil)
  - Backhoe/Excavator (Soil Test Pits – if needed)
  - Support Trucks
- In the Neighborhoods:
  - Mud Rotary Drilling Rig (Deep Groundwater)
  - Auger Drilling Rig (Shallow Groundwater)
  - Geoprobe Unit (Soil and Soil Gas)
  - Support Trucks

# Typical Park Soil Testing Setup

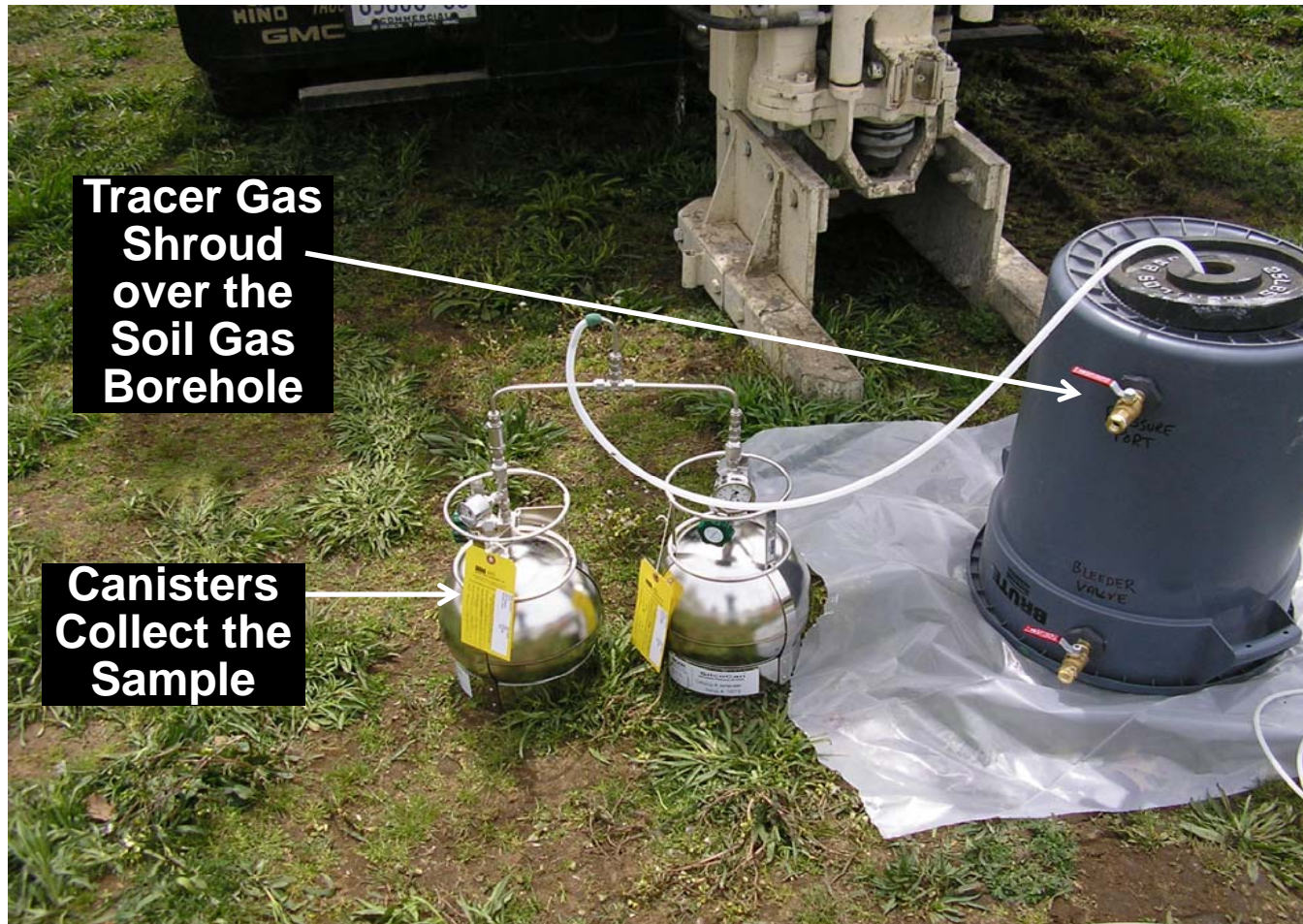


# Typical Soil Gas Sampling Setup

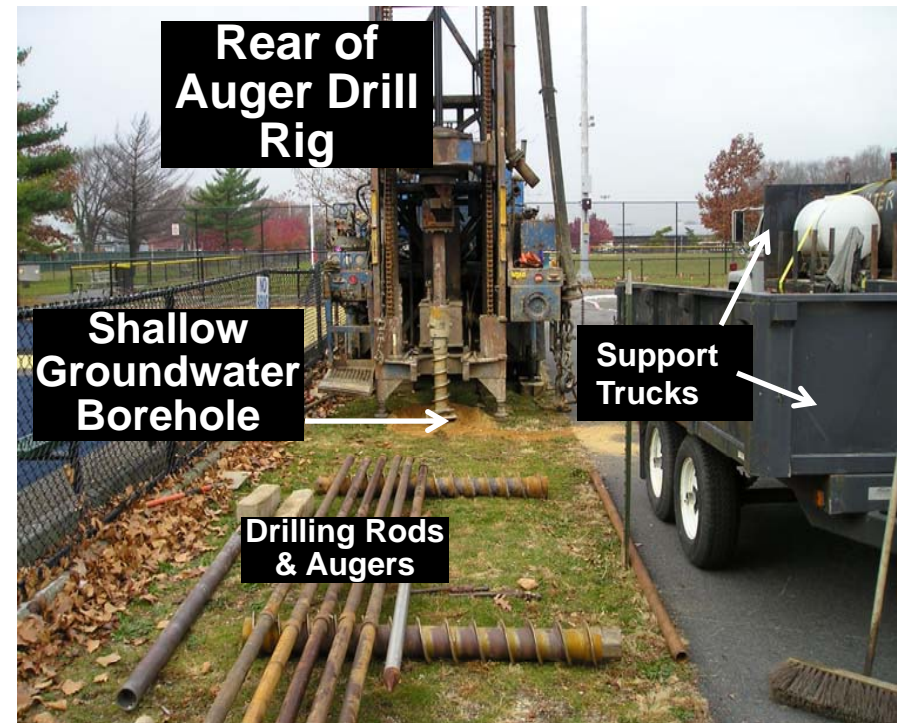
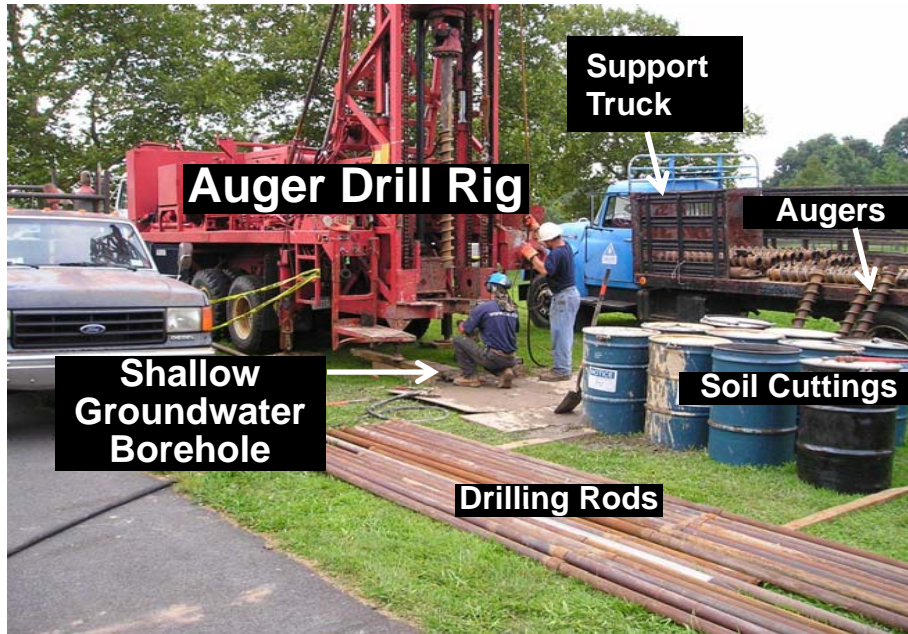




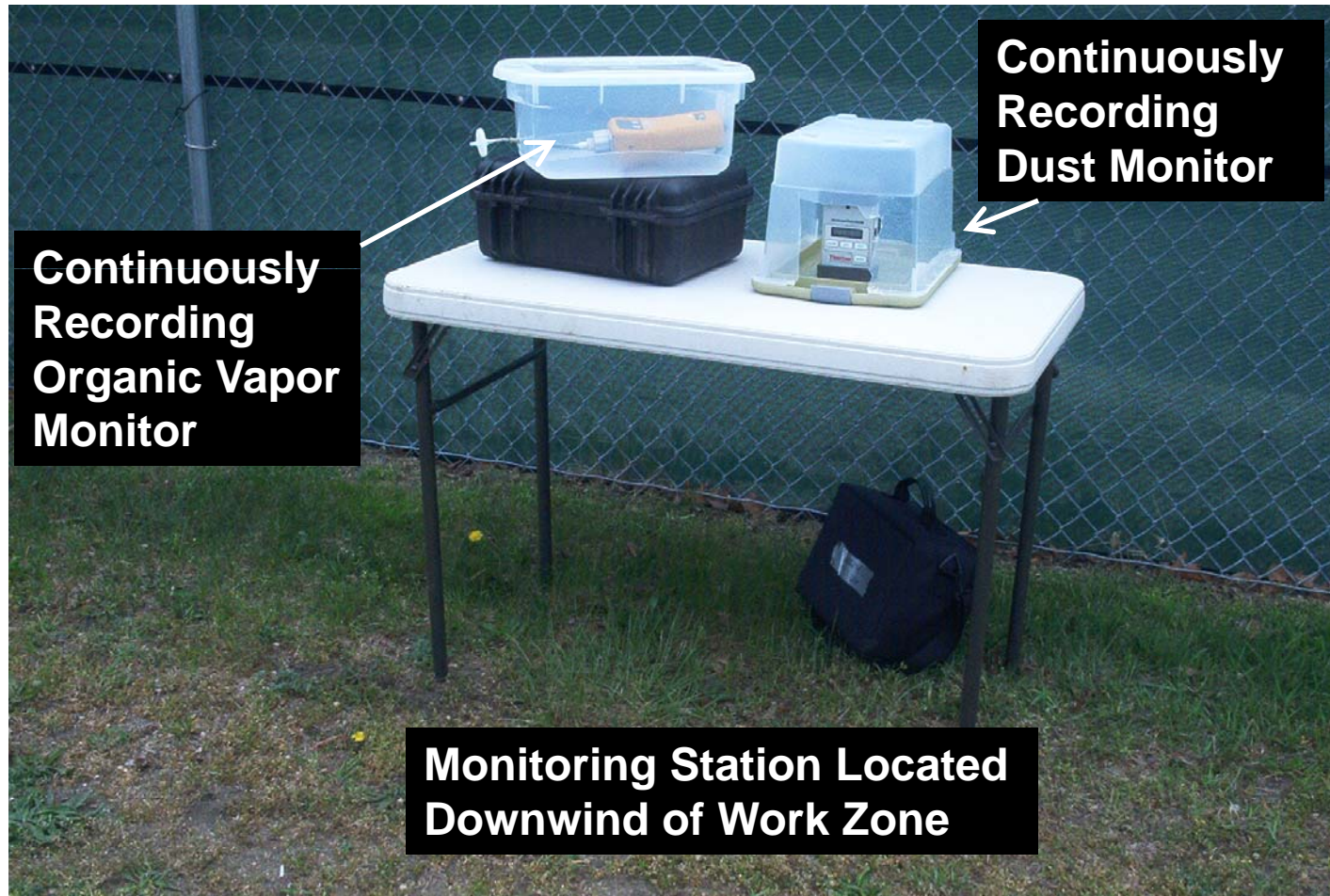
# Typical Soil Gas Sampling Setup



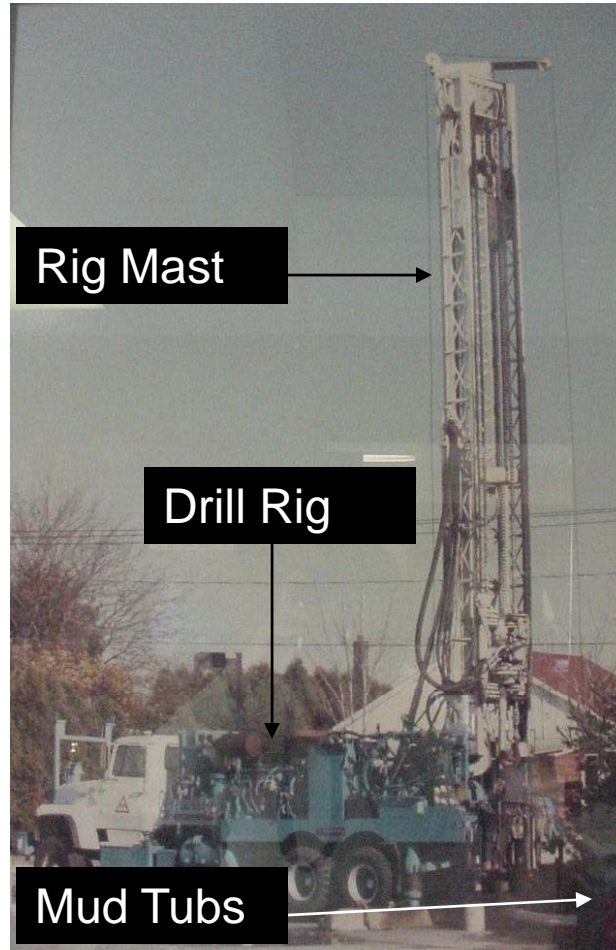
# Typical Shallow Groundwater Sampling Setup



# Typical Community Air Monitoring Setup



# Typical Deep Groundwater Sampling Setup



# Health and Safety Measures

- Community outreach and notification
- Community Air Monitoring Program
- Borehole, work zone, and site worker air monitoring
- Site control
- Materials management and removal
- Site restoration

# Operations Plan

- Cuttings and waste removed daily from drill sites on public property
- Pre-established truck routes
- Traffic control devices
- Sanitary/storage facilities on Northrop Grumman property
- Limited workday schedule
- 24-hr/day points of contact

# Tentative Phase 2 Field Schedule

- In the Park: late April to August 2006
- In the Neighborhood: June to September 2006
  - Soil Gas: 4 – 6 hours per location
  - Shallow Groundwater: 5 – 7 days per location
  - Deep Groundwater: 2 – 4 weeks per location
- Work Hours: Monday to Friday - 7:00 AM to 5:00 PM (excluding Town Holidays)

# Next Steps (Following Phase 2)

- Phase 3 of the RI: Drilling and sampling of permanent monitoring wells (To Be Determined)
- Data evaluation and submittal of RI Report to DEC
- RI Public Meeting held by DEC
- Interim Remedial Measure (IRM) evaluation
- Submittal of Feasibility Study (FS) Report to DEC
- Documents will be placed in the Public Repository



# Feasibility Study Process

- Select potentially applicable remedial technologies
- Combine selected remedial technologies into alternatives
- Evaluate and rank alternatives using nine required NYSDEC criteria
- Prepare FS Report

# Contact Information

*In case of questions or concerns, please contact the NYSDEC:*

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Project Manager

NYSDEC

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E-mail: [sxscharf@gw.dec.state.ny.us](mailto:sxscharf@gw.dec.state.ny.us)

**William Fonda**

Citizen Participation Specialist

NYSDEC

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# Contact Information

*If you wish to contact Northrop Grumman directly, please contact:*

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*Please pick up a Fact Sheet on your way out!*