



Infrastructure, environment, facilities

Mr. Steven Scharf, P.E.
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Subject:

Phase 2 Remedial Investigation Work Plan Addendum No. 4, Former Grumman Settling Ponds (Operable Unit 3, - Bethpage Community Park), Bethpage, New York.

Dear Mr. Scharf:

ARCADIS has prepared this Work Plan Addendum No. 4 for Phase 2 of the Remedial Investigation (RI) at the Former Grumman Settling Ponds (Operable Unit 3 – Bethpage Community Park), Bethpage, New York Site. This Work Plan Addendum No. 4 presents the rationale and scope for drilling, installing, developing, and sampling of an initial pair of permanent monitoring wells on the Northrop Grumman Plant 24 Access Road property, adjacent to the Bethpage Community Park. The NYSDEC-approved revised RI/FS Work Plan, dated March 8, 2006, is incorporated herein by reference and contains additional information as to the goals and objectives of the overall RI. The following sections provide the rationale and scope of the work proposed under this RI Work Plan Addendum.

Rationale

Table 1 provides the details and rationale for the proposed monitoring wells. The monitoring wells will be located near Phase 2 RI vertical profile boring (VPB) VPB-3C for the following reasons: better quantify volatile organic compounds (VOCs) in groundwater at the Northrop Grumman Plant 24 Access Road southern boundary and develop local groundwater quality data trends. Figure 1 depicts the location of the proposed wells and completed VPB-3C, total VOC concentrations in groundwater from VPB-3C, and nearby site features.

Scope of Work

Two monitoring wells (BCP-MW4-1 and BCP-MW4-2) will be drilled, installed, developed, and sampled. Well BCP-4-1 will be installed to straddle the water table (approximately 55 ft bls); Well BCP-MW4-2 will be installed to intersect the highest VOC concentrations in groundwater at the site boundary (see Figure 1). The

Imagine the result

ARCADIS G&M, Inc.
88 Duryea Road
Suite 100
Melville
New York 11747
Tel 631 249 7600
Fax 631 249 7610
www.arcadis-us.com

ENVIRONMENT

Date:
August 7, 2006

Contact:
David Stern

Phone:
631-391-5284

Email:
dstern@arcadis-us.com

Our ref:
NY001348.0806.00003

ARCADIS

Mr. Steven Scharf, P.E.
NYSDEC
August 7, 2006

monitoring wells will be drilled, installed, developed and sampled consistent with NYSDEC-approved protocols.

Beginning one week subsequent to completion of development, groundwater from the wells will be sampled by ARCADIS on a varying frequency (dependent on the data obtained) for the Target Compound List of VOCs using analytical protocols consistent with the NYSDEC-approved RI/FS Work Plan (the list of analytes may be modified, depending on future data needs). The monitoring well construction information and groundwater data obtained will be incorporated into the RI Report.

Schedule

ARCADIS' objective is to begin monitoring local groundwater quality (via collection of groundwater samples from the newly installed wells) as soon as possible. We expect well drilling to commence on August 8, 2006. Assuming the wells are completed on or about August 16, 2006, we expect that the first groundwater sampling event will occur on August 23, 2006. ARCADIS will notify the NYSDEC in advance of groundwater sample collection.

We appreciate NYSDEC expedited review of this work plan addendum. If you have any questions, please feel free to contact us.

Sincerely,

ARCADIS G&M, Inc.



David E. Stern
Senior Hydrogeologist

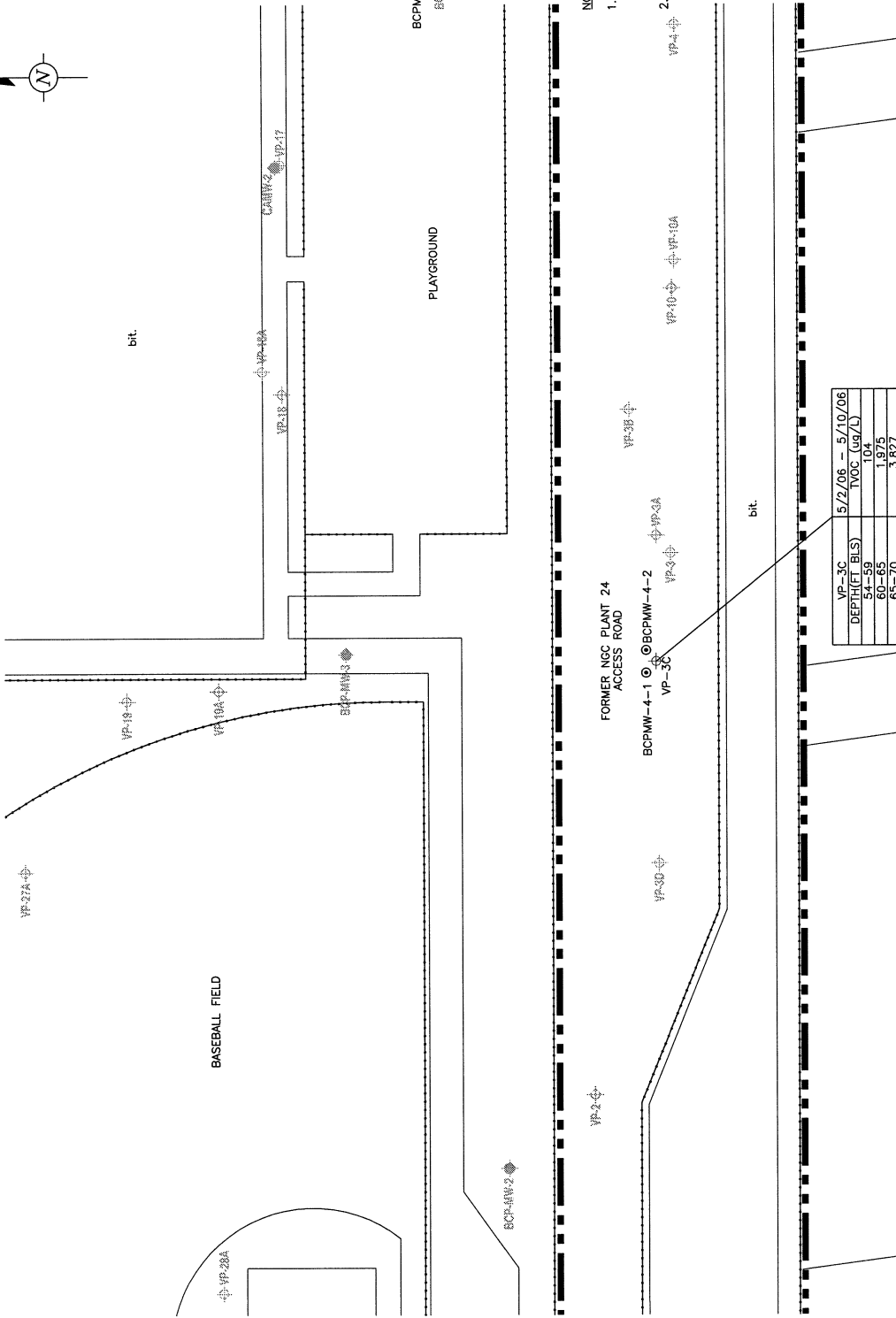
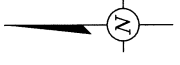


Carlo San Giovanni
Project Manager

Enclosures

Copies:

Michael F. Wolfert, ARCADIS
John Cofman, Northrop Grumman Corporation
Larry Leskovjan, Northrop Grumman Corporation

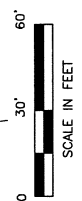


- EXPLANATION**
- NORTHROP GRUMMAN CORPORATION PROPERTY LINE
 - - - - - FENCE
 - bit. BITUMINOUS PAVEMENT
 - ⊙ BCPMW-4-1 PROPOSED MONITORING WELL
 - ⊕ BCP-4000-3 EXISTING MONITORING WELL
 - ⊕ VP-1 COMPLETED VERTICAL PROFILE BORING (BY ARCADIS)
 - ug/L MICROGRAMS PER LITER
 - TVOC TOTAL VOLATILE ORGANIC COMPOUND

NOTES:

- LOCATIONS OF WELLS INSTALLED BY THE TOWN OF OYSTER BAY ARE BASED ON THE 2005 REPORTS, LOCATIONS ARE APPROXIMATE (H2M 2005c9b).
- PROPOSED WELL LOCATIONS SUBJECT TO FIELD VERIFICATION AND MAY BE MODIFIED.

VP-3C	5/2/06	5/10/06
DEPTH (FT BLS)	TVOC (ug/L)	
54-59	104	
60-65	1,975	
65-70	3,827	
70-75	31,697	
75-80	12,794	
80-85	23,143	
85-90	2,911	
90-95	44	
105-110	64	
115-120	12	
	4	



ARCADIS	88 Durfee Road Melville, NY 11747 Tel: 631-249-7600 Fax: 631-249-7610 www.arcadis-us.com	OPERABLE UNIT 3 FORMER GRUMMAN SETTLING PONDS BETHPAGE, NEW YORK	SITE PLAN SHOWING PROPOSED WELL LOCATIONS	PROJECT NUMBER NY001348.0806
PROJECT TITLE OPERABLE UNIT 3 FORMER GRUMMAN SETTLING PONDS BETHPAGE, NEW YORK		DEPARTMENT MANAGER M. WOLFERT		CHECKED BY D. STERN
PROJECT MANAGER C. SAN GIOVANNI		TASK/PHASE NUMBER 00003		DRAWN BY A. SANCHEZ
SHEET TITLE SITE PLAN SHOWING PROPOSED WELL LOCATIONS		PROJECT NUMBER NY001348.0806		DRAWING NUMBER 1
BASE MAP REFERENCE DVRKA AND BARTILUCCI CONSULTING ENGINEERS 2003				

Table 1. Construction and Sampling Specifications for Proposed Permanent Monitoring Wells and Rationale, Former Grumman Settling Ponds (Operable Unit 3 - Bethpage Community Park), Bethpage, New York.

Monitoring Well Identification	Drilling Method	Gamma Logging	Split Spoon Sampling	Proposed Casing/Screen Diameter and Material	Proposed Screen Slot Size	Proposed Screen Interval (ft bls)	Proposed Total Depth (ft bls) ⁽¹⁾	Proposed Monitoring Activity			Proposed Groundwater Analysis ⁽²⁾	Rationale/Objective ⁽³⁾
								NAPL Gauging	Water Levels	Sampling		
BCP-MW4-1	H.S.A	--	--	4-inch Ø Schedule 40 PVC	0.01	45 - 65	70	√	√	√	VOC	- Although NAPL has not been found to-date, concentrations of VOCs in soil and groundwater in nearby VPBs suggest that NAPLs may be present.
BCP-MW4-2	H.S.A	√	--	4-inch Ø Schedule 40 PVC	0.01	70 - 85	90	√	√	√	VOC	- The groundwater VOC data along the Plant 24 Access Road indicate that the highest VOC concentrations were detected at VP-3C (downgradient of the former Rag Pit). - Local hydraulic information indicates a seasonal variation in water-table depth of approximately 5 ft. Well BCP-MW4-1 will intercept the water table (accounting for seasonal variations) and will be used to monitor water-table VOC concentrations and for the presence of NAPL along the NGC Plant 24 Access Road. - Well BCP-MW4-2 will be installed to intersect and monitor the highest concentrations of VOCs in groundwater and monitor for the presence of NAPL along the NGC Plant 24 Access Road. - The information obtained from this effort will be incorporated into the overall RI Report.

Footnotes:

- (1) Wells will be installed with a 5-ft length of PVC below the screen to serve as a sump.
- (2) Laboratory analysis of groundwater samples shall be performed using one or more of the following methods (see Revised RI/FS Work Plan QAPP - Appendix B for details). VOCs: TCL List of VOCs using NYSDEC ASP 2000 Method OLM 4.2.
- (3) Wells will be developed no sooner than 24 hours after installation using a submersible pump. Investigation derived waste will be managed in a manner consistent with the provisions of the NYSDEC-approved RI/FS Work Plan.

Definitions:

H.S.A	Hollow-Stem Auger
ft bls	feet below land surface
QAPP	Quality Assurance Project Plan
NAPL	Non-Aqueous Phase Liquid
VOC	Volatile Organic Compound
PVC	Polyvinyl Chloride
Ø	inner diameter
√	Activity will be performed
--	Activity will NOT be performed