Steven Scharf - FW: Bethpage, AOC 22 Work Plan

From: "Clarke, Susan CIV MIDLANT, EV3" <susan.clarke1@navy.mil>
To: "Steven Scharf" <sxscharf@gw.dec.state.ny.us>
Date: 10/31/2006 1:57 PM
Subject: FW: Bethpage, AOC 22 Work Plan
CC: "Brayack, David -- NUS" <David.Brayack@ttnus.com>
Attachments: BO0610AOC22WPPDF.pdf

Steve,

Attached is a copy of our draft work plan for AOC 22. We want to get this confirmation sampling done as soon as possible .... Dave is planning to be in the field the beginning of Dec. Can we get your comments ASAP? I know you are anxious to get this sampling done, too. How about Nov 9 for comments due? Then Dave has time to revise.

I'll be here until about 3 pm today. Going to a meeting now (our Real Estate Group is signing the TOB Access Agreement !) ...

Susan

From: Brayack, David -- NUS [mailto:David.Brayack@ttnus.com]
Sent: Tuesday, October 31, 2006 9:40
To: Clarke, Susan CIV MIDLANT, EV3
Subject: Bethpage, AOC 22 Work Plan

We can hand this to Steve on Wednesday, or if you want, email it to him today.

<<BO0610AOC22WPPDF.pdf>>

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Letter Work Plan
Soil and Groundwater Sampling at AOC 22
NWIRP Bethpage

1.0 Introduction

TtNUS will be conducting a soil and groundwater investigation at Area of Concern (AOC) 22 - Former Underground Storage Tanks at Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, New York. This AOC is also identified as Site 4. This work is being conducted under CLEAN Contract No. N62472-03-D-0057, Contract Task Order No. 002.

The work is being conducted to document the post-treatment conditions of soil and groundwater at the site. The primary site contaminant is No. 6 Fuel Oil. Based on previous testing at the site, diesel fuel may also be present. Groundwater in the area is also contaminated with low concentrations (less than 100 ug/l) of chlorinated solvents that are a regional issue.

A Closed Loop Bioremediation (CLB) System was constructed and operated at the site by a third-party contractor from fall of 2004 to the spring of 2006, at which time the system was shut-down. The system consisted of injecting iron, peroxide, soil vapor, oxygen, surfactant, and biomass into the soils and extracting soil vapor. An ex-situ bioreactor was used to treat the extracted vapors, prior to re-injection.

Prior to operation of the CLB System, less than 2 inches of free product were present on the water table. During treatment, the thickness of free product increased, as the treatment caused petroleum product to mobilize and move downward to the water table. The third party contractor conducted free product recovery during the operation of the system and extracted approximately 5 drums of oil/water. The last round of soil testing was conducted in August 2005 and the current extent of free product and petroleum in the soil column is uncertain.

The last ground of groundwater testing was conducted in March 2005. As of that time, there was no evidence of contaminant migration with the groundwater.

2.0 Objective

The object of the current program is to collect and analyze soil and groundwater samples to:

- Determine the amount of petroleum hydrocarbons remaining in the soil.
- Determine the presence, and if present, the areal extent and thickness of floating free product.
- Determine whether the treatment has caused soil contaminants to dissolve and migrate with groundwater.

3.0 Approach

Soil samples will be collected at 4 soil boring locations previously tested by the third-party. These boring locations are in the area of know contamination and are being used to monitoring the effectiveness of the CLB System. The additional data will be used to evaluate the overall effectiveness of the remedy. The 4 borings were sampled at 20, 30, 40, 50, and 60 feet below ground surface by the third-party during five sampling events from August 2004 to August 2005. The samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs).

The currently planned soil borings will be off set from previous soil boring locations by approximately 2 to 3 feet. Soil samples will be collected at the above referenced intervals. Additional sample in each boring will be collected at 70 feet below ground surface to determine if there was downward migration of the free product. All the samples will be analyzed for TPH and 2 samples per boring will be analyzed for polynuclear aromatic hydrocarbons (PAHs).

Four to six soil borings will be installed to determine whether the treatment caused free product to form and spread along the water table. Four of the borings will be installed

approximately 40 feet north, south, east and west of the first four soil borings. If contamination is detected in any of these borings, then up to two additional borings may be installed. Because of the presence of utilities and structures, the exact location of these borings will be determined in the field. Soil samples will be collected at the water table, 5 feet above the water table and 5 feet below the water for visual field characterization. One or two samples from each will be analyzed for TPH to verify the presence and absence of contamination.

Samples will be collected using a hollow stem auger rig with split spoon samplers. Samples will be screened in the field for visual evidence of petroleum and a photoionization detector.

Eleven groundwater monitoring wells (TTAOC22-MW01 to -MW11) in the area will be tested. Each of the wells will be first evaluated for the presence/thickness of free product. If free product is not present, then a submersible pump will be lowered into the well, the well purged, and groundwater samples collected and analyzed for VOCs, SVOCs, and metals. Quality assurance/quality control (QA/QC) samples will consist of a trip blank, field blank, rinsate, duplicate (1 in 10), and matrix spike/matrix spike duplicate (1 in 20). The data will be validated.

If free product is present, but less than 6 inches thick, a temporary 2-inch casing, with aluminum foil sealing the bottom of the casing will be inserted to near the bottom of the well. Up to three gallons of distilled water per well may be used to help submerge the casing and prevent free product from flowing into the 2-inch casing. The pump will then be lowered inside the 2 inch casing and used to puncture the foil at the bottom of the casing. The free product in the well has a history of coating materials that come in contact with it and is difficult to remove. If more than 6 inches of free product is present, then the well will not be sampled.

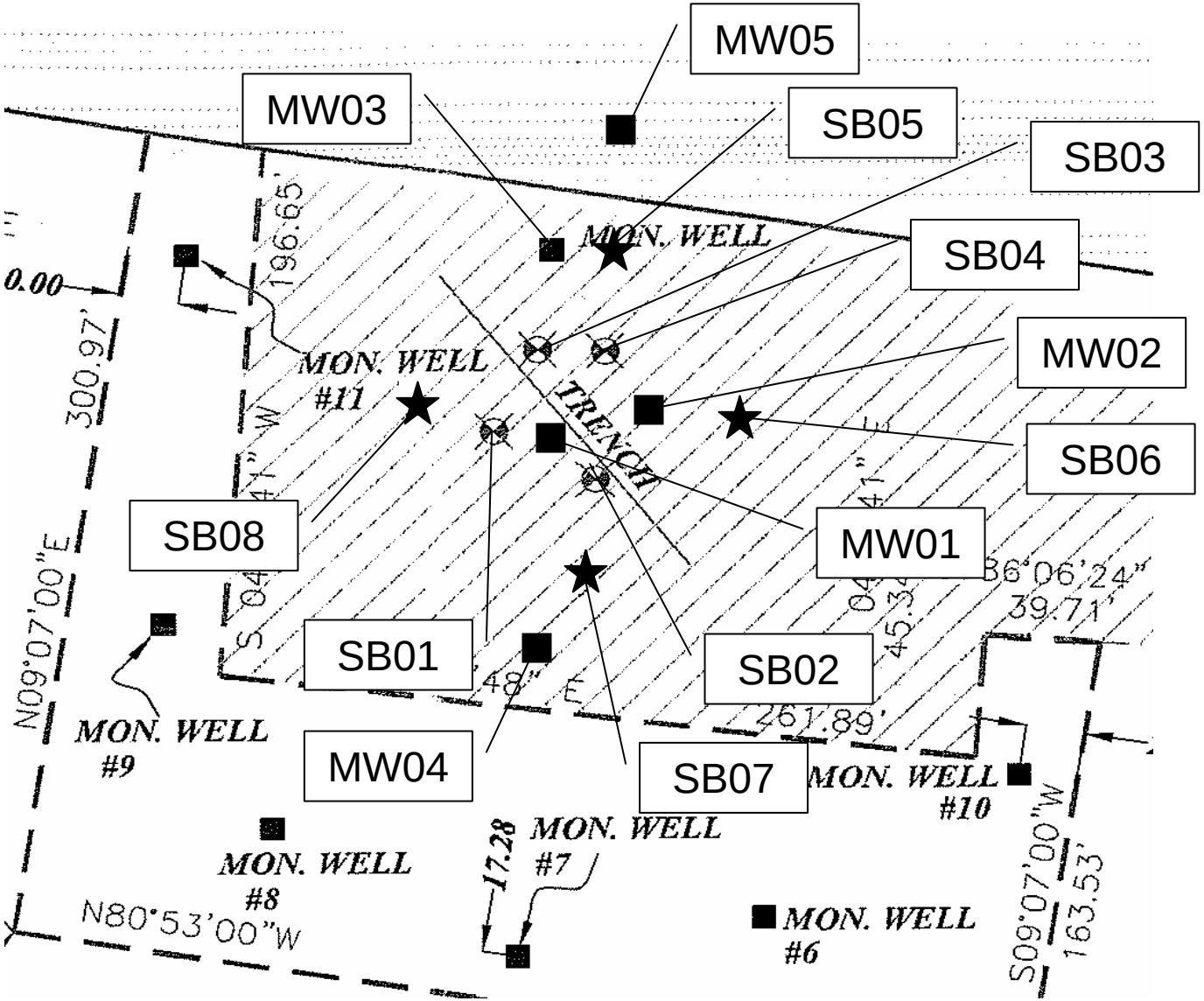
4.0 Analytical Schedule

Anticipated soil boring, sampling, and analytical activities are summarized as follows.

Location	Sample ID	Depth	PID/Visual	TPH	SVOC
SB01	TTAOC22-SB101	1921	X	X	X
		2931	X	X	
		3941	X	X	
		4951	X	X	X
		5961	X	X	
		6971	X	X	X
SB02	TTAOC22-SB102	1921	X	X	X
		2931	X	X	
		3941	X	X	
		4951	X	X	X
		5961	X	X	
		6971	X	X	X
SB03	TTAOC22-SB103	1921	X	X	X
		2931	X	X	
		3941	X	X	
		4951	X	X	X
		5961	X	X	
		6971	X	X	X
SB04	TTAOC22-SB104	1921	X	X	X
		2931	X	X	
		3941	X	X	
		4951	X	X	X
		5961	X	X	
		6971	X	X	X
SB05	TTAOC22-SB105	WT	X	X[1]	
		WT-5	X		
		WT+5	X		
SB06	TTAOC22-SB106	WT	X	X[1]	
		WT-5	X		
		WT+5	X		
SB07	TTAOC22-SB107	WT	X	X[1]	
		WT-5	X		
		WT+5	X		
SB08	TTAOC22-SB108	WT	X	X[1]	
		WT-5	X		
		WT+5	X		
SB09	TTAOC22-SB109	WT	X	X[1]	
		WT-5	X		
		WT+5	X		
SB10	TTAOC22-SB110	WT	X	X[1]	
		WT-5	X		
		WT+5	X		

Water table (WT) is approximately 60 feet below ground surface.

[1] One or two samples will be collected per boring for chemical analysis. Collect duplicate samples at a frequency of 1 in 10.



AOC 22, Soil Boring and Groundwater Sampling
NWIRP Bethpage, New York