TETRA TECH

NOR-001011

March 4, 2011

Mr. Stephen Scharf
New York Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Remedial Action A
625 Broadway, 11th Floor
Albany, New York 12233-7015

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order WE06

Subject: Site 4 Groundwater Sampling Work Plan
NWIRP Bethpage, New York

Dear Mr. Scharf:

On behalf of the Navy, please find enclosed an electronic copy of the subject work plan. If you require a submittal in the mail, please inform Ms. Fly. The work described in the subject plan is being conducted as part of a continuing investigation of Site 4 soils and groundwater. Groundwater at this site was last sampled in 2006 and current groundwater quality data is required to support the soil investigations.

If you have any questions please contact Ms. Lora Fly, NAVFAC Mid-LANT, at (757) 341-2012.

Sincerely

David D. Brayack, P.E.
Project Manager

Enclosure: (1) Site 4 Groundwater Sampling Work Plan

Distribution:
Mid-Lant, Lora Fly
NYSDEC (Albany), Henry Wilkie
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Administrative Record
Project File

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WORK PLAN ADDENDUM
SITE 4 GROUNDWATER SAMPLING WORK PLAN
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

INTRODUCTION

This Work Plan has been prepared to address groundwater sampling activities planned for April 2011 at Site 4 – Former Underground Storage Tanks at Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Long Island, New York. Groundwater sampling conducted in December 2006 identified the presence of Volatile Organic Compounds (VOCs) and metals. Groundwater samples at Site 4 will characterize the current conditions of groundwater quality at Site 4.

Environmental concerns at AOC 22 were first identified during a 1997 investigation of underground storage tanks (USTs) near Plant No. 3. The USTs reportedly contained No. 6 Fuel Oil and were removed sometime between 1980 and 1984.

Based on the December 2006 groundwater data, concentrations of TCE and several metals including iron, manganese, and cadmium in the up gradient and/or down gradient monitoring wells exceed NYSDEC groundwater standards. Floating fee product, at a maximum thickness of ¼ inch was observed in two wells underneath the former USTs. Surrounding wells did not contain free product. Site-related groundwater contamination was limited and consisted of benzene, ethyl benzene, xylenes, and naphthalene in two source area wells at concentrations greater than New York State drinking water standard maximum contaminant levels (MCLs). Except for benzene in one down gradient well, there was no evidence of migration of these organics beyond the source area.

SAMPLING APPROACH

Groundwater sampling will be conducted in April 2011 to monitor groundwater quality at Site 4. Monitoring well locations are presented in Figure 1. There are eleven monitoring wells at this site. Monitoring well construction details are provided in Table 1. Prior to sampling, a round of free product/water level measurements will be collected from the monitoring wells. All data will be recorded on a Groundwater Level Measurement Sheet.

Groundwater samples will be collected from the monitoring wells using USEPA Region 3 low-flow (low-stress) purging and sampling techniques. The wells will be purged until field parameters stabilize. Field parameters include turbidity, dissolved oxygen, pH, specific conductivity, and temperature. Monitoring wells MW01 and MW02 contained thick tar-like product that could not be penetrated by a downhole pump during previous sampling events. During this event, a two inch disposable bailer will be used in an effort

to break through the layer of product and collect a sample at MW01 and MW02. All collected groundwater samples will be sent to the laboratory for VOC, SVOC, and total metals analysis. Sample nomenclature and chemical analysis are also provided in Table 1.

Quality Assurance/Quality Control (QA/QC) samples that will be collected include matrix spike/matrix spike duplicates (MS/MSD), field duplicates, field blanks, and trip blanks. If decontaminated equipment is to be used (e.g., submersible sampling pump), rinsate blanks will be collected.

DECONTAMINATION

After sampling each monitoring well, the sampling pump (if utilized) and water level indicator will be decontaminated. Since the groundwater is known to contain No. 6 Fuel Oil, the pump and water level indicator will be cleaned with isopropanol and then rinsed with deionized water.

INVESTIGATIVE DERIVED WASTE

Waste materials generated during the groundwater sampling event will be properly disposed of in accordance with applicable federal and state regulations. Waste materials expected to be generated during the field activities include the following:

- Decontamination fluid
- Used personal protective equipment (PPE)
- Used sampling equipment
- Well development and purge water

The Navy or its representative will sign any manifests and shipping papers.

Table 1
AOC 22/ Site 4 Monitoring Well Information,
Sample Nomenclature and Analysis - April 2011
NWIRP Bethpage, NY

				Analysis		
Monitoring Well	**Well Depth (ft bgs)**	**Screen Interval (ft bgs)**	**Sample ID**	**VOCs**	**SVOCs**	**Total Metals**
MW01	68	48 - 68	TTAOC22-MW01	X	X	X
MW02	66	46 - 66	TTAOC22-MW02	X	X	X
MW03	65.5	45.5 - 65.5	TTAOC22-MW03	X	X	X
MW04	66	46 - 66	TTAOC22-MW04	X	X	X
MW05	67	47 - 67	TTAOC22-MW05	X	X	X
MW06	62	52 - 62	TTAOC22-MW06	X	X	X
MW07	62	52 - 62	TTAOC22-MW07	X	X	X
MW08	62	52 - 62	TTAOC22-MW08	X	X	X
MW09	62	52 - 62	TTAOC22-MW09	X	X	X
MW10	60	49 - 59	TTAOC22-MW10	X	X	X
MW11	64	53 - 63	TTAOC22-MW11	X	X	X
Trip Blank	NA	NA	TTAOC22-TBDDMMYY	X		
Rinsate Blank	NA	NA	TTAOC22-RBDDMMYY	X	X	X
Duplicate	NA	NA	TTAOC22-DUP01	X	X	X
Field Blank	NA	NA	TTAOC22-FBDDMMYY	X	X	X

Notes:

DDMMYY - 2-digit day, 2-digit month, and 2-digit year

ft bgs - feet below ground surface

MW - Monitoring Well

NA - Not Applicable

SVOCs - Semi-Volatile Organic Compounds

VOCs - Volatile Organic Compounds

112GN9845\2210\112GN9845GM04.DWG 03/02/11 MKB

N

BUILDING 03

MW05
TTAOC22-SB12

TTAOC22-SB13

MW11

SB105

MW03
TTAOC22-SBO5

TTAOC22-SB06

SB104

SB103

TTAOC22-SB02

SB108

TTAOC22-SB09

TTAOC22-SB03

SB106

TTAOC22-SB14

SB101

SB102

TTAOC22-SB04

MW02

TRANSFORMERS

TTAOC22-SB01

MW01

SB107

SWITCHES

MW04
TTAOC22-SBO7

TTAOC22-SB08

MW09

BLDG. 304

GAC BLDG.

TTAOC22-SB11

TTAOC22-SB10

MW10

WAREHOUSE I

MW08

MW06

MW07

0 80 160
SCALE IN FEET

LEGEND

MONITORING WELL LOCATION

SOIL BORING LOCATION

TETRA TECH NUS, INC.

MONITORING WELL AND SOIL LOCATIONS AOC 22 NWIRP BETHPAGE, NEW YORK

FILE	SCALE
112GN9845GM04	AS NOTED
FIGURE NUMBER: FIGURE 1	REV: 0 / DATE: 03/02/11