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Site 20903-5640 (White Oak)
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NSWC WHITE OAK
5090.3a

PITT-03-5-005

March 4, 2005

Project Number 4246

Mr. David Steckler
Naval Facilities Engineering Command
Washington Navy Yard, Bldg. 212
1314 Harwood Street, SE
Washington, DC 20374-5018

Reference: CLEAN Contract No. N62467-D-94-0888
Contract Task Order 0839

Subject: Final SWMU 47 No Further Action Technical Memorandum
Former Naval Surface Warfare Center, White Oak
Silver Spring, Maryland

Dear David:

Enclosed is one copy of the No Further Action Technical Memorandum for Solid Waste Management Unit (SWMU) 47, the former Wastewater Treatment Plant.

Please feel free to contact me at (412) 921-8291 with any comments or questions regarding the document.

Best regards,

Ronald J. Kotun, Ph.D.
Project Manager

Enclosures

cc: Mr. Bruce Beach (EPA)
Mr. Andy Zarins (MDE)
Mr. Paula Gilbertson (EFANE) (w/o attachment)
Mr. Bob Ridgway (GSA/Alion)
Mr. Scott MacEwen (CH2MHILL)
Mr. Scott Nesbit (TtNUS)
Mr. John Trepanowski (TtNUS)

TECHNICAL MEMORANDUM

**RESULTS OF VERIFICATION SAMPLING
SWMU 47—FORMER WASTEWATER TREATMENT PLANT**

**FORMER NSWC WHITE OAK
SILVER SPRING, MARYLAND**

FEBRUARY 28, 2005

INTRODUCTION

The former NSWC White Oak was a Navy-owned and –operated laboratory for naval surface warfare research. The facility is located approximately 5 miles north of Washington, D.C., off New Hampshire Avenue in Silver Spring, Maryland (Figure 1). The former NSWC White Oak covers approximately 712 acres and is located in both Prince George's and Montgomery Counties. Adjacent to the southern corner of the property is the U.S. Army's Adelphi Laboratory Center (ALC) and the United States Naval Reserve (USNR) Training Center. A mixture of residential, park, industrial, and commercial properties border the remainder of the facility. The facility was closed in 1997, and the property was transferred to the General Services Administration (GSA) and the U.S. Army.

Solid Waste Management Unit (SWMU 47), the former Wastewater Treatment Plant, is located in the north-central portion of the facility off Blandy Road. The treatment plant consisted of an Imhoff tank, four sand filters, a chlorine contact chamber, and a tile-lined sludge drying bed. The concrete subunits were connected by terra cotta pipe. Following permit approval, the plant discharges were regulated under the facility's National Pollution Discharge Elimination System (NPDES) permit, with the wastewater discharging to Paint Branch. SWMU 47 is a level, rectangular area measuring approximately 100 feet by 500 feet and rising 35 to 50 feet above the surrounding intermittent streams. Slopes are steepest to the northwest and southeast and gentler to the northeast. Access to SWMU 47 is from the southwest, where the topography is relatively level.

Figure 2 shows the location of SWMU 47 in relation to the former Base boundaries, surface water bodies, and other landmarks. The facility boundaries identified on Figures 1 and 2 are the boundaries that existed prior to the transfer of the property to the GSA and the Army.

An investigation was conducted at this site in accordance with the work plan for site screening at Area of Concern (AOC) 2 (TtNUS, 1999). This plan was developed by the White Oak Base Realignment and Closure (BRAC) Cleanup Team (BCT) to identify the presence or absence of contaminants at each site. In December 2001 and January 2002 the BCT decided that additional investigation was warranted at SWMU 47. The Phase II site screening was conducted in April 2002. Based on the Site Screening Report for AOC 2 (TtNUS, 2004), the risk associated with residential exposure to PCBs was unacceptable. Therefore, it was decided that a time-critical removal action would be conducted to remove soil contaminated with polychlorinated biphenyl (PCB) concentrations in excess of a remedial action level (RAL) for total PCBs of 1 mg/kg.

The removal action included excavation and off-site disposal of soil with PCB concentrations exceeding 1 mg/kg. Figure 3 shows the area of excavation. In this area of excavation, two feet of soil were removed.

This area was subjected to verification sampling as identified in the Verification Sampling and Analysis Plan (VSAP) (TINUS, 2003) to demonstrate that the RAL was attained.

RESULTS OF VERIFICATION SAMPLING

The VSAP was prepared to present a procedure to confirm that soil concentrations following excavation met the RAL, that no further soil excavation would be required, and prove that sufficient excavation was conducted such that the site could be rendered protective of human health and the environment. The VSAP presented criteria and procedures to obtain and evaluate sampling data to determine the acceptability of the residual soil contaminant concentrations, if any.

If verification sample test results indicated that the remaining contaminant levels were unacceptable, additional soil was to be removed from the appropriate area subject to interpretation by the BCT as described above. In the event additional excavation was required, field personnel would collect an additional verification sample.

The proposed excavation area identified in Figure 3 was considered to be the exposure area (EA), the area to which a receptor would likely be exposed to the soil. To conduct the verification sampling, a sampling grid was placed over the excavation area. Equally sized sampling grids, 40 feet by 60 feet, served as the sampling areas (SA). Within each SA, six grab samples were collected and used to create a composite sample. The sample was analyzed within 48 to 72 hours following collection. If a single composite sample result exceeded the screening criteria, additional excavation or investigation was only required within the smaller SA area.

The grab sample locations shown on Figure 3 were chosen by marking the centers of a grid pattern placed over each SA within the proposed excavation area. After removal of waste and contaminated materials, and before collecting the samples, the actual location of the sample points within each SA were randomly selected.

All verification samples were analyzed using Method SW846 8082 and were subjected to data validation. Data validation is an objective systematic process in which analytical data are reviewed to ascertain the validity of the reported results and to identify for the data user the possible limitation of these results. The data validation review evaluated environmental samples for data completeness, holding time compliance, calibration compliance, laboratory blank contamination, surrogate spike recovery, matrix spike recovery, blank spike recovery, internal standard response, serial dilution, sample quantitation, and detection limits. Validation of data was completed in accordance with the procedures outlined in Navy guidance (Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program,

NFESC 20.2-047B) and in accordance with the EPA Region 3 Modifications to the Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review (EPA, September 1994 and EPA, April 1993). TtNUS personnel familiar with sample analysis and reporting performed the data validation.

In an initial round of verification sampling conducted in November 2003 following, all but 2 samples (47-SS-203-1 and 47-SS-204-1) had PCB concentrations that exceeded the RAL. An additional one foot of soil was removed from the exceedance locations in December 2003 and concentrations from all but 1 sample (47-SS-207-2) were less than the RAL. An additional one foot of soil was removed from this SA and the verification sample concentration for this sample was less than the RAL. The preliminary results submitted by the laboratory are presented in Table 1. Overall, two feet of soil were removed in the SAs represented by samples 47-SS-203-1 and 47-SS-204-1. Three feet of soil were removed in the SAs represented by samples 47-SS-201-2, 47-SS-202-2, 47-SS-205-2, 47-SS-206-2, 47-SS-208-2, and 47-SS-209-2. Four feet of soil were removed in the SA represented by sample 47-SS-207-3.

The preliminary results submitted to the team within 48 to 72 hours of sampling indicated that all samples had concentrations of PCBs less than the RAL for total PCBs of 1 mg/kg; however, final results indicated otherwise. The final results submitted to the team are summarized in Table 2 (also in Appendix A) and presented in Figure 3. In the preliminary results, there were only detections of Aroclor 1260. In the final submittal of the data from the laboratory, there were also detections of Aroclor 1254. Consequently, the final results indicate that concentrations exceed the RAL of 1 mg/kg. However, many of the final results are qualified with a "J," indicating that the contaminant was detected, but the numerical result is not a precise representation of the amount that is actually present in the sample.

RISK-BASED SCREENING

Although the final concentrations of PCBs exceed the RAL, a risk-based analysis of the data indicates that risks associated with residential and industrial exposure to soil at SWMU 47 fall within EPA's target risk range (Table 3). A risk-based screening was conducted by comparing the exposure concentrations of the PCBs, represented by the 95 percent upper confidence limit of the mean, with the EPA Region 3 risk-based concentration for residential and industrial exposure. The residential risk is 5.8×10^{-6} and the industrial risk is 1.3×10^{-6} . Because the risks fall within the EPA's target risk range, no further action is warranted.

REFERENCES

EPA (Environmental Protection Agency), 1993. USEPA National Functional Guidelines for Inorganic Data Review as modified for use in USEPA Region III. April.

EPA, 1994. USEPA National Functional Guidelines for Organic Data Review as modified for use in USEPA Region III. September.

TtNUS (Tetra Tech NUS, Inc.) 1999. Work Plans for Site Screening at Area of Concern 2, former Naval Surface Warfare Center White Oak, Silver Spring, Maryland. Prepared for the Engineering Field Activity Chesapeake, Naval Facilities Engineering Command.

TtNUS 2003. Verification Sampling and Analysis Plan for Solid Waste Management Unit 47, former Naval Surface Warfare Center White Oak, Silver Spring, Maryland. Prepared for the Engineering Field Activity Chesapeake, Naval Facilities Engineering Command.

TtNUS 2004. Site Screening Report for Area of Concern 2, former Naval Surface Warfare Center White Oak, Silver Spring, Maryland. Prepared for the Engineering Field Activity Chesapeake, Naval Facilities Engineering Command.

Table 1
Round 2 Verification Sampling
Preliminary Laboratory Analysis
SWMU 47--Former Wastewater Treatment Plant
Former NSWC White Oak
Silver Spring, Maryland

Analyte (ug/kg)	47SS201-2	47SS202-2	47SS205-2	47SS206-2	47SS207-2	47SS207-3	47SS208-2	47SS209-2
Aroclor 1016	33 U	33 U	33 U	33 U	160 U	37 U	33 U	33 U
Aroclor 1221	33 U	33 U	33 U	33 U	160 U	37 U	33 U	33 U
Aroclor 1232	33 U	33 U	33 U	33 U	160 U	37 U	33 U	33 U
Aroclor 1242	33 U	33 U	33 U	33 U	160 U	37 U	33 U	33 U
Aroclor 1248	33 U	33 U	33 U	33 U	160 U	37 U	33 U	33 U
Aroclor 1254	33 U	33 U	33 U	33 U	160 U	37 U	33 U	33 U
Aroclor 1260	950	600	620	920	2300	760	500	340

Samples collected 12/11/03

Sample 47SS207-3 collected on 12/23/03

U - not detected at concentration shown.

Table 2
Verification Sampling
Final Laboratory Analysis
SWMU 47--Former Wastewater Treatment Plant
Former NSWC White Oak
Silver Spring, Maryland

location	47SS201	47SS201	47SS201	47SS202	47SS203	47SS204	47SS205	47SS206	47SS207	47SS208	47SS209
nsample	47SS201-2	47SS201-2-AVG	47SS201-2-D	47SS202-2	47SS203	47SS204	47SS205-2	47SS206-2	47SS207-3	47SS208-2	47SS209-2
sacode	ORIG	AVG	DUP	NORMAL							
depth_rang	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
sample_dat	12/11/2003	12/11/2003	12/11/2003	12/11/2003	11/19/2003	11/19/2003	12/11/2003	12/11/2003	12/23/2003	12/11/2003	12/11/2003
validated	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
coll_metho	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE
Pesticides/PCBs (ug/kg)											
AROCLOR-1016	37 U	35.5 U	34 U	35 U	36 U	36 U	35 U	36 U	37 U	36 U	35 U
AROCLOR-1221	37 U	35.5 U	34 U	35 U	36 U	36 U	35 U	36 U	37 U	36 U	35 U
AROCLOR-1232	37 U	35.5 U	34 U	35 U	36 U	36 U	35 U	36 U	37 U	36 U	35 U
AROCLOR-1242	37 U	35.5 U	34 U	35 U	36 U	36 U	35 U	36 U	37 U	36 U	35 U
AROCLOR-1248	37 U	35.5 U	34 U	35 U	36 U	36 U	35 U	36 U	37 U	36 U	35 U
AROCLOR-1254	1700 J	1500 J	1300 J	830 J	36 U	36 U	1000 J	1500 J	37 U	790 J	560 J
AROCLOR-1260	1100	985	870	640	380	330	660 J	1000 J	760	540 J	370 J

U - not detected at concentration shown

J - estimated value

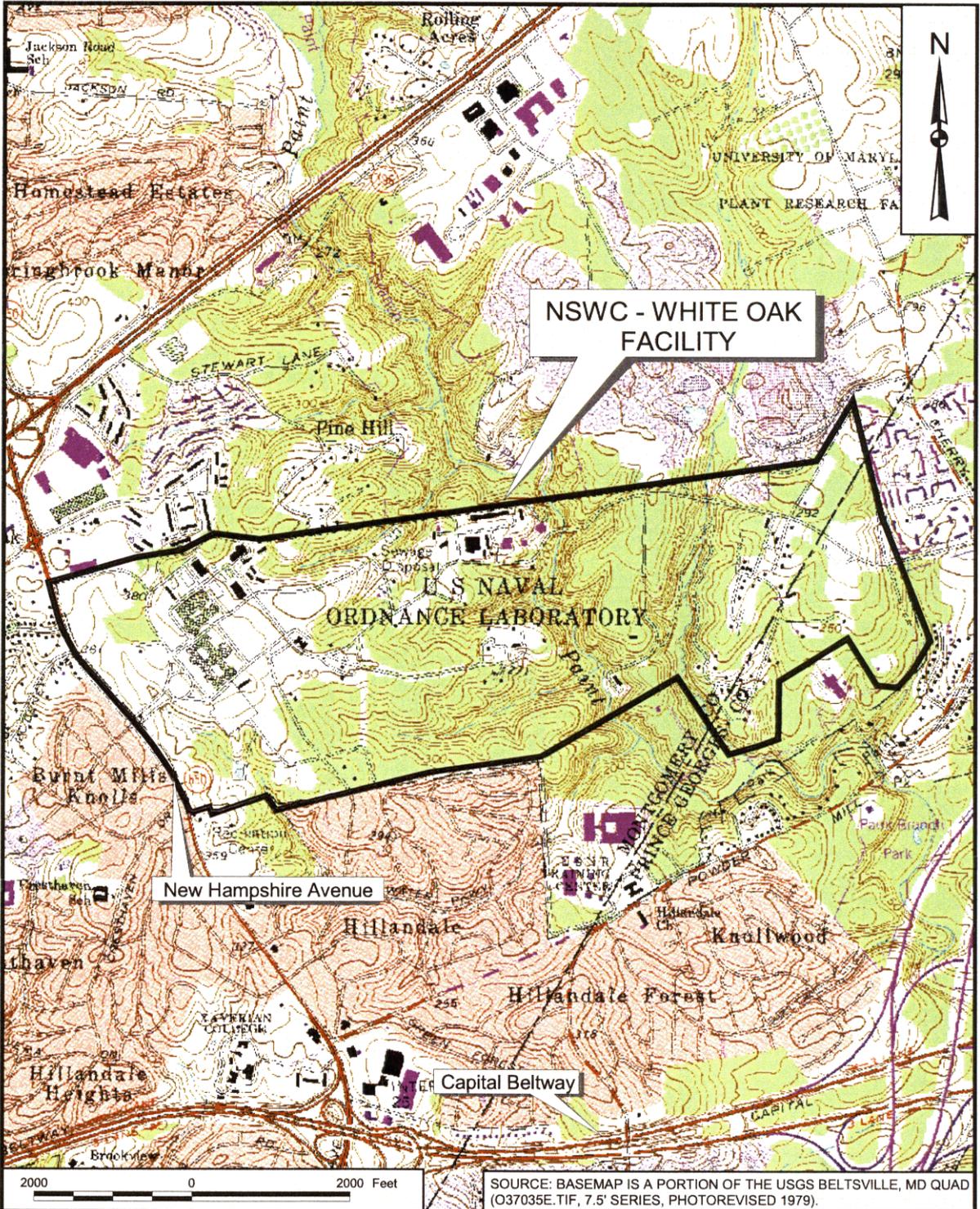
Table 3
Risk-Based Screening
SWMU 47--Former Wastewater Treatment Plant
Former NSWC White Oak
Silver Spring, Maryland

Analyte	Maximum	Mean	UCL	RBC (Res)	RBC (Ind)	Risk (Res)	Risk (Ind)
Aroclor 1254	1500	693	1060	320	1400	3.3E-06	7.6E-07
Aroclor 1260	1000	329	786	320	1400	2.5E-06	5.6E-07
TOTAL RISKS						5.8E-06	1.3E-06

RBC (Res) - EPA Region 3 Residential Risk-Based Concentration

RBC (Ind) - EPA Region 3 Industrial Risk-Based Concentration

UCL - 95% upper confidence limit of the mean



NSWC - WHITE OAK FACILITY

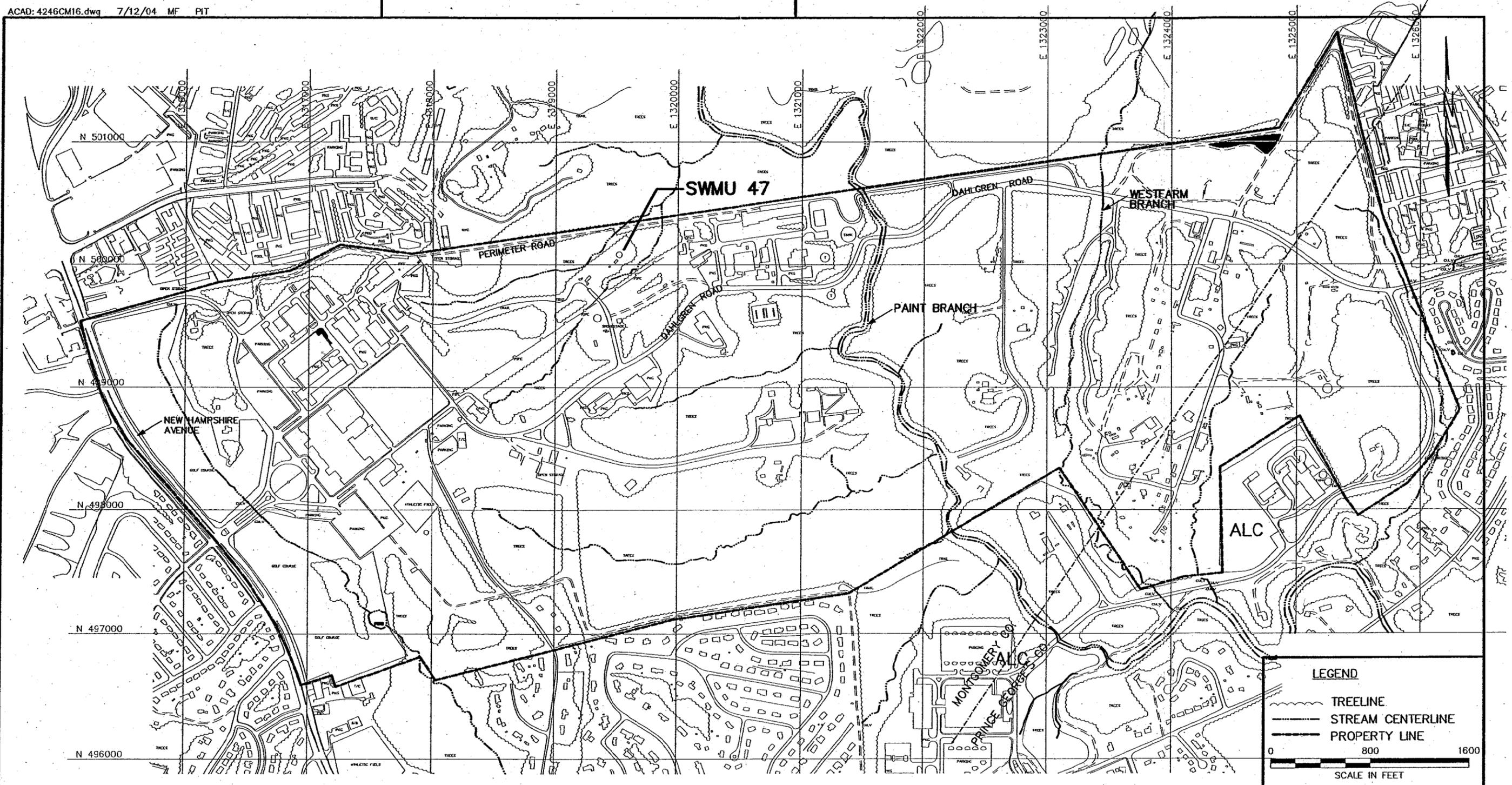
New Hampshire Avenue

Capital Beltway



SOURCE: BASEMAP IS A PORTION OF THE USGS BELTSVILLE, MD QUAD (037035E.TIF, 7.5' SERIES, PHOTOREVISED 1979).

DRAWN BY J. BELLONE	DATE 7/22/99	Tetra Tech NUS, Inc.	CONTRACT NUMBER 4246	OWNER NO. 0839
CHECKED BY R. KOTUN	DATE 3/04/04		APPROVED BY 	DATE
COST/SCHEDULE-AREA 		SITE VICINITY MAP FORMER NSWC WHITE OAK SILVER SPRING, MARYLAND	APPROVED BY 	DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1	REV 0



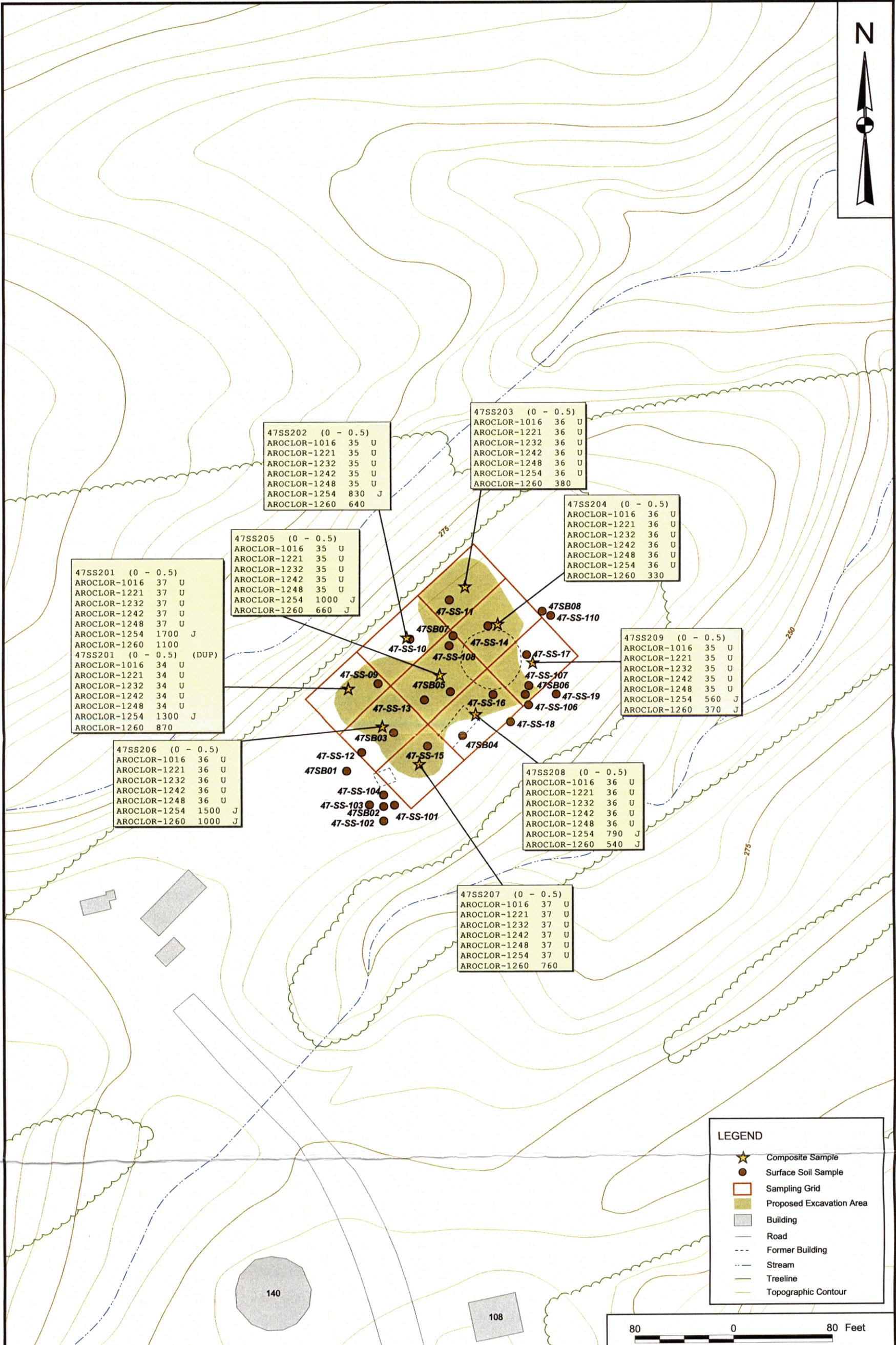
NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY MF DATE 7/12/04
 CHECKED BY DATE
 COST/SCHED-AREA
 SCALE AS NOTED

Tetra Tech NUS, Inc.
 SITE LOCATION MAP
 SWMU 47
 FORMER NSWC-WHITE OAK, SILVER SPRING, MARYLAND

CONTRACT NO. 4246	OWNER NO.
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV. 0

00770D02Z



47SS201 (0 - 0.5)

AROCLOR-1016	37	U
AROCLOR-1221	37	U
AROCLOR-1232	37	U
AROCLOR-1242	37	U
AROCLOR-1248	37	U
AROCLOR-1254	1700	J
AROCLOR-1260	1100	
47SS201 (0 - 0.5) (DUP)		
AROCLOR-1016	34	U
AROCLOR-1221	34	U
AROCLOR-1232	34	U
AROCLOR-1242	34	U
AROCLOR-1248	34	U
AROCLOR-1254	1300	J
AROCLOR-1260	870	

47SS202 (0 - 0.5)

AROCLOR-1016	35	U
AROCLOR-1221	35	U
AROCLOR-1232	35	U
AROCLOR-1242	35	U
AROCLOR-1248	35	U
AROCLOR-1254	830	J
AROCLOR-1260	640	

47SS203 (0 - 0.5)

AROCLOR-1016	36	U
AROCLOR-1221	36	U
AROCLOR-1232	36	U
AROCLOR-1242	36	U
AROCLOR-1248	36	U
AROCLOR-1254	36	U
AROCLOR-1260	380	

47SS204 (0 - 0.5)

AROCLOR-1016	36	U
AROCLOR-1221	36	U
AROCLOR-1232	36	U
AROCLOR-1242	36	U
AROCLOR-1248	36	U
AROCLOR-1254	36	U
AROCLOR-1260	330	

47SS205 (0 - 0.5)

AROCLOR-1016	35	U
AROCLOR-1221	35	U
AROCLOR-1232	35	U
AROCLOR-1242	35	U
AROCLOR-1248	35	U
AROCLOR-1254	1000	J
AROCLOR-1260	660	J

47SS209 (0 - 0.5)

AROCLOR-1016	35	U
AROCLOR-1221	35	U
AROCLOR-1232	35	U
AROCLOR-1242	35	U
AROCLOR-1248	35	U
AROCLOR-1254	560	J
AROCLOR-1260	370	J

47SS206 (0 - 0.5)

AROCLOR-1016	36	U
AROCLOR-1221	36	U
AROCLOR-1232	36	U
AROCLOR-1242	36	U
AROCLOR-1248	36	U
AROCLOR-1254	1500	J
AROCLOR-1260	1000	J

47SS208 (0 - 0.5)

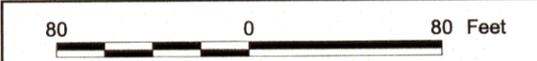
AROCLOR-1016	36	U
AROCLOR-1221	36	U
AROCLOR-1232	36	U
AROCLOR-1242	36	U
AROCLOR-1248	36	U
AROCLOR-1254	790	J
AROCLOR-1260	540	J

47SS207 (0 - 0.5)

AROCLOR-1016	37	U
AROCLOR-1221	37	U
AROCLOR-1232	37	U
AROCLOR-1242	37	U
AROCLOR-1248	37	U
AROCLOR-1254	37	U
AROCLOR-1260	760	

LEGEND

- ★ Composite Sample
- Surface Soil Sample
- Sampling Grid
- Proposed Excavation Area
- ▭ Building
- Road
- - - Former Building
- Stream
- Treeline
- Topographic Contour



DRAWN BY J. LAMEY	DATE 7/16/04		CONTRACT NUMBER 4246	OWNER NUMBER 0839
CHECKED BY R. KOTUN	DATE 7/16/04		APPROVED BY —	DATE —
COST/SCHEDULE-AREA		<p>PROPOSED EXCAVATION AREA/PROPOSED SAMPLING SUMMARY OF EXCEEDANCES - SURFACE SOIL SWMU 47 - FORMER WASTEWATER TREATMENT PLANT SITE FORMER NSWC WHITE OAK SILVER SPRING, MARYLAND</p>	APPROVED BY —	DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 3	REV 0

APPENDIX

ANALYTICAL DATA

SWMU 47
 FORMER WASTEWATER TREATMENT PLANT
 FORMER NSWC WHITE OAK
 SILVER SPRING, MARYLAND

Page 1 of 3

site	047	047	047	047	047	047	047	047
aoc	002	002	002	002	002	002	002	002
swmu	047	047	047	047	047	047	047	047
round	2003Q4	2003Q4	2003Q4	2003Q4	2003Q4	2003Q4	2003Q4	2003Q4
location	47SS201	47SS201	47SS201	47SS201	47SS202	47SS202	47SS202	47SS202
nsample	47SS201	47SS201-2	47SS201-2-AVG	47SS201-2-D	47SS202	47SS202-2	47SS202-AVG	47SS202-D
matrix	SS	SS	SS	SS	SS	SS	SS	SS
sacode	NORMAL	ORIG	AVG	DUP	ORIG	NORMAL	AVG	DUP
depth_rang	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
sample_dat	11/19/2003	12/11/2003	12/11/2003	12/11/2003	11/19/2003	12/11/2003	11/19/2003	11/19/2003

Pesticides/PCBs (ug/kg)

AROCLOR-1016	360 U	37 U	35.5 U	34 U	370 U	35 U	375 U	380 U
AROCLOR-1221	360 U	37 U	35.5 U	34 U	370 U	35 U	375 U	380 U
AROCLOR-1232	360 U	37 U	35.5 U	34 U	370 U	35 U	375 U	380 U
AROCLOR-1242	360 U	37 U	35.5 U	34 U	370 U	35 U	375 U	380 U
AROCLOR-1248	360 U	37 U	35.5 U	34 U	370 U	35 U	375 U	380 U
AROCLOR-1254	360 U	1700 J	1500 J	1300 J	370 U	830 J	375 U	380 U
AROCLOR-1260	6100	1100	985	870	7800	640	6750	5700

SWMU 47
 FORMER WASTEWATER TREATMENT PLANT
 FORMER NSWC WHITE OAK
 SILVER SPRING, MARYLAND

Page 2 of 3

site	047	047	047	047	047	047	047	047
aoc	002	002	002	002	002	002	002	002
swmu	047	047	047	047	047	047	047	047
round	2003Q4							
location	47SS203	47SS204	47SS205	47SS205	47SS206	47SS206	47SS207	47SS207
nsample	47SS203	47SS204	47SS205	47SS205-2	47SS206	47SS206-2	47SS207	47SS207-2
matrix	SS							
sacode	NORMAL							
depth_rang	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
sample_dat	11/19/2003	11/19/2003	11/19/2003	12/11/2003	11/19/2003	12/11/2003	11/19/2003	12/11/2003

Pesticides/PCBs (ug/kg)

AROCLOR-1016	36 U	36 U	36 U	35 U	360 U	36 U	1800 U	180 U
AROCLOR-1221	36 U	36 U	36 U	35 U	360 U	36 U	1800 U	180 U
AROCLOR-1232	36 U	36 U	36 U	35 U	360 U	36 U	1800 U	180 U
AROCLOR-1242	36 U	36 U	36 U	35 U	360 U	36 U	1800 U	180 U
AROCLOR-1248	36 U	36 U	36 U	35 U	360 U	36 U	1800 U	180 U
AROCLOR-1254	36 U	36 U	36 U	1000 J	360 U	1500 J	1800 U	180 U
AROCLOR-1260	380	330	12000	660 J	15000	1000 J	26000	2500

SWMU 47
 FORMER WASTEWATER TREATMENT PLANT
 FORMER NSWC WHITE OAK
 SILVER SPRING, MARYLAND
 Page 3 of 3

site	047	047	047	047	047
aoc	002	002	002	002	002
swmu	047	047	047	047	047
round	2003Q4	2003Q4	2003Q4	2003Q4	2003Q4
location	47SS207	47SS208	47SS208	47SS209	47SS209
nsample	47SS207-3	47SS208	47SS208-2	47SS209	47SS209-2
matrix	SS	SS	SS	SS	SS
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
depth_rang	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
sample_dat	12/23/2003	11/19/2003	12/11/2003	11/19/2003	12/11/2003
Pesticides/PCBs (ug/kg)					
AROCLOR-1016	37 U	360 U	36 U	39 U	35 U
AROCLOR-1221	37 U	360 U	36 U	39 U	35 U
AROCLOR-1232	37 U	360 U	36 U	39 U	35 U
AROCLOR-1242	37 U	360 U	36 U	39 U	35 U
AROCLOR-1248	37 U	360 U	36 U	39 U	35 U
AROCLOR-1254	37 U	360 U	790 J	39 U	560 J
AROCLOR-1260	760	9000	540 J	1000 J	370 J

STATISTICAL ANALYSIS OF DATA
 SWMU 47
 FORMER WASTEWATER TREATMENT PLANT
 FORMER NSWC WHITE OAK
 SILVER SPRING, MARYLAND

Chemical	Raw Statistics																
	Number of Samples	Number of Unique Samples	Number of Detections	Number of Rejections	Frequency of Detection	Minimum Non Detected	Maximum Non Detected	Minimum Detected	Maximum Detected	Mean of All Samples	Mean of Positive Detects	Median	Standard Deviation	Variance	Coefficient of Variation	Skewness	
AROCLOR-1018	9	4	0	0	0%	35	37	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1221	9	4	0	0	0%	35	37	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1232	9	4	0	0	0%	35	37	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1242	9	4	0	0	0%	35	37	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1248	9	4	0	0	0%	35	37	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1254	9	7	6	0	67%	36	37	560	1500	693	1030	790	593	351102	0.855	0.125	
AROCLOR-1260	9	9	9	0	100%	0	0	330	1000	629	629	640	252	63628	0.401	0.376	

Bolded shaded values indicate that frequency of detection is less than 50 percent.

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration.

NA(1) - Not applicable, there are an insufficient number of samples to calculate statistics.

1/2 the detection limit was used for B qualified data.

STATISTICAL ANALYSIS OF DATA

STATISTICAL ANALYSIS OF DATA
 SWMU 47
 FORMER WASTEWATER TREATMENT PLANT
 FORMER NSWC WHITE OAK
 SILVER SPRING, MARYLAND

Chemical	Gamma Statistics									Lognormal Statistics				
	k Hat	k star bais corrected	Theta hat	Theta Star	nu hat	nu star	Approx Chi Square Value (0.05)	Adjusted Level of Significance	Adjusted Chi Square Value	Minimum Detected	Maximum Detected	Mean of Log Data	Standard Deviation	Variance
AROCLOR-1016	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1221	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1232	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1242	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1248	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1254	0.621	0.488	1116	1419	11.2	8.78	3.20	0.023	2.53	6.33	7.31	5.55	2.01	4.05
AROCLOR-1260	6.86	4.65	91.7	135	123	83.7	63.6	0.023	59.9	5.80	6.91	6.37	0.415	0.173

Bolded shaded values indicate that fre
 For non-detects, 1/2 sample quantitati
 NA(1) - Not applicable, there are an in
 1/2 the detection limit was used for B c

STATISTICAL ANALYSIS OF DATA
 SWMU 47
 FORMER WASTEWATER TREATMENT PLANT
 FORMER NSWC WHITE OAK
 SILVER SPRING, MARYLAND

Chemical	Normal Distribution Test				95% UCL	Gamma Distribution Test				
	Distribution Test	Test Statistic	Critical Statistic	Distribution	Student's-t	A-D Test Statistic	A-D 5% Critical Value	K-S Test Statistic	K-S 5% Critical Value	Distribution
AROCLOR-1016	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1221	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1232	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1242	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1248	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1254	Shapiro-Wilk	0.881	0.829	Data are Normal	1060	0.977	0.761	0.246	0.292	Data follows approximate gamma distribution
AROCLOR-1260	Shapiro-Wilk	0.910	0.829	Data are Normal	766	0.341	0.722	0.195	0.280	Data follows approximate gamma distribution

Boiled shaded values indicate that fre
 For non-detects, 1/2 sample quantitati
 NA(1) - Not applicable, there are an in
 1/2 the detection limit was used for B c

STATISTICAL ANALYSIS OF DATA
 SWMU 47
 FORMER WASTEWATER TREATMENT PLANT
 FORMER NSWC WHITE OAK
 SILVER SPRING, MARYLAND

Chemical	95% UCLs		Lognormal Distribution Test				UCL Assuming Lognormal Distribution				
	Approximate Gamma UCL	Adjusted Gamma UCL	Distribution Test	Test Statistic	Critical Statistic	Distribution	H Statistic	H UCL	95% Chebyshev (MVUE) UCL	97.5% Chebyshev (MVUE) UCL	99% Chebyshev (MVUE) UCL
AROCLOR-1016	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1221	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1232	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1242	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1248	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCLOR-1254	1903	2403	Shapiro-Wilk	0.731	0.829	Data not Lognormal	5.88	127254	4796	6341	9374
AROCLOR-1260	828	879	Shapiro-Wilk	0.919	0.829	Data are Lognormal	2.17	876	1015	1181	1508

Bolded shaded values indicate that for non-detects, 1/2 sample quantity was used for the UCL calculation.
 NA(1) - Not applicable, there are an insufficient number of samples to calculate the UCL.
 1/2 the detection limit was used for B c

STATISTICAL ANALYSIS OF DATA
SWMU 47
FORMER WASTEWATER TREATMENT PLANT
FORMER NSWC WHITE OAK
SILVER SPRING, MARYLAND

Chemical	95% Non-parametric UCL												
	Central Limit Theorem	Adjusted-CLT	Modified-t	Jackknife	Standard Bootstrap	Bootstrap-t		Hall's Bootstrap UCL	Percentile Bootstrap UCL	BCA Bootstrap UCL	95% Chebyshev (Mean) Std	97.5% Chebyshev (Mean) Std	99% Chebyshev (Mean) Std
						(5%)	(95%)						
AROCOLOR-1016	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1221	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1232	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1242	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1248	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1254	1018	1026	1061	1060	999	1071	1063	1027	1003	1008	1554	1926	2658
AROCOLOR-1260	768	779	788	786	764	797	776	796	765	765	996	1155	1466

Bolded shaded values indicate that for non-detects, 1/2 sample quantity was used for B c
NA(1) - Not applicable, there are an in 1/2 the detection limit was used for B c

STATISTICAL ANALYSIS OF DATA
 SWMU 47
 FORMER WASTEWATER TREATMENT PLANT
 FORMER NSWC WHITE OAK
 SILVER SPRING, MARYLAND

Chemical	Data Distribution	EPA's ProUCL Recommended UCL to Use		Comments
AROCOLOR-1016	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1221	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1232	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1242	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1248	NA(1)	NA(1)	NA(1)	NA(1)
AROCOLOR-1254	Data are Normal (0.05)	1050	Student-t	--
AROCOLOR-1260	Data are Normal (0.05)	786	Student-t	--

Bolded shaded values indicate that for
 For non-detects, 1/2 sample quantity
 NA(1) - Not applicable, there are an in-
 1/2 the detection limit was used for B c

DATA VALIDATION MEMORANDA

MEMO TO: R. KOTUN
DATE: January 23, 2004 - PAGE 2

Notes

Sample 47SS205 was diluted (10X) and reanalyzed because the concentration of Aroclor-1260 exceeded the calibration range (flagged "E" by the laboratory). The Aroclor-1260 result (12,000 ug/kg) reported for this sample in the qualified analytical results is reported from the reanalysis. All other results for this sample are reported from the undiluted analysis.

Samples 47SS201, 47SS202, 47SS206, 47SS208, and FD11190301 were analyzed at a 10X dilution because of high Aroclor-1260 concentrations. Sample 47SS207 was analyzed at a 50X dilution.

The matrix spike duplicate (MSD) for Aroclor-1260 exceeded the quality control limit. No results were qualified on the basis of the MSD recovery because the concentration in the sample (8,900 ug/kg) was much greater than the spiked amount (370 ug/kg).

The field duplicate comparison is presented in Appendix C.

The laboratory reported the lower of the two analytical column results.

Executive Summary

Laboratory Performance: Surrogate recoveries for tetrachloro-m-xylene in one sample were high. Other quality control results for parameters affecting laboratory performance were acceptable

Other Factors Affecting Data Quality: The matrix spike duplicate recovery and relative percent difference for Aroclor-1260 exceeded the quality control limit.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation", (9/94) as amended for use within USEPA Region III, and the NFESC document entitled "Navy IRCDQM" (September 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."



Tetra Tech NUS
Thomas Jackman
Chemist



Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

MEMO TO: R. KOTUN
DATE: January 23, 2004 - PAGE 3

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation.

Data Qualifier Key:

- B - Positive result is considered to be an artifact of blank contamination and should not be considered present.
- U - Value is a nondetect as reported by the laboratory.
- J - Positive result is considered estimated, "J", as a result of validation noncompliances.
- UJ - Quantitation limit is considered estimated, "UJ", as a result of validation noncompliances.
- R - Positive result is considered rejected, "R", as a result of severe validation noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
- D = MS/MSD Noncompliance
- E = LCS/LCSD Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = GFAA PDS - GFAA MSA's $r < 0.995$
- K = ICP Interference - include ICSAB % R's
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation
- N = Internal Standard Noncompliance
- N01 = Internal Standard Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-line drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = Pest/PCD% between columns for positive results
- V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4246

SDG: B1839 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample 47SS201
samp_date 11/19/2003
lab_id B1839-01A
qc_type NM
units UG/KG
Pct_Solids 90.0
DUP_OF:

nsample 47SS202
samp_date 11/19/2003
lab_id B1839-02A
qc_type NM
units UG/KG
Pct_Solids 89.0
DUP_OF: FD11190301

nsample 47SS203
samp_date 11/19/2003
lab_id B1839-03A
qc_type NM
units UG/KG
Pct_Solids 90.0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	360	U	
AROCLOR-1221	360	U	
AROCLOR-1232	360	U	
AROCLOR-1242	360	U	
AROCLOR-1248	360	U	
AROCLOR-1254	360	U	
AROCLOR-1260	6100		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	370	U	
AROCLOR-1221	370	U	
AROCLOR-1232	370	U	
AROCLOR-1242	370	U	
AROCLOR-1248	370	U	
AROCLOR-1254	370	U	
AROCLOR-1260	7800		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	380		

PROJ_NO: 4246

SDG: B1839 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample 47SS204
samp_date 11/19/2003
lab_id B1839-04A
qc_type NM
units UG/KG
Pct_Solids 92.0
DUP_OF:

nsample 47SS205
samp_date 11/19/2003
lab_id B1839-05A
qc_type NM
units UG/KG
Pct_Solids 91.0
DUP_OF:

nsample 47SS206
samp_date 11/19/2003
lab_id B1839-06A
qc_type NM
units UG/KG
Pct_Solids 92.0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	330		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	12000		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	360	U	
AROCLOR-1221	360	U	
AROCLOR-1232	360	U	
AROCLOR-1242	360	U	
AROCLOR-1248	360	U	
AROCLOR-1254	360	U	
AROCLOR-1260	15000		

PROJ_NO: 4246

SDG: B1839 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample 47SS207
 samp_date 11/19/2003
 lab_id B1839-07A
 qc_type NM
 units UG/KG
 Pct_Solids 91.0
 DUP_OF:

nsample 47SS208
 samp_date 11/19/2003
 lab_id B1839-08A
 qc_type NM
 units UG/KG
 Pct_Solids 90.0
 DUP_OF:

nsample 47SS209
 samp_date 11/19/2003
 lab_id B1839-09A
 qc_type NM
 units UG/KG
 Pct_Solids 83.0
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1800	U	
AROCLOR-1221	1800	U	
AROCLOR-1232	1800	U	
AROCLOR-1242	1800	U	
AROCLOR-1248	1800	U	
AROCLOR-1254	1800	U	
AROCLOR-1260	26000		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	360	U	
AROCLOR-1221	360	U	
AROCLOR-1232	360	U	
AROCLOR-1242	360	U	
AROCLOR-1248	360	U	
AROCLOR-1254	360	U	
AROCLOR-1260	9000		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	1000	J	R

PROJ_NO: 4246

SDG: B1839 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample FD11190301
samp_date 11/19/2003
lab_id B1839-10A
qc_type NM
units UG/KG
Pct_Solids 87.0
DUP_OF: 47SS202

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	380	U	
AROCLOR-1221	380	U	
AROCLOR-1232	380	U	
AROCLOR-1242	380	U	
AROCLOR-1248	380	U	
AROCLOR-1254	380	U	
AROCLOR-1260	5700		

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DATE: 02/09/04 SDG - B1914

47SS206-2	Aroclor-1254	28.6%	J
	Aroclor-1260	26.1%	J
47SS208-2	Aroclor-1254	32.8%	J
	Aroclor-1260	28.6%	J
47SS209-2	Aroclor-1254	32.8%	J
	Aroclor-1260	29.9%	J
FD12110301	Aroclor-1254	32.2%	J

Notes

Sample 47SS207-2 required a dilution due to a high concentration of Aroclor-1260, which resulted in elevated reporting limits for all non-detected PCBs. The laboratory reported the lower of the two column results. No action was taken on this basis.

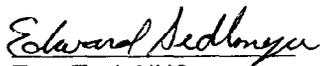
EXECUTIVE SUMMARY

Laboratory Performance Issues: Qualifications were made based percent difference between analytical columns.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III and the NFESC guidelines "Navy IRCDQM" (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."


TetraTech NUS

Edward Sedlmyer
Chemist/Data Validator


TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = GFAA PDS - GFAA MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $< CRQL$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors $> 25\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4246

SDG: B1914 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample 47SS201-2
samp_date 12/11/2003
lab_id B1914-03A
qc_type NM
units UG/KG
Pct_Solids 89.0
DUP_OF:

nsample 47SS202-2
samp_date 12/11/2003
lab_id B1914-04A
qc_type NM
units UG/KG
Pct_Solids 93.0
DUP_OF:

nsample 47SS205-2
samp_date 12/11/2003
lab_id B1914-05A
qc_type NM
units UG/KG
Pct_Solids 94.0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	1700	J	U
AROCLOR-1260	1100		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	830	J	U
AROCLOR-1260	640		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	1000	J	U
AROCLOR-1260	660	J	U

PROJ_NO: 4246

SDG: B1914 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample 47SS206-2
 samp_date 12/11/2003
 lab_id B1914-02A
 qc_type NM
 units UG/KG
 Pct_Solids 91.0
 DUP_OF: \

nsample 47SS207-2
 samp_date 12/11/2003
 lab_id B1914-01A
 qc_type NM
 units UG/KG
 Pct_Solids 92.0
 DUP_OF:

nsample 47SS208-2
 samp_date 12/11/2003
 lab_id B1914-06A
 qc_type NM
 units UG/KG
 Pct_Solids 92.0
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	1500	J	U
AROCLOR-1260	1000	J	U

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	180	U	
AROCLOR-1221	180	U	
AROCLOR-1232	180	U	
AROCLOR-1242	180	U	
AROCLOR-1248	180	U	
AROCLOR-1254	180	U	
AROCLOR-1260	2500		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	790	J	U
AROCLOR-1260	540	J	U

PROJ_NO: 4246

SDG: B1914 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample 47SS209-2
samp_date 12/11/2003
lab_id B1914-07A
qc_type NM
units UG/KG
Pct_Solids 93.0
DUP_OF:

nsample FD12110301
samp_date 12/11/2003
lab_id B1914-08A
qc_type NM
units UG/KG
Pct_Solids 97.0
DUP_OF: 47SS201-2

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	560	J U	
AROCLOR-1260	370	J U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	34	U	
AROCLOR-1221	34	U	
AROCLOR-1232	34	U	
AROCLOR-1242	34	U	
AROCLOR-1248	34	U	
AROCLOR-1254	1300	J U	
AROCLOR-1260	870		

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III and the NFESC guidelines "Navy IRCDQM" (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

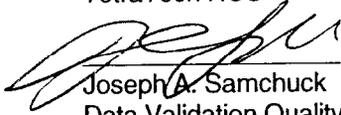
"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

TetraTech NUS



Douglas S. Schloer
Chemist/Data Validator

TetraTech NUS



Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = GFAA PDS - GFAA MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors $>25\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4246

SDG: B1965 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample 47SS207-3
samp_date 12/23/2003
lab_id B1965-01A
qc_type NM
units UG/KG
Pct_Solids 89.0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	760		