N65928.AR.003075
NTC ORLANDO
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WORK PLAN WITH TRANSMITTAL FOR ADDITIONAL WELL ABANDONMENT AT OPERABLE UNIT (OU) 4 NTC ORLANDO FL

3/13/2014

RESOLUTION CONSULTANTS

RESOLUTION CONSULTANTS

Subject: **Work Plan for Additional Well Abandonment at OU 4, Former Naval Training Center, Orlando, Florida**

Prepared For: David Grabka, FDEP

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Jessica Keener, Solutions IES

Date: March 13, 2014

On behalf of the Navy, Resolution Consultants (RC) has prepared this technical memorandum presenting the proposed work activities associated with additional well abandonments at Operable Unit (OU) 4, former Naval Training Center (NTC) Orlando, Florida. This work is being performed under Comprehensive Long-term Environmental Action Navy (CLEAN) Contract N62470-11-D-8013, Contract Task Order (CTO) No. JM42.

In October 2013, RC abandoned wells associated with historic OU 4 remedial actions. These wells included groundwater recovery wells, injection wells and extraction wells, as proposed in the *Work Plan for Well Abandonment Tech Memo* (RC, September 2013).

Additional wells at OU 4 including monitoring wells were proposed for abandonment in the *Long Term Monitoring Optimization Report for OU 4* (RC, November 2013). However, following further review, several of these wells are no longer recommended for abandonment:

- The DP wells near the lake may provide future value.
- Piezometer P-5 could not be located. This piezometer was likely abandoned during the demolition of Building 1100 (*Construction Completion Report for the Demolition of Building 1100*, AGVIQ CH2MHILL, May 2004)
- The GMPs have been abandoned previously. (Note, VMPs were installed to depths of 2 feet bls adjacent to most of the GMPs; the VMPs do not significantly intersect the water table and are not technically water wells.)
- SA 13 monitoring wells OLD-13-06C, OLD-13-50A and OLD-13-51B may provide future value for the evaluation of the extent of chlorinated solvent and/or antimony contamination upgradient and sidegradient of the known plume area.
- SA 14 monitoring wells OLD-14-06A and OLD-14-07A may provide future value for the evaluation of the extent of antimony contamination upgradient of the known plume area. Monitoring well OLD-14-02A needs to be sampled for antimony to show two rounds of clean data prior to abandonment.

Therefore, RC proposes to properly abandon six monitoring wells (OLD-12-02A, OLD-12-03A, OLD-12-04A, OLD-14-01A, OLD-13-33A and OLD-13-34B) and ten piezometers (P-1 through P-4 and P-6 through P-11) located on the south and eastern sides of the OU 4 site. These wells are not necessary for the evaluation of remaining groundwater contamination and have been clean for at least two sampling events. **Table 1** is a list of the monitoring wells and piezometers proposed for abandonment, and **Figure 1** is a well location map.

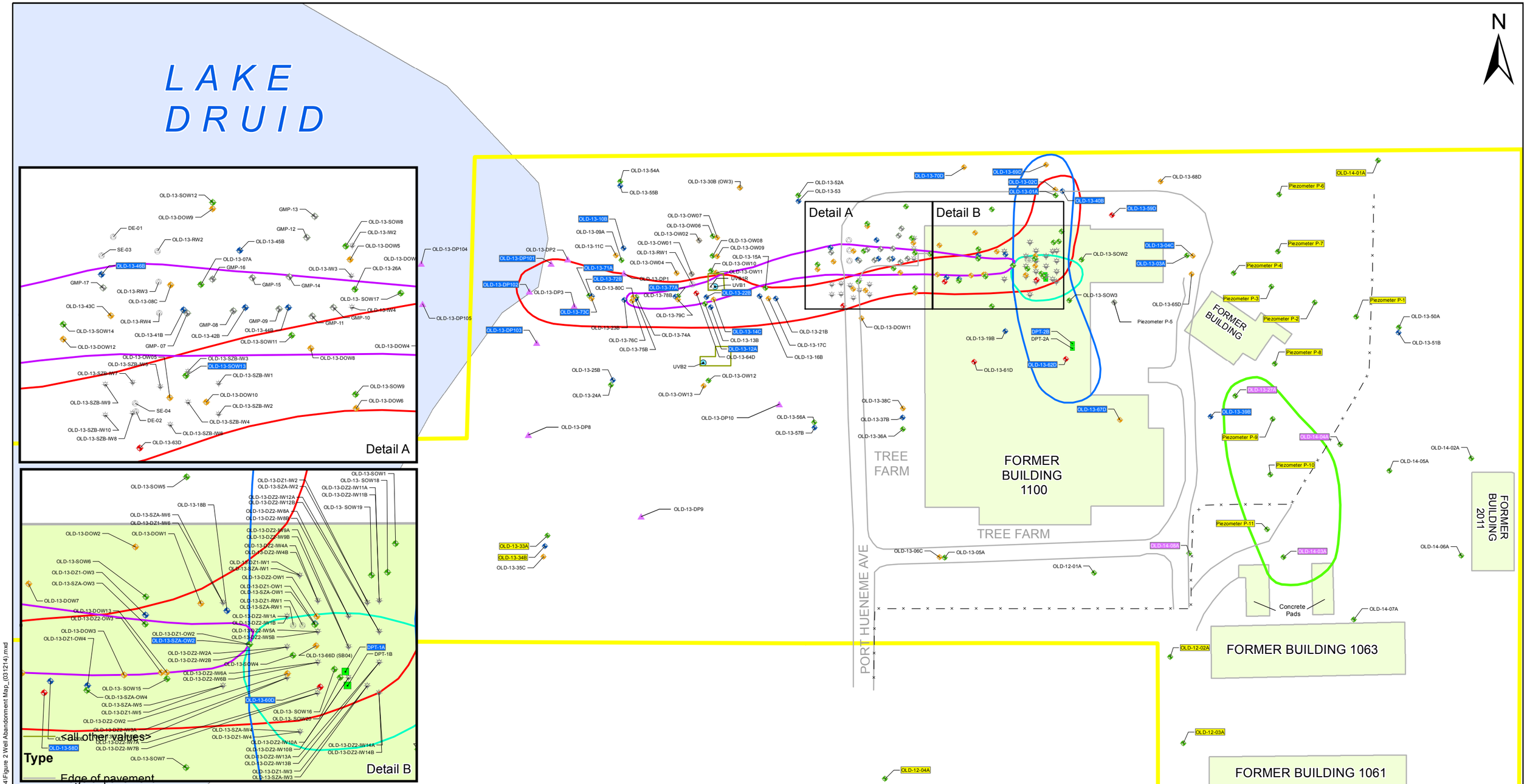
Historical analytical data from the monitoring wells proposed for abandonment is provided in **Attachment A**. NIRIS analytical data records were searched to determine the most recent sampling dates for these wells.

- SA 12 wells OLD-12-02A, OLD-12-03A and OLD-12-04A and SA 14 well OLD-14-01A were sampled in April 1995 and February 1998. The 1995 data was provided in the *Base Realignment and Closure Environmental Site-Screening Reports* for SA 12 and SA 14, both prepared by ABB Environmental Services, Inc. in July 1996. The 1998 data was provided in the *Remedial Investigation* (Harding Lawson Associates, January 2001).
- SA 13 wells OLD-13-33A and OLD-13-34B were sampled as recently as November 2008. November 2008 data was provided in the *Monitoring and Maintenance Status Report* (CH2MHill Constructors, Inc. [CCI], April 2009) and January 2008 data was provided in the *Monitoring and Maintenance Status Report* (CCI, June 2008). In November 2005, PCE was detected at 9.7 μg/L in OLD-13-33A; however, previous to this event and during the 2006, 2007 and 2008 monitoring period, PCE concentrations in this well were below laboratory detection limits (CCI, June 2008). Note, no analytical data was found for OLD-13-35C, either in historical reports or NIRIS. This well is not proposed for abandonment.
- No analytical data was found in NIRIS for the piezometers. According to the *Work Plan for Remedial Action Optimization Activities* (CCI, July 2003), the piezometers were installed to assess groundwater impacts (i.e., drawdown) attributed to the cottonwood and poplar trees in the phytoremediation plantation.

Well abandonment permits will be obtained prior to mobilization. A licensed driller will properly abandon all wells by grouting to the surface. All work will be performed in accordance with the Former NTC Orlando Health and Safety Plan (RC, revised March 2013). Well abandonment will be by grouting from the bottom up. Tremie pipe will be lowered to the bottom of wells, and then grout will be pumped to the bottom of the well through the tremie pipe until the grout mixture rises in the well to the top of casing. All monitoring wells proposed for abandonment are flush mounted and well pads will be left in place. The PVC risers on the piezometers will be removed and properly disposed offsite. A comprehensive Technical Memorandum Report of Well Abandonment will be prepared for OU 4, including wells abandoned in October 2013.

Table 1
Proposed Well Abandonment Summary
OU 4, NTC Orlando, Florida
March 2014

No.	WELL DESIGNATION	WELL ALIAS	TYPE	WELL INNER DIAMETER (inch)	WELL COMPLETION	SCREEN MATERIAL	CASING MATERIAL	DATE INSTALLED	TOP OF SCREEN (ft bgs)	BOTTOM OF SCREEN (ft bgs)
1	OLD-12-02A	OLD-12-02	MW	2	Flush	Sch 40 PVC	Sch 40 PVC	2/27/1995	5	15
2	OLD-12-03A	OLD-12-03	MW	2	Flush	Sch 40 PVC	Sch 40 PVC	2/28/1995	5	15
3	OLD-12-04A	OLD-12-04	MW	2	Flush	Sch 40 PVC	Sch 40 PVC	2/25/1995	5	15
4	OLD-13-33A	OLD-13-33	MW	2	Flush	Sch 40 PVC	Sch 40 PVC	12/17/1997	2.5	12.5
5	OLD-13-34B	OLD-13-34	MW	2	Flush	Sch 40 PVC	Sch 40 PVC	12/17/1997	20	25
6	OLD-14-01A	OLD-14-01	MW	2	Flush	PVC	Sch 40 PVC	3/27/1995	3	13
7	Piezometer P-1	P-01	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
8	Piezometer P-2	P-02	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
9	Piezometer P-3	P-03	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
10	Piezometer P-4	P-04	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
11	Piezometer P-6	P-06	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
12	Piezometer P-7	P-07	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
13	Piezometer P-8	P-08	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
14	Piezometer P-9	P-09	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
15	Piezometer P-10	P-10	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10
16	Piezometer P-11	P-11	PZ	2	PVC riser/no bollards	Sch 40 PVC	Sch 40 PVC	2003	5	10



Legend

- Fence Line
- Estimated Extent of VOC > GCTL - Intermediate Surficial Aquifer
- Estimated Extent of VOC > GCTL - Hawthorn Aquifer
- Estimated Extent of VOC > GCTL - Deep Aquifer
- Estimated Extent of VOC > GCTL - Surficial Aquifer
- Estimated Extent of Antimony > GCTL - Surficial Aquifer
- Operable Unit 4 Boundary
- Former Building

Active Wells

- Zone A - Shallow
- Zone B - Intermediate
- Zone C - Deep
- Zone D - Hawthorne
- UVB Well
- Drive Point
- DPT Well

Wells Abandoned or Destroyed

- Monitoring Well Abandoned or Destroyed
- UVB Well Abandoned
- Abandoned Extraction/Recovery Well
- Abandoned Injection Well

OLD-13-37B Monitoring Wells Recommended for VOC Sampling

OLD-13-27A Monitoring Wells Recommended for Antimony Sampling

OLD-14-01A Monitoring Wells Recommended for Abandonment

0 90 180 360 Feet

1 inch = 90 feet

Note:
Monitoring Well OLD-17-53 is a multi-chamber well screened in zones B1, B2, C1 and C2.

DRAWN BY M. MARTIN	DATE 03/12/14	FIGURE 1 WELL LOCATION MAP Operable Unit 4 NAVAL TRAINING CENTER ORLANDO ORLANDO, FLORIDA	CONTRACT NUMBER N62470-11-D-8013 / CTO NUMBER JM42
CHECKED BY M. SWEENEY	DATE 03/12/14		APPROVED BY ___ / DATE ___
REVISED BY ___	DATE ___		APPROVED BY ___ / DATE ___
SCALE AS NOTED			FIGURE NO. 1 / REV 0

L:\projects\Navy CLEAN\NTC Orlando\9.0_Geospatial\MXDs\OU4\Figure 2 Well Abandonment Map_(031214).mxd

ATTACHMENT A

01.03.12.0001

00044

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE-SCREENING REPORT

STUDY AREA 12

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Unit Identification Code: N65928

Contract No. N62467-89-D-0317/107

Prepared by:

ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301

Prepared for:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418

Barbara Nwokike, Code 1873, Engineer-in-Charge

July 1996

Table B-3
Summary of Detections In Groundwater Analytical Results, Study Area 12

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Weel ID:	Background [1] Screening	FDEPG	FEDMCL	RBC[2] for Tap Water	OLD-12-01A	OLD-12-02A	OLD-12-03A	OLD-12-04A
Lab Identifier:					12G00101	12G00201	12G00301	12G00401
Collection Date:					03/09/95	03/09/95	03/09/95	03/09/95
Volatile Organic Compounds (µg/ℓ)								
Trichloroethene	–	[3]3	5	1.6 c	2	–	–	–
Tetrachloroethene	–	[3]3	5	11 c	8	–	–	–
Inorganic Analytes (µg/ℓ)								
Aluminum	4,067	[4]200	–	37,000 n	409	930	179 B	486
Barium	31.4	[3]2,000	2,000	2,600 n	9.9 B	4.9 B	11.2 B	7.2 B
Beryllium	–	[3]4	4	0.016 c	1.1 B	0.31 B	–	–
Cadmium	5.6	[3]5	5	18 n	3.2 B	–	–	–
Calcium	36,830	ND	ND	1,000,000	125,000	33,300	46,200	48,100
Iron	1,227	[4]300	ND	11,000 n	223	34.9 B	54.6 B	27.1 B
Magnesium	4,560	ND	ND	118,807	5,030	2,610 B	3,890 B	1,680 B
Manganese	17.0	[4]50	ND	840 n	26.7	4.9 B	32.8	4.9 B
Mercury	0.12	[3]2	2	11 n	0.12 B	0.12 B	–	0.12 B
Potassium	5,400	ND	ND	297,016	1,380 B	1,860 B	3,560 B	911 B
Selenium	9.7	[3]50	50	180 n	–	–	5.5	3.1 B
Sodium	18,222	[3]160,000	ND	396,022	29,700	2,860 B	5,910	2,600 B
Vanadium	20.6	[5]49	ND	260 n	3.3 B	6.8 B	4 B	6.8 B

See notes at end of table.

Table B-3 (Continued)
Summary of Detections in Groundwater
Analytical Results, Study Area 12

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Well ID:	Background [1] Screening	FDEPG	FEDMCL	RBC[2] for Tap Water	OLD-12-01A	OLD-12-02A	OLD-12-03A	OLD-12-04A
Lab Identifier:					12G00101	12G00201	12G00301	12G00401
Collection Date:					03/09/95	03/09/95	03/09/95	03/09/95

[1] Groundwater background screening value is twice the average of detected concentrations for inorganic analytes. For organic compounds, values are the mean of detected concentration, presented for comparison purposes only.
[2] RBC = Risk-Based Concentration Table, U.S. Environmental Protection Agency (USEPA) Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is treatment technology action limit for lead in drinking water distribution system identified in Drinking Water Standards and Health Advisories (USEPA, 1995). For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances.
[3] Primary standard.
[4] Secondary standard.
[5] Systemic toxicant.

Notes: BRAC = Base Realignment and Closure.
ID = identifier.
FDEPG = Florida Department of Environmental Protection, Groundwater Guidance Concentrations, June 1994.
FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, February 1996.
$\mu g/\ell$ = microgram per liter.
-- = analyte/compound was not detected at reporting limit.
c = carcinogenic effects.
n = noncarcinogenic effects.
B = reported concentration is between the instrument detection limit and the contract required detection limit.
ND = not determined.
▒ = bolded/shaded value indicate exceedance of regulatory guidance and background.

01.03.14.0001

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE-SCREENING REPORT

000446

STUDY AREA 14

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Unit Identification Code: N65928

Contract No. N62467-89-D-0317/107

Prepared by:

ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301

Prepared for:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418

Barbara Nwokike, Code 1873, Engineer-in-Charge

July 1996

Table D-3
Summary of Detections in Groundwater
Analytical Results, Study Area 14

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Lab Identifier: Collection Data: Feet bls:	Background [1] Screening	FDEPG	FEDMCL	RBC [2] for Tap Water	OLD-14-01A 14G00101 04/06/95	OLD-14-02A 14G00201 04/06/95	OLD-14-03A 14G00301 03/10/95	OLD-14-03A 14G00302 06/08/95	OLD-14-04A 14G00401 04/06/95	OLD-14-04A 14G00401D 04/06/95
Volatile Organic Compounds (µg/ℓ)										
Methylene chloride	–	[3]5	5	0.15 c	–	2 J	–	NA	–	–
Chloroform	2.4	[4]6	100	0.15 c	–	0.2 J	–	NA	–	–
Trichloroethene	–	[3]5	5	1.6 c	–	–	–	NA	20 J	19 J
Tetrachloroethene	–	[3]5	5	1.1 c	–	1.37 J	–	NA	46	45
Semivolatile Organic Compounds (µg/ℓ)										
bis(2-Ethylhexyl)phthalate	–	[3]6	6	4.8 c	–	–	33 D	–	–	–
Dimethylphthalate	–	[5]70,000	ND	370,000 n	–	–	–	–	–	1 J
Phenol	–	–	–	22,000 n	–	–	–	1 J	–	–
Inorganic Analytes (µg/ℓ)										
Aluminum	4,067	[6]200	200	37,000 n	105 B	81.6 B	–	NA	143 B	121 B
Antimony	4.1	[3]6	6	15 n	–	10.1 B	17.6	NA	10.6 B	10.4 B
Arsenic	5.0	[3]50	50	0.045 c/11 n	1.9 B	2 B	–	NA	–	–
Barium	31.4	[3]2,000	2,000	2,600 n	11.6 B	4.5 B	5.7 B	NA	5.8 B	5.3 B
Beryllium	–	[3]4	4	0.016 c	0.1 B	–	–	NA	0.15 B	–
Calcium	36,830	ND	ND	1,000,000	37,200	28,100	95,500	NA	31,600	31,600
Iron	1,227	[6]300	ND	11,000 n	191	8 B	32.6 B	NA	142	145
Magnesium	4,560	ND	ND	118,807	1,280 B	2,320 B	6,740	NA	2,000 B	2,020 B
Manganese	17.0	[6]50	ND	840 n	7.4 B	3.5 B	9.4 B	NA	6.6 B	6.2 B
Potassium	5,400	ND	–	297,016	1,900 B	922 B	884 B	NA	2,720 B	2,760 B
Selenium	9.7	[3]50	50	180 n	–	–	3.2 B	NA	–	–
Silver	–	[6]100	ND	180 n	3.6 B	–	–	NA	–	3.6 B
Sodium	18,222	[3]160,000	ND	396,022	1,340 B	7,370	8,300	NA	40,500	41,600
Vanadium	20.6	[5]49	ND	260 n	2.8 B	11.6 B	–	NA	7.4 B	5.7 B
Zinc	4	[6]5,000	ND	11,000 n	1.7 B	24.4	1.9 B	NA	2.3 B	1.4 B

See notes at end of table.

Table D-3 (Continued)
Summary of Detections in Groundwater
Analytical Results, Study Area 14

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

[1] Groundwater background screening value is twice the average of detected concentrations for inorganic analytes. For organic compounds, values are the mean of detected concentration, presented for comparison purposes only.
[2] RBC = Risk-Based Concentration Table, U.S. Environmental Protection Agency (USEPA) Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is treatment technology action limit for lead in drinking water distribution system identified in Drinking Water Standards and Health Advisories (USEPA, 1995). For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances.
[3] Primary standard.
[4] Carcinogen.
[5] Systemic toxicant.
[6] Secondary standard.

Notes:
BRAC = Base Realignment and Closure.
bls = below land surface.
FDEPG = Florida Department of Environmental Protection, Groundwater Guidance Concentrations, June 1994.
FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, February 1996.
$\mu g/\ell$ = micrograms per liter.
– = analyte/compound was not detected at reporting limit.
c = carcinogenic effects.
J = estimated value.
NA = not analyzed.
D = indicates value was determined during a diluted reanalysis.
ND = not determined.
n = noncarcinogenic effects.
B = reported concentration is between the instrument detection limit and the contract-required detection limit.
= bolded/shaded value indicate exceedance of regulatory guidance and background.

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00526

REMEDIAL INVESTIGATION

OPERABLE UNIT 4
STUDY AREAS 12, 13, AND 14 (AREA C)

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

VOLUME I: CHAPTERS 1.0 THROUGH 10.0, REFERENCES, AND APPENDICES A THROUGH E

UNIT IDENTIFICATION CODE: N65928
CONTRACT NO.: N62467-89-D-0317/135

JANUARY 2001

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA 29418

Harding Lawson Associates
Engineering and Environmental Services
2533 Greer Road, Suite 6
Tallahassee, Florida 32308 - (850) 656-1293

Table D-3. Summary of Unfiltered Groundwater Analytical Results

Remedial Investigation
Operable Unit 4, Study Areas 12, 13, and 14 - Area C
Naval Training Center, Orlando
Orlando, FL

Sample ID	12G00102	12G00202	12G00302	12G00402	13G00103	13G00203	13G00303	13G00403	14G00102	14G00203
Well ID	OLD-12-01A	OLD-12-02A	OLD-12-03A	OLD-12-04A	OLD-13-01A	OLD-13-02C	OLD-13-03A	OLD-13-04C	OLD-14-01A	OLD-14-02A
Sampling Date	2/10/98	2/10/98	2/10/98	2/10/98	2/12/98	2/12/98	2/11/98	2/11/98	2/10/98	2/10/98
Volatile Organic Compounds ug/L										
1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	--	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	--	--	--	--	--	--	--	--	--	--
2-Hexanone	5 U	5 U	--	5 U	31 U	5 U	5 U	5 U	--	--
4-Chlorotoluene	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	31 U	5 U	5 U	5 U	5 U	5 U
Benzene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	--	--	--	--	--	--	--	--	--	--
Bromochloromethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	1 U	1 U	1 U	1 U	6 UJ	1 UJ	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 UJ	1 U	1 U	6 UJ	1 UJ	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	--	--	--	--	--	--	--	--	--	--

Appendix D
Table D-3. Summary of Unfiltered Groundwater Analytical Results

Remedial Investigation
Operable Unit 4, Study Areas 12, 13, and 14 - Area C
Naval Training Center, Orlando
Orlando, FL

Sample ID	12G00102	12G00202	12G00302	12G00402	13G00103	13G00203	13G00303	13G00403	14G00102	14G00203
Well ID	OLD-12-01A	OLD-12-02A	OLD-12-03A	OLD-12-04A	OLD-13-01A	OLD-13-02C	OLD-13-03A	OLD-13-04C	OLD-14-01A	OLD-14-02A
Sampling Date	2/10/98	2/10/98	2/10/98	2/10/98	2/12/98	2/12/98	2/11/98	2/11/98	2/10/98	2/10/98
Methyl-tert-butyl ether	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	2 U	2 U	12 U	2 U	2 U	2 U	2 U	2 U
Styrene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	2	1 U	1 U	1 U	120	3	16	1 U	1 U	2
Toluene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	7	1 U	2	1 U	1 U	1 U
Trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	6	1 U	4	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--
n-Propylbenzene	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--
t-Butylbenzene	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
Semivolatile Organic Compounds ug/L										
1,2,3-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
2,2'-oxybis(1-Chloropropane)	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	--	--	--	--	--	--	--	--	--	--

Table D-3. Summary of Unfiltered Groundwater Analytical Results

Remedial Investigation
Operable Unit 4, Study Areas 12, 13, and 14 - Area C
Naval Training Center, Orlando
Orlando, FL

Sample ID	12G00102	12G00202	12G00302	12G00402	13G00103	13G00203	13G00303	13G00403	14G00102	14G00203
Well ID	OLD-12-01A	OLD-12-02A	OLD-12-03A	OLD-12-04A	OLD-13-01A	OLD-13-02C	OLD-13-03A	OLD-13-04C	OLD-14-01A	OLD-14-02A
Sampling Date	2/10/98	2/10/98	2/10/98	2/10/98	2/12/98	2/12/98	2/11/98	2/11/98	2/10/98	2/10/98
2-Nitroaniline	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl-phenylether	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl-phenylether	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	--	--	--	--	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--
Butylbenzylphthalate	--	--	--	--	--	--	--	--	--	--
Carbazole	--	--	--	--	--	--	--	--	--	--
Chrysene	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--
Di-n-octylphthalate	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	--	--	--	--	--	--	--	--	--	--
Fluoranthene	--	--	--	--	--	--	--	--	--	--
Fluorene	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--

Appendix D
Table D-3. Summary of Unfiltered Groundwater Analytical Results

Remedial Investigation
Operable Unit 4, Study Areas 12, 13, and 14 - Area C
Naval Training Center, Orlando
Orlando, FL

Sample ID	12G00102	12G00202	12G00302	12G00402	13G00103	13G00203	13G00303	13G00403	14G00102	14G00203
Well ID	OLD-12-01A	OLD-12-02A	OLD-12-03A	OLD-12-04A	OLD-13-01A	OLD-13-02C	OLD-13-03A	OLD-13-04C	OLD-14-01A	OLD-14-02A
Sampling Date	2/10/98	2/10/98	2/10/98	2/10/98	2/12/98	2/12/98	2/11/98	2/11/98	2/10/98	2/10/98
Isophorone	--	--	--	--	--	--	--	--	--	--
N-Nitroso-di-n-propylamine	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine (1)	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--
Pyrene	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	--	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--
p-Isopropyltoluene	--	--	--	--	--	--	--	--	--	--
Pesticides/PCBs ug/L										
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	1 U	6 U	1 U	1 U	1 U	1 U	1 U
4,4'-DDD	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--
Aroclor-1016	--	--	--	--	--	--	--	--	--	--
Aroclor-1221	--	--	--	--	--	--	--	--	--	--
Aroclor-1232	--	--	--	--	--	--	--	--	--	--
Aroclor-1242	--	--	--	--	--	--	--	--	--	--
Aroclor-1248	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	--	--	--	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--
Endosulfan I	--	--	--	--	--	--	--	--	--	--
Endosulfan II	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--
Methoxychlor	--	--	--	--	--	--	--	--	--	--

Table D-3. Summary of Unfiltered Groundwater Analytical Results

Remedial Investigation
Operable Unit 4, Study Areas 12, 13, and 14 - Area C
Naval Training Center, Orlando
Orlando, FL

Sample ID	12G00102	12G00202	12G00302	12G00402	13G00103	13G00203	13G00303	13G00403	14G00102	14G00203
Well ID	OLD-12-01A	OLD-12-02A	OLD-12-03A	OLD-12-04A	OLD-13-01A	OLD-13-02C	OLD-13-03A	OLD-13-04C	OLD-14-01A	OLD-14-02A
Sampling Date	2/10/98	2/10/98	2/10/98	2/10/98	2/12/98	2/12/98	2/11/98	2/11/98	2/10/98	2/10/98
Toxaphene	--	--	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--
gamma-BHC (Lindane)	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--
Inorganics ug/L										
Aluminum	1,490	1,340	697	404	488	748	92.1 U	328	144 J	98.3 U
Antimony	3.6 J	3.3 U	2.5 U	4 U	3.4 U	2.5 U	2.6 U	2.5 U	2.5 U	4.7 J
Arsenic	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Barium	16.6 J	5.2 J	9 J	4.2 J	4.1 J	13.7 J	2.9 J	11.5 J	15.8 J	1.7 J
Beryllium	0.53 U	0.34 U	0.3 U	0.61 U	0.57 U	0.66 U	0.62 U	0.65 U	0.3 U	0.3 U
Cadmium	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Calcium	60,000 U	19,200 U	19,300 U	23,000 U	37,400 U	4,780 U	64,700 U	11,700 U	34,700 U	45,100 U
Chromium	3.5 J	3.6	1 J	1.3 J	1.5 J	1.9 J	0.9 U	1.1 J	0.9 U	0.9 U
Cobalt	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Copper	0.7 U	1.9 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	1.1 U	0.7 U
Iron	58.2 J	33.7 J	15.7 U	23.7 J	35.3 J	1,180	15.7 U	1,210	1,100	15.7 U
Lead	3.5 U	2.2 U	1.6 U	1.9 U	3.4 U	1.6 U	1.6 U	2.1 U	1.6 U	1.6 U
Magnesium	6,090 U	1,850 U	4,020 U	1,000 U	735 U	3,310 U	2,070 U	2,620 U	1,180 U	1,520 U
Manganese	1.1 U	0.77 U	20.4 U	0.99 U	0.53 U	2.6 U	0.24 U	4.5 U	5.5 U	0.28 U
Mercury	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	1.6 J	1.2 U	1.3 J	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Potassium	1,530 U	2,480 U	10,700	627 U	205 U	1,710 U	639 U	3,270 U	1,040 U	840 U
Selenium	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U
Silver	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Sodium	20,900 U	3,160 U	1,120,000	3,270 U	1,640 U	13,300 U	4,000 U	14,600 U	2,920 U	8,900 U
Thallium	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
Vanadium	--	7.4 J	2.6 J	--	--	--	--	--	2.2 J	6.5 J
Zinc	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4.3 U	4.2 U	1 U

Monitoring and Maintenance Status Report

Monitoring Activities and Results at Operable Unit 4

Naval Training Center Orlando, Florida

November 2008 Sampling Event

Revision No. 00

Contract No. N62470-08D-1006
Task Order No. JM05

Submitted to:

U.S. Naval Facilities Engineering Command Southern Division

Prepared by:

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April 2009

TABLE 2-3
2H08 Analytical Sampling Results
OU-4, NTC Orlando, Florida
November 2008

Parameter	Unit	Region/Sample ID	OU3-TS401A	OU3-TS402C	OU3-TS403A	OU3-TS404	OU3-TS405	OU3-TS406	OU3-TS407	OU3-TS408	OU3-TS409	OU3-TS410	OU3-TS411	OU3-TS412	OU3-TS413	OU3-TS414	OU3-TS415	OU3-TS416	OU3-TS417	OU3-TS418	OU3-TS419	OU3-TS420	OU3-TS421	OU3-TS422	OU3-TS423	OU3-TS424	OU3-TS425	OU3-TS426	OU3-TS427	OU3-TS428	OU3-TS429	OU3-TS430	OU3-TS431	OU3-TS432	OU3-TS433	OU3-TS434	OU3-TS435	OU3-TS436	OU3-TS437	OU3-TS438	OU3-TS439	OU3-TS440	OU3-TS441	OU3-TS442	OU3-TS443	OU3-TS444	OU3-TS445	OU3-TS446	OU3-TS447	OU3-TS448	OU3-TS449	OU3-TS450	OU3-TS451
		Check Sample ID	0501TS401A0808	0501TS402C0808	0501TS403A0808	0501TS404A0808	0501TS405A0808	0501TS406A0808	0501TS407C0808	0501TS408A0808	0501TS409A0808	0501TS410A0808	0501TS411A0808	0501TS412A0808	0501TS413A0808	0501TS414A0808	0501TS415A0808	0501TS416A0808	0501TS417A0808	0501TS418A0808	0501TS419A0808	0501TS420A0808	0501TS421A0808	0501TS422A0808	0501TS423A0808	0501TS424A0808	0501TS425A0808	0501TS426A0808	0501TS427A0808	0501TS428A0808	0501TS429A0808	0501TS430A0808	0501TS431A0808	0501TS432A0808	0501TS433A0808	0501TS434A0808	0501TS435A0808	0501TS436A0808	0501TS437A0808	0501TS438A0808	0501TS439A0808	0501TS440A0808	0501TS441A0808	0501TS442A0808	0501TS443A0808	0501TS444A0808	0501TS445A0808	0501TS446A0808	0501TS447A0808	0501TS448A0808	0501TS449A0808	0501TS450A0808	0501TS451A0808
		Lab Sample ID																																																				
		Sample Date	11/07/2008	11/07/2008	11/07/2008	11/06/2008	11/11/2008	11/11/2008	11/11/2008	11/12/2008	11/11/2008	11/11/2008	11/11/2008	11/11/2008	11/11/2008	11/10/2008	11/10/2008	11/12/2008	11/11/2008	11/11/2008	11/12/2008	11/12/2008	11/10/2008	11/10/2008	11/12/2008	11/10/2008	11/10/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008	11/12/2008
Field Parameters																																																						
pH	s.u.	–	8.61	4.93	8.83	8.40	4.04	8.14	4.57	8.61	4.62	4.37	3.04	3.76	4.72	8.32	8.61	4.67	8.06	8.61	5.22	4.76	4.7	8.33	5.68	4.18	8.45	4.3	4.46	4.28	8.55	4.09	7.34	7.51	7.10	7.4	7.31	7.57	7.87	7.84	7.84	7.1	7.38
Specific Conductivity	umhos/cm	–	146	182	462	230	168	336	207	476	201	303	159	170	343	381	158	50	133	157	85	374	200	182	215	175	333	383	36	191	489	175	2140	15.20	3791	2073	2625	1041	186	187	187	1000	1770
Temperature	°C	–	27.4	25.19	26.22	27.18	24.24	24.57	24.73	24.00	25.06	25	24.4	24.36	22.87	25.58	23.28	24.31	21.73	22.72	20.82	26	26.56	26.21	26.44	26.82	25.59	26.2	25.18	24.87	24.47	25.83	25.44	25.31	25.36	26.02	25.4	25.1	24.72	24.3	24.31	23.82
DRP	mg/l	–	<0.1	<0.1	3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DO	mg/l	–	0.43	0.47	0.37	0.58	1.2	0.3	0.33	0.33	0.3	0.8	0.85	0.85	0.21	0.18	0.85	0.85	0.21	0.18	0.85	0.6	0.14	0.04	1.01	0.41	0.15	0.08	0.44	0.61	0.7	0.38	0.35	0.34	0.86	0.38	0.16	0.14	0.37	0.47	0.47	0.37	0.36
Turbidity	NTU	–	2.72	0.85	0.37	4.2	0.14	4.66	1.1	1.76	4.41	0.81	0.3	4.61	0.26	0.19	1.33	0.21	46.1	32.2	0.9	0.34	14.4	0.4	1.43	0.4	2.15	2.07	1.33	16.4	0.84	42.4	1.3	3.25	0.52	1.07	0.64	0.61	1.07	0.4	0.41	11.89	10.68	13.08	13.0
ORP	#	–	1.19	4.01	0.22	4.23	3.78	0.52	0.25	0.32	1.05	0.25	4.18	4.64	0.59	3	0.67	5.62	0.28	0.31	10.15	4.04	4.07	4.7	0.88	10.28	7.2	7.3	4.84	4.18	7.15	7.31	10.67	11.17	14.53	10.31	14.28	8.4	4.82	11.89	10.68	13.08	13.0
Hardness	mg/L	–																																																			
COD	mg/L	–																																																			
Ferrous Iron Fe2	mg/L	–																																																			
CO High	mg/L	–																																																			
Inorganics/Misc Parameters																																																					
Alkalinity total (as CaCO3)	mg/L	NA																																																			
Chloride (as Cl)	mg/L	250																																																			
Nitrogen, nitrate-nitrite	mg/L	NA																																																			
Sulfate (as SO4)	mg/L	250																																																			
Sulfide	mg/L	NA																																																			
Ethane	mg/L	NA																																																			
Ethene	mg/L	NA																																																			
Methane	mg/L	NA																																																			
Carbon Dioxide free	mg/L	NA																																																			
Dissolved organic carbon	mg/L	NA																																																			
Total organic carbon	mg/L	NA																																																			
Total Dissolved solids (residue, filterable)	mg/L	NA																																																			
Total Suspended Solids	mg/L	NA																																																			
Petroleum Range Organics	mg/L	NA																																																			
Antimony, Dissolved	mg/L	6																																																			
Total Nitrogen (as N)	mg/L	NA																																																			
Dissolved Hydrogen	nM	NA																																																			
Total Metals																																																					
Antimony	mg/L	6																																																			
Iron	mg/L	300																																																			
Manganese	mg/L	50																																																			
Sodium	mg/L	160000																																																			
Volatile Organic Compounds																																																					
1,1,1-Trichloroethane	ug/L	200	0.22 U	0.33 U	0.33 U	0.4 U	0.33 U	0.3 U	0.4 U	0.34 U	0.4 U	0.33 U	0.3 U	0.32 U	0.33 U	0.41 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.7 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	17 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.2	0.21 U	0.21 U	0.21 U	0.2 U	0.21 U	0.1 U	0.2 U	0.21 U	0.2 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	1.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	5.1 U
1,1-Dichloroethane / 1,2-Dichloroethane	ug/L	200000	0.34 U	0.24 U	0.34 U	0.4 U	0.24 U	0.4 U	0.4 U	0.34 U	0.4 U	0.34 U	0.4 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	1.7 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	17 U
1,1-Dichloroethene	ug/L	7	0.28 U	0.28 U	0.28 U	0.3 U	0.28 U	0.1 U	0.3 U	0.28 U	0.3 U	0.28 U	0.3 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	1.4 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	14 U
1,2-Dichloroethane	ug/L	70	0.5 U	0.5 U	0.5 U	0.6 U	0.5 U	0.2 U	0.6 U	0.5 U	0.6 U	0.5 U	0.6 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	25 U
1,2-Dichloro-2-fluoroethane	ug/L	0.2	0.22 U	0.22 U	0.22 U	0.4 U	0.22 U	0.2 U	0.4 U	0.22 U	0.4 U	0.22 U	0.4 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	11 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon 113)	ug/L	200000	0.3 U	0.3 U	0.3 U	0.4 U	0.3 U	0.1 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	15 U
1,2-Dichlorobenzene	ug/L	600	0.3 U	0.3 U	0.3 U	0.4 U	0.3 U	0.1 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	15 U
1,3-Dichlorobenzene	ug/L	NA	0.3 U	0.3 U	0.3 U	0.4 U	0.3 U	0.1 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	15 U
1,4-Dichlorobenzene	ug/L	75	0.22 U	0.22 U	0.22 U	0.4 U	0.22 U	0.1 U	0.4 U	0.22 U	0.4 U	0.22 U	0.4 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	11 U
Chloroform	ug/L	280	0.5 U	0.5 U	0.5 U	100 U	0.5 U	0.5 U	100 U	0.5 U	100 U	0.5 U	100 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	25 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1500 U	0.5 U	2500 U	0.5 U	0.5 U	0.5 U	0.5 U	500 U	25 U
Halothane	ug/L	4200	1.6 U	1.6 U	1.6 U	100 U	1.6 U	0.5 U	100 U	1.6 U	100 U	1.6 U	100 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	80 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	5000 U	1.6 U	5000 U	1.6 U	1.6 U	1.6 U	1.6 U	1600 U	80 U
Benzene	ug/L	1	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U	0.1 U	0.5 U	0.4 U	0.5 U	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	2.0 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	1000 U	0.4 U	2000 U	0.4 U	0.4 U	0.4 U	0.4 U	400 U	20 U
Bromodichloromethane	ug/L	81	0.23 U	0.23 U	0.23 U	0.3 U	0.23 U	0.1 U	0.3 U	0.23 U	0.3 U	0.23 U	0.3 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	1.2 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	800 U	0.23 U	1600 U	0.23 U	0.23 U	0.23 U	0.23 U	320 U	16 U
Bromoform/Tribromomethane	ug/L	80	0.3 U	0.3 U	0.3 U	0.4 U	0.3 U	0.1 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	800 U	0.3 U	1600 U	0.3 U	0.3 U	0.3 U	0.3 U	320 U	16 U
Bromomethane	ug/L	4.4	0.33 U	0.33 U	0.33 U	0.4 U	0.33 U	0.1 U	0.4 U	0.33 U	0.4 U	0.33 U	0.4 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.7 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	800 U	0.33 U	1600 U	0.33 U	0.33 U	0.33 U	0.33 U	320 U	17 U
Carbon Tetrachloride	ug/L	700	0.19 U	0.19 U	0.19 U	0.3 U	0.19 U	0.1 U	0.3 U	0.19 U	0.3 U	0.19 U	0.3 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	1 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	600 U	0.19 U	1200 U	0.19 U	0.19 U	0.19 U	0.19 U	240 U	12 U
Carbon Disulfide	ug/L	700	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.1 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	2.0 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	1000 U	0.4 U	2000 U	0.4 U	0.4 U	0.4 U	0.4 U	400 U	20 U
Carbon Tetrachloride	ug/L	5	0.22 U	0.22 U	0.22 U	0.4 U	0.22 U	0.1 U	0.4 U	0.22 U	0.4 U	0.22 U	0.4 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	550 U	0.22 U	1100 U	0.22 U	0.22 U	0.22 U	0.22 U	220 U	11 U
Chlorobenzene	ug/L	100	0.22 U	0.22 U	0.22 U	0.4 U	0.22 U	0.1 U	0.4 U	0.22 U	0.4 U	0.22 U	0.4 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	550 U	0.22 U	1100 U	0.22 U	0.22 U	0.22 U	0.22 U	220 U	11 U
Chloroethane	ug/L	12	0.48 U	0.48 U	0.48 U	0.4 U	0.48 U	0.1 U	0.4 U	0.48 U	0.4 U	0.48 U	0.4 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	2.4 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	1200 U	0.48 U	2400 U	0.48 U	0.48 U	0.48 U	0.48 U	480 U	24 U
Chloroform	ug/L	70	0.28 U	0.28 U	0.28 U	0.4 U	0.28 U	0.1 U	0.4 U	0.28 U	0.4 U	0.28 U	0.4 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	1.4 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	700 U	0.28 U	1400 U	0.28 U	0.28 U	0.28 U	0.28 U	280 U	14 U
Chloromethane	ug/L	3.7	0.61 U	0.61 U	0.61 U	0.8 U	0.61 U	0.1 U	0.8 U	0.61 U	0.8 U	0.61 U	0.8 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	3 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	1500 U	0.61 U	3000 U	0.61 U	0.61 U	0.61 U	0.61 U	610 U	31 U
1-or 2-Dichloroethene	ug/L	70	88.6 U	0.2 U	0.8 J	1500	16.4	454	0.2 U	1.3	326	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	550 U	0.2 U	1100 U	0.2 U	0.2 U	0.2 U	0.2 U	220 U	11 U
1-or 2-Dichloropropane	ug/L	NA	0.21 U	0.21 U	0.21 U	0.3 U	0.21 U	0.1 U	0.3 U	0.21 U	0.3 U	0.21 U	0.3 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	1.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	500 U	0.21 U	1000 U	0.21 U	0.21 U	0.21 U	0.21 U	210 U	11 U
Dichlorodifluoromethane	ug/L	1400	1 U	1 U	1 U	20 U	1 U	0.1 U	20 U	1 U	20 U	1 U	20 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	1 U	500 U	1 U	1 U	1 U	1 U	100 U	5 U
Dichloroethane	ug/L	50	0.43 U	0.43 U	0.43 U	0.6 U	0.43 U	0.1 U	0.6 U	0.43 U	0.6 U	0.43 U	0.6 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	2.2 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	1100 U	0.43 U	2200 U	0.43 U	0.43 U	0.43 U	0.43 U	440 U	22 U
Ethylbenzene (Benzene)	ug/L	0.8	0.3 U	0.3 U	0.3 U	0.4 U	0.3 U	0.1 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	750 U	0.3 U	1500 U	0.3 U	0.3 U	0.3 U	0.3 U	300 U	15 U
Methyl Acetate	ug/L	3000	0.5 U	0.5 U	0.5 U	100 U	0.5 U	0.5 U	100 U	0.5 U	100 U	0.5 U	100 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	25 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1500 U	0.5 U	2500 U	0.5 U	0.5 U	0.5 U	0.5 U	500 U	25 U
Methyl ethyl ketone (Butanone)	ug/L	4200	2 U	2 U	2 U	40 U	2 U	0.5 U	40 U	2 U	40 U	2 U	40 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1000 U	2 U	2000 U	2 U	2 U	2 U	2 U	200 U	10 U
Methyl Isobutyl ketone (4-methyl-2-pentanone)	ug/L	560	2 U	2 U	2 U	40 U	2 U	0.5 U	40 U	2 U	40 U	2 U	40 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1000 U	2 U	2000 U	2 U	2 U	2 U	2 U	200 U	10 U
Methyl t-butyl Ether	ug/L	30	0.26 U	0.26 U	0.26 U	0.2 U	0.26 U	0.5 U	0.2 U	0.26 U	0.2 U	0.26 U	0.2 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	1.3 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	650 U	0.26 U	1300 U	0.26 U	0.26 U	0.26 U	0.26 U	260 U	13 U
Methylene chloride	ug/L	5	1 U	1 U	1 U	20 U	1 U	0.1 U	20 U	1 U	20 U	1 U	20 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1

Monitoring and Maintenance Status Report

Monitoring Activities and Results at Operable Unit 4 Naval Training Center Orlando, Florida

Revision No. 00

Contract No. N62467-01-D-0331
Contract Task Order No. 0058

Submitted to:
U.S. Naval Facilities
Engineering Command
Southeast

Prepared by:

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June 2008

TABLE 2-3			Station ID	OLD-13-27A	OLD-13-33A	OLD-13-34B	OLD-13-36A	OLD-13-37B	OLD-13-39B	OLD-13-40B	OLD-13-43C
EOS Observation Well Sampling Analytical Sampling Results			Client Sample ID	0581327AQ108	0581333AQ108	0581334BQ108	0581336AQ108	0581337BQ108	0581339BQ108	0581340BQ108	0581343CQ108
OU-4, NTC Orlando, Florida			Lab Sample ID								
			Sample Date	1/23/2008	1/21/2008	1/21/2008	1/17/2008	1/16/2008	1/15/2008	1/21/2008	1/18/2008
	Parameter	Units	GCTL[1]								
	Field Parameters										
	pH	s.u.	--	6.2	6.04	4.8	6.04	5.67	5.28	4.97	4.97
	Specific Conductivity	umhos/cm	--	370	154	43	155	134	77	169	179
	Temperature	°C	--	24.8	21.7	19.7	20.2	21.09	23.31	25.44	26.7
	ORP	mV	--	-37.4	-170	-109	-100	-73	26.6	-105	-135
	DO	mg/L	--	0.37	0.71	0.3	0.28	0.19	1.08	4.5	0.2
	Turbidity	NTU	--	5.61	3.53	0.37	37.2	12.4	9.46	1.49	1.39
	DTW	ft	--	NA	6.25	6.18	10.43	10.91	12.82	7.32	5.05
	Inorganics/Misc Parameters										
	Alkalinity, total (as CaCO3)	mg/L	NA	184			44.2	21.6	10.1		
	Chloride (as Cl)	mg/L	250	10.8			3.4	9.8	4.9		
	Nitrogen, nitrate-nitrite	mg/L	NA				0.75 U	0.75 U	0.75 U		
	Sulfate (as SO4)	mg/L	250	43.5			5.7	8.5	10.6		
	Sulfide	mg/L	NA	2 U			2 U	0.7 J	2 U		
	Ethane	ug/L	NA	1 U			1 U	1 U	1 U		
	Ethene	ug/L	NA	1 U			1 U	1 U	1 U		
	Methane	ug/L	NA	1.6 B			140 JB	17 B	2.3 JB		
	Carbon Dioxide free	ug/l	NA	312000			140000	165000	206000		
	Dissolved organic carbon	mg/L	NA	4.8 J			50.2	30.6	3.2 J		
	Total organic carbon	mg/L	NA	4.4 J			52.8	31.7	3.1 J		
	Total Dissolved solids (residue, filterable)	mg/L	NA								
	Total Suspended Solids	mg/L	NA								
	Petroleum Range Organics	ug/l	NA								
	Antimony, Dissolved	ug/L	6	**14.9 J**							
	Total Nitrogen (as N)	mg/L	NA	1							
	Dissolved Hydrogen	nM	NA	1			1.9	0.89	0.96		
	Total Metals										
	Antimony	ug/L	6	**16 J**							
	Iron	ug/L	300	56.3 J			156	30.7 J	227		
	Manganese	ug/L	50	15 U			15 U	15 U	5.7 J		
	Sodium	ug/L	160000								
	Volatile Organic Constituents										
	1,1,1-Trichloroethane	ug/L	200	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
	1,1,2,2-Tetrachloroethane	ug/L	0.2	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**
	1,1,2-trichloro-1,2,2-trifluoroethane	ug/L	210000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1,1,2-Trichloroethane	ug/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1,1-Dichloroethane	ug/L	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1,1-Dichloroethene	ug/L	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1,2,3-trichlorobenzene	ug/L	70	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
	1,2,4-Trichlorobenzene	ug/L	70	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
	1,2-Dibromo-3-chloropropane	ug/L	0.2	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**
	1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.02	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**
	1,2-Dichlorobenzene	ug/L	600	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1,2-Dichloroethane	ug/L	3	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ
	1,2-Dichloropropane	ug/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1,3-Dichlorobenzene	ug/L	210	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	1,4-Dichlorobenzene	ug/L	75	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	2-Hexanone	ug/L	280	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ
	Acetone	ug/L	6300	10 U	10 UJ	10 UJ	10 UJ	10 U		10 UJ	10 U
	Benzene	ug/L	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Bromochloromethane	ug/L	91	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Bromodichloromethane	ug/L	0.6	0.6 U	0.6 U	0.6 U	0.6 UJ	0.6 U	0.6 U	0.6 U	0.6 U
	Bromoform	ug/L	4.4	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 UJ
	Bromomethane	ug/L	9.8	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U	1 UJ	1 U
	Carbon disulfide	ug/L	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Carbon tetrachloride	ug/L	3	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
	Chlorobenzene	ug/L	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Chloroethane	ug/L	12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Chloroform	ug/L	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Chloromethane	ug/L	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	cis-1,2-Dichloroethene	ug/L	70	1 U	1 U	1 U	2.9	1.2	0.44 J	49	1 U
	cis-1,3-Dichloropropene	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Dibromochloromethane	ug/L	0.4	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 UJ**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 UJ**
	Dichlorodifluoromethane	ug/L	1400	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 UJ
	Ethylbenzene	ug/L	30	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Isopropylbenzene (Cumene)	ug/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
	methyl acetate	ug/L	3000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Methyl ethyl ketone (2-butanone)	ug/L	4200	10 U	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 U
	Methyl isobutyl ketone (4-methyl-2-pentanone)	ug/L	560	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	Methyl-t-Butyl Ether	ug/L	20	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
	Methylene chloride	ug/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Styrene	ug/L	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
	Tetrachloroethene (PCE)	ug/L	3	0.81 J	1 U	1 U	0.23 J	1 U	**6.2**	**11**	1 U
	Toluene	ug/L	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	trans-1,2-Dichloroethene	ug/L	100	1 U	1 U	1 U	1 U	1 U	1 U	1.2	1 U
	trans-1,3-Dichloropropene	ug/L	NA	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
	Trichloroethene (TCE)	ug/L	3	1 U	1 U	1 U	0.93 J	1 U	**4.3**	**18**	1 U
	Trichlorofluoromethane	ug/L	2100	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
	Vinyl chloride	ug/L	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Xylenes, total	ug/L	20	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	Microbial Parameters										
	Actinomycetes (MidBrSats)*	% of total PLFA	--				8.61				
	Anaerobic metal reducers (BrMonos)*	% of total PLFA	--				1.59				
	Dehalococcides*	cells/mL	--				3.61				
	Eukaryotes (polyenoics)*	% of total PLFA	--				3.33				
	Firmicutes (TerBrSats)*	% of total PLFA	--				7.71				
	General (Nsats)*	% of total PLFA	--				18.74				
	Microbial Biomass*	Cells/mL	--				43900				
	Proteobacteria (Monos)*	% of total PLFA	--				60.03				
	Starvation*	ratio cy/cis	--				0.15				
	Stress*	ratio trans/cis	--				0.08				
	Cells*	cells/mL	--				243000				
	Volatile Fatty Acids										
	Pyruvic acid*	mg/L	--				<4				
	Lactic acid*	mg/L	--				<1				
	Formic acid*	mg/L	--				<1				
	Acetic acid*	mg/L	--				<1				
	Proprionic acid*	mg/L	--				<1				
	Butyric acid*	mg/L	--				<1				
	Air										
	Hydrogen Dissolved	nM	NA	1			1.9	0.89	0.96		

Notes:
Bold and Outlined indicates concentration exceeds **(GCTL)** Groundwater Target Cleanup Level
Values Bolded are analytes not detected by the lab but are above the **(GCTL)** Groundwater Target Cleanup Level
GCTL - Groundwater Cleanup Target Level
1 = Ch 62-777 FAC Groundwater Cleanup Target Levels **(GCTLs)** reported in µg/L
U - The analyte was analyzed for , but not detected.
J - estimated value
B-The analyte was detected in the associated method and/or calibration blank.
UJ- Value non-detected estimated.
JB- Estimate value. The analyte was detected in the associated method and/or calibration blank.
NA/-- - Not Available at time of rule adoption/ limit does not apply
> - Analyte detected above maximum detection limit