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8/1/2012
TETRA TECH

Comprehensive Long-term Environmental Action Navy

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Rev. 4
08/24/12

Final Revised Feasibility Study
for
Operable Unit 2

Naval Training Center Orlando
Orlando, Florida

Contract Task Order 0143

August 2012

BRAC Program Management Office Southeast
4130 Faber Place Drive, Suite 202
North Charleston, South Carolina 29405

TETRA TECH

Rev. 4
08/24/12

REVISED FEASIBILITY STUDY REPORT
FOR
OPERABLE UNIT 2

NAVAL TRAINING CENTER ORLANDO
ORLANDO, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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PROFESSIONAL GEOLOGIST CERTIFICATION

I hereby certify that this document, *Revised Feasibility Study Report for Operable Unit 2, Naval Training Center Orlando, Orlando, Florida,* was prepared under my direct supervision in accordance with acceptable standards of geological practice.

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TABLE OF CONTENTS

SECTION **PAGE**

PROFESSIONAL GEOLOGIST CERTIFICATION iii

ACRONYMS ix

EXECUTIVE SUMMARY ES-1

1.0 INTRODUCTION 1-1

1.1 PURPOSE AND SCOPE OF REPORT 1-1
1.2 SITE BACKGROUND 1-1
1.2.1 Site Location and Description 1-1
1.2.2 Site History 1-2
1.2.3 Site Characteristics 1-3
1.3 SITE CHARACTERIZATION 1-5
1.3.1 Previous Investigations 1-5
1.3.2 Summary of Remedial Investigation 1-5
1.3.3 Interim Remedial Actions Completed Prior to Issuance of OU 2 RI 1-7
1.3.4 Post-RI Surface Water and Groundwater Sampling 1-8
1.4 CHANGES AT OU 2 SINCE 2003 1-8
1.4.1 Ownership of OU 2 Property 1-8
1.4.2 Land Use Controls 1-9
1.4.3 Revised CTLs 1-11
1.4.4 Post-2003 Interim Remedial Actions 1-11
1.5 PRESUMPTIVE REMEDY 1-13

2.0 ENVIRONMENTAL CONDITIONS 2-1

2.1 NATURE AND EXTENT OF CONTAMINATION 2-1
2.1.1 Surface Soil 2-1
2.1.2 Surface Water 2-2
2.1.3 Sediment 2-3
2.1.4 Groundwater 2-3
2.2 CONTAMINANT FATE AND TRANSPORT 2-4
2.3 HUMAN HEALTH RISK ASSESSMENT 2-6
2.3.1 2001 RI HHRA 2-7
2.3.2 Updated Risk Evaluation Methodology 2-8
2.3.3 Updated Risk Evaluation for Surface Soil 2-11
2.3.4 Updated Risk Evaluation for Surface Water 2-14
2.3.5 Updated Risk Evaluation for Sediment 2-17
2.3.6 Updated Risk Evaluation for Northern Area Groundwater 2-19
2.3.7 Updated Risk Evaluation for Southern Area Groundwater 2-21
2.3.8 Updated Risk Evaluation Summary 2-23
2.4 ECOLOGICAL RISK ASSESSMENT 2-24

3.0 REMEDIAL ACTION OBJECTIVES AND GENERAL RESPONSE ACTIONS 3-1

3.1 REMEDIAL ACTION OBJECTIVES 3-1
3.1.1 Statement of Remedial Action Objectives 3-1
3.1.2 Applicable or Relevant and Appropriate Requirements and To Be Considered Criteria 3-2
3.1.3 Media of Concern 3-3
3.1.4 Contaminants of Concern for Remediation 3-3
3.2 GENERAL RESPONSE ACTIONS 3-4
3.3 AREAS AND VOLUMES OF CONTAMINATED MEDIA 3-4

3.3.1 Buried Waste 3-4
3.3.2 Northern Area Groundwater 3-4
3.3.3 Southern Area Groundwater....3-6

4.0 SCREENING OF REMEDIATION TECHNOLOGIES AND PROCESS OPTIONS....4-1

4.1 PRELIMINARY SCREENING OF REMEDIATION TECHNOLOGIES AND PROCESS OPTIONS....4-1
4.1.1 No Action 4-2
4.1.2 Land Use Controls....4-2
4.1.3 Containment 4-3
4.1.4 Monitoring....4-4
4.2 SELECTION OF REPRESENTATIVE PROCESS OPTIONS....4-5

5.0 ASSEMBLY AND DETAILED ANALYSES OF REMEDIAL ALTERNATIVES....5-1

5.1 EVALUATION CRITERIA....5-1
5.1.1 Threshold Criteria 5-1
5.1.2 Primary Balancing Criteria....5-2
5.1.3 Modifying Criteria....5-4
5.1.4 Selection of Remedy 5-5
5.2 ASSEMBLY OF REMEDIAL ALTERNATIVES....5-5
5.2.1 Northern Area 5-5
5.2.2 Southern Area....5-5
5.3 DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES – NORTHERN AREA 5-6
5.3.1 Alternative N-1: No Action 5-6
5.3.2 Alternative N-2: Landfill Containment, LUCs, and Monitoring....5-7
5.4 DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES – SOUTHERN AREA 5-9
5.4.1 Alternative S-1: No Action 5-9
5.4.2 Alternative S-2: Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring....5-10
5.4.3 Alternative S-3: Landfill Containment, Source Area Groundwater Control via a Biobarrier, Land Use Controls, and Monitoring....5-13

6.0 COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES....6-1

6.1 NORTHERN AREA 6-1
6.1.1 Overall Protection of Human Health and the Environment 6-1
6.1.2 Compliance with ARARs and TBCs 6-1
6.1.3 Long-Term Effectiveness and Permanence....6-2
6.1.4 Reduction of Toxicity, Mobility, or Volume through Treatment....6-2
6.1.5 Short-Term Effectiveness....6-2
6.1.6 Implementability....6-2
6.1.7 Cost 6-3
6.2 SOUTHERN AREA....6-3
6.2.1 Overall Protection of Human Health and the Environment 6-3
6.2.2 Compliance with ARARs and TBCs 6-4
6.2.3 Long-Term Effectiveness and Permanence....6-4
6.2.4 Reduction of Toxicity, Mobility, or Volume through Treatment....6-4
6.2.5 Short-Term Effectiveness....6-5
6.2.6 Implementability....6-5
6.2.7 Cost 6-5

REFERENCES.... R-1

APPENDICES

A HHRA RISK RE-EVALUATION DATA SETS
B UCL CALCULATIONS
C COST ESTIMATES

TABLES

1-1 Chronological Summary of Events
2-1 Identification of COPCs in Exposed Surface Soil
2-2 Selection of COCs in Exposed Surface Soil
2-3 Residential Risk Characterization of Exposed Surface Soil
2-4 Industrial Risk Characterization of Exposed Surface Soil
2-5 Locations of Surface Water and Sediment Samples
2-6 Identification of COPCs, Surface Water in Canals
2-7 Identification of COPCs, Surface Water in Ponds
2-8 Selection of COCs, Surface Water in Canals
2-9 Selection of COCs, Surface Water in Ponds
2-10 Residential Risk Characterization of Surface Water in Canals
2-11 Residential Risk Characterization of Surface Water in Ponds
2-12 Identification of COPCs, Sediment in Canals
2-13 Identification of COPCs, Sediment in Ponds
2-14 Selection of COCs, Sediment in Canals
2-15 Selection of COCs, Sediment in Ponds
2-16 Residential Risk Characterization of Sediment in Ponds
2-17 Industrial Risk Characterization of Sediment in Ponds
2-18 Identification of COPCs in Groundwater, Northern Area
2-19 Selection of COCs in Groundwater, Northern Area
2-20 Exceedances of PRGs in Groundwater, Northern Area
2-21 Residential Risk Characterization of Groundwater, Northern Area
2-22 Identification of COPCs in Groundwater, Southern Area
2-23 Selection of COCs in Groundwater, Southern Area
2-24 Exceedances of PRGs in Groundwater, Southern Area
2-25 Residential Risk Characterization of Groundwater, Southern Area r
3-1 Chemical-Specific ARARs and TBCs
3-2 Location-Specific ARARs and TBCs
3-3 Action-Specific ARARs and TBCs
4-1 Remediation Technologies
5-1 Assessment of Chemical-Specific ARARs and TBCs, Alternative N-2: Landfill Containment, LUCs, and Monitoring
5-2 Assessment of Action-Specific ARARs and TBCs, Alternative N-2: Landfill Containment, LUCs, and Monitoring
5-3 Assessment of Chemical-Specific ARARs and TBCs, Alternative S-2: Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring
5-4 Assessment of Action-Specific ARARs and TBCs, Alternative S-2: Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring
5-5 Assessment of Chemical-Specific ARARs and TBCs, Alternative S-3: Landfill Containment, Source Area Groundwater Control via a Biobarrier, LUCs, and Monitoring
5-6 Assessment of Action-Specific ARARs and TBCs, Alternative S-3: Landfill Containment, Source Area Groundwater Control via a Biobarrier, LUCs, and Monitoring
6-1 Summary of Comparative Analysis of Alternatives for the Northern Area
6-2 Summary of Comparative Analysis of Alternatives for the Southern Area

FIGURES

1-1 Facility Location Map
1-2 Site Location Map
1-3 Landfill Boundaries
1-4 Surface Water Flow
1-5 Potentiometric Surface, Shallow Surficial Aquifer
1-6 Potentiometric Surface, Intermediate Surficial Aquifer
1-7 RI Surface Soil Sample Locations
1-8 RI Surface Water/Sediment Sample Locations
1-9 RI Groundwater Sample Locations
1-10 Surface Soil IRA Locations
1-11 Groundwater IRA
2-1 Surface Water and Groundwater Monitoring Locations
2-2 Conceptual Site Model
3-1 Southern Area Shallow Groundwater Plume
3-2 Southern Area Intermediate Groundwater Plume
5-1 Alternative S-3 Proposed Treatment Area

ACRONYMS AND ABBREVIATIONS

95UCL	95 percent Upper Confidence Limit
µg/L	micrograms per liter
AFB	Air Force Base
amsl	above mean sea level
ARAR	applicable or relevant and appropriate requirement
BaPEq	benzo(a)pyrene equivalent
BCGC	Boggy Creek Golf Course
bgs	below ground surface
BGSV	background screening value
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-term Environmental Action Navy
COC	contaminant of concern
COI	chemical of interest
COPC	contaminant of potential concern
CTL	Cleanup Target Level
CTO	Contract Task Order
DCB	dichlorobenzene
DCE	dichloroethene
DDE	dichlorodiphenyldichloroethylene
DPT	direct-push technology
EOS®	Emulsified Oil Substrate
EPA	United States Environmental Protection Agency
EPC	exposure point concentration
ERA	Ecological Risk Assessment
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FL-UCL	Florida Upper Confidence Limit calculator
FOD	frequency of detection
FS	Feasibility Study
FSW	freshwater surface water
ft^2	square feet
GCTL	Groundwater Cleanup Target Level
GOAA	Greater Orlando Aviation Authority
gpm	gallon per minute
GRA	General Response Action
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
ILCR	Incremental Lifetime Cancer Risk
IRA	interim remedial action
JV-II	AGVIQ-CH2M Hill Joint Venture II
LUC	land use control
MBGC	Main Base Golf Course
mg/kg	milligrams per kilogram

ACRONYMS AND ABBREVIATIONS (CONTINUED)

MNA	monitored natural attenuationNAnatural attenuation
NAVFAC SE	Naval Facilities Engineering Command Southeast
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPW	net present worth
NTC	Naval Training Center
O&M	operations and maintenance
OPT	Orlando Partnering Team
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
pCi/g	picocuries per gram
PRG	preliminary remediation goal
RA	remedial action
RAO	Remedial Action Objective
RI	Remedial Investigation
RSL	Regional Screening Level
SCTL	Soil Cleanup Target Level
SVOC	semivolatile organic compound
TBC	to be considered
TCE	trichloroethene
TDS	total dissolved solids
TEF	Toxic Equivalency Factor
TOC	total organic carbon
TPH	total petroleum hydrocarbon
TSS	total suspended solids
UIC	underground injection control
U.S.	United States
VOC	volatile organic compound
yd^3	cubic yard

EXECUTIVE SUMMARY

This Revised Feasibility Study (FS) Report for Operable Unit (OU) 2 at the former Naval Training Center (NTC) Orlando in Orlando, Florida, has been prepared by Tetra Tech for Naval Facilities Engineering Command Southeast under the Comprehensive Long-Term Environmental Action Navy (CLEAN) program, Contract Number N62467-04-D-0555, Contract Task Order 0143. This report describes the formulation and evaluation of remedial action (RA) alternatives for groundwater and buried waste at OU 2.

This Revised FS provides revisions to the Final FS for OU 2 (Tetra Tech, 2003a). Revisions were required to document changes in site conditions since the 2003 FS and to characterize the current risks associated with potential exposures to site-related constituents. Changes in site conditions include the development of land use controls (LUCs), the sale and subsequent transfer of the property, completion of a soil interim remedial action (IRA), and implementation of a groundwater IRA.

Site Background

OU 2 is located at the former McCoy Annex, approximately 8 miles south of the Main Base, and comprises 177 acres. The area of concern at OU 2 consists of the former McCoy Annex Landfill (approximately 114 acres) and contaminated groundwater identified at the site. A large portion of the landfill underlies the closed nine-hole Boggy Creek Golf Course.

The northern and southern portions of the site were used for landfilling wastes by the U.S. Air Force from about 1960 to 1972; the northern portion was used as a landfill by the U.S. Navy from 1972 until about 1978. The estimated volume of waste is more than 1 million cubic yards (C.C. Johnson & Associates, 1985). Landfill wastes reportedly included trees, leaves, paper, plastic, scrap wood, scrap metal, sections of pipe, bricks, cables, fire hose, parachutes, transformers, hospital wastes, paint and paint thinner, automobile batteries, airplane parts, asbestos, low-level radiological waste, and possibly some waste oil.

The following changes have taken place at OU 2 since submission of the 2003 FS:

- **Property ownership.** The City of Orlando did not take ownership of the OU 2 property, as stated in the 2003 FS; the athletic fields planned for the southern part of OU 2 were canceled; and the Boggy Creek Golf Course in the northern part of OU 2 was closed in early 2007. Instead, the land was sold to a private developer. The current use of the property is recreational and the planned future use of the property is industrial.

- **LUCs.** LUCs were developed for OU 2, published in the Finding of Suitability to Transfer McCoy Annex, Early Transfer of Operable Unit 2 (Tetra Tech, 2008), and implemented by the issue of

the Quitclaim Deed on January 31, 2008. These LUCs include a prohibition on the installation of groundwater wells; the extraction or use of groundwater for any purpose; agricultural or residential use of the OU 2 property; and excavation, disturbance, or removal of soils from OU 2 without prior written approval from the Navy and the Florida Department of Environmental Protection (FDEP).

- **Revised Cleanup Target Levels.** In February of 2005, FDEP issued revised Cleanup Target Levels (CTLs) that supersede the 1999 CTLs used in the development of Preliminary Remediation Goals (PRGs) for the 2003 FS.

- **IRAs.** Two surface soil IRAs performed prior to the completion of the Remedial Investigation (RI) are described in the RI Report (Tetra Tech, 2001). A third surface soil IRA, completed in 2005, provided soil cover in areas identified in a 2004 inspection as having inadequate cover. A groundwater IRA implemented at OU 2 in 2007 consisted of the installation of a permeable bioreactive barrier (biobarrier) at the eastern border of the southern portion of OU 2 to intercept the volatile organic compound (VOC) groundwater plume that was migrating off site.

Feasibility Study

This Revised FS was conducted in accordance with United States Environmental Protection Agency's (EPA's) presumptive remedy guidance provided in Application of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Municipal Landfill Presumptive Remedy to Military Landfills (EPA, 1996). The guidance states that containment is an appropriate presumptive remedy for a military landfill that contains primarily "municipal-type wastes" (i.e., not high-hazard military-specific wastes such as chemical warfare agents or military munitions).

The nature and extent of contamination at OU 2 were determined using data from the 2001 RI and ongoing monitoring programs. RI data for surface soil, surface water in ponds, pond sediment, and canal sediment were re-evaluated using 2005 CTLs in this report. Because both surface water in canals and groundwater at OU 2 are sampled as part of ongoing monitoring programs, recent data were used to evaluate the nature and extent of contamination in these two media.

During the RI, groundwater contamination at OU 2 was divided into two exposure units, the Northern Area and the Southern Area. Groundwater data were grouped appropriately according to sample location. Surface soil, surface water, and sediment data sets were not subdivided into Northern and Southern Areas.

As part of this Revised FS, a risk evaluation was completed using two different methodologies to satisfy both state and federal regulatory agencies. The current FDEP risk assessment methodology was used to determine the PRGs and contaminants of concern (COCs) for remediation based on maximum detected

chemical concentrations in all media and an industrial worker receptor. A risk-ratio technique based on EPA Regional Screening Levels (RSLs) was used to determine quantitative cancer risk estimates and non-cancer hazard quotients (HQs) for hypothetical future residents and industrial workers exposed to contaminants of potential concern (COPCs). Maximum detected chemical concentrations were used for all media, except that an exposure point concentration (EPC) was determined for each soil COPC; the EPC was calculated by statistically estimating the 95-percent Upper Confidence Limit (95UCL) on the mean. Quantitative cancer risk estimates, incremental lifetime cancer risks (ILCRs), were calculated for each carcinogenic COPC by dividing EPCs by corresponding EPA RSLs and then multiplying by 1×10^{-6}. HQs for the non-carcinogenic COPCs were calculated by dividing EPCs by EPA RSLs and multiplying by 1.0.

The landfill presumptive remedy assumes inherent risk from buried waste and associated subsurface soil and source area groundwater (groundwater within the landfill). Groundwater migrating off site is the only medium for which COCs were selected at OU 2. Iron and manganese are COCs for groundwater migrating from both the Northern Area and the Southern Area. VOCs were also retained as COCs in the Northern Area (two VOCs) and Southern Area (six VOCs) groundwater including: benzene, chlorobenzene, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, and vinyl chloride. Risks to industrial workers and trespassers are acceptable at OU 2. All source area groundwater is assumed to be contaminated. Groundwater migrating off site presents unacceptable risk to the hypothetical resident.

Remedial Action Objectives

Based on EPA guidance for presumptive remedies, and the contaminated media at OU 2, the following Remedial Action Objectives (RAOs) were developed:

RAO 1: Prevent exposure to buried waste for all human receptors under current and future site uses.

RAO 2: Prevent contact with and ingestion of source area groundwater with COC concentrations in excess of PRGs.

RAO 3: Eliminate migration of groundwater with COC concentrations in excess of PRGs to potential off-site receptors.

The volume of the shallow VOC plume was calculated to be 9.5 million gallons. The combined volume of the two VOC plumes in the intermediate zone of the surficial aquifer was calculated to be 15.9 million gallons.

Development of Remedial Alternatives

Based on the technology screening and taking into consideration the presumptive remedy guidance, the following remedial alternatives were developed for OU 2. A No Action alternative was developed for both

the Northern and Southern Areas and analyzed to serve as a baseline for other alternatives, as required by CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan. A second alternative was formulated for the Northern Area and analyzed to evaluate the presumptive remedy and its components including containment of source area groundwater contamination. A second and third alternative were developed for the Southern Area and analyzed to evaluate the presumptive remedy and its components, including containment of source area groundwater contamination.

Northern Area

Alternative N-1: No Action

Alternative N-2: Landfill Containment, LUCs, and Monitoring

Southern Area

Alternative S-1: No Action

Alternative S-2: Landfill Containment, Source Area Groundwater Control through Monitored Natural Attenuation, LUCs, and Monitoring

Alternative S-3: Landfill Containment, Source Area Groundwater Control via a Biobarrier, LUCs, and Monitoring

For the Northern Area, only Alternative N-2 meets the threshold criteria. For the Southern Area, Alternative S-2 and S-3 meet the threshold criteria. Alternative S-3 will meet the RAOs in a shorter time at a higher cost than Alternative S-2.

The capital and operations and maintenance (O&M) costs and net present worth (NPW) of the alternatives are summarized as follows:

Alternative	Capital ($)	NPW of O&M ($)	NPW ($)
N-1	0	0	0
N-2	0	321,000	545,000
S-1	0	0	0
S-2	0	321,000	545,000
S-3	1,180,000	1,228,000	4,348,000

These figures have been rounded to the nearest $1,000 to reflect the preliminary nature of these estimates.

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE OF REPORT

This Revised Feasibility Study (FS) Report for Operable Unit (OU) 2 at the former Naval Training Center (NTC) Orlando in Orlando, Florida, has been prepared by Tetra Tech for Naval Facilities Engineering Command Southeast (NAVFAC SE) under the Comprehensive Long-Term Environmental Action Navy (CLEAN), Contract Number N62467-04-D-0055, Contract Task Order (CTO) 0143. This report describes the formulation and evaluation of remedial action (RA) alternatives for groundwater and buried waste at OU 2.

The Revised FS was conducted in conformance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to establish Remedial Action Objectives (RAOs) and preliminary remediation goals (PRGs), to screen remedial technologies, and to assemble, evaluate, and compare remedial alternatives. This FS provides revisions to the Final FS for OU 2 submitted in July 2003 (Tetra Tech, 2003a). Revisions were required to document changes in site conditions and to characterize the current risks associated with potential exposures to site-related constituents. Changes in site conditions include the sale and subsequent transfer of the property, the development and implementation of land use controls (LUCs), completion of a soil interim remedial action (IRA), and implementation of a groundwater IRA.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The former NTC Orlando, in central Orange County, included four separate, non-contiguous facilities, Main Base, Area C, Herndon Annex, and McCoy Annex (Figure 1-1). OU 2 is located at the former McCoy Annex, approximately 8 miles south of the Main Base and west of Orlando International Airport, and comprises 177 acres. The southern tip of OU 2 is at the intersection of Boggy Creek Road and Tradeport Drive. The Orlando International Airport lies to the south and east (Figure 1-2). The area of concern at OU 2 consists of buried waste in the former McCoy Annex Landfill (approximately 114 acres) and contaminated source area groundwater (the groundwater flowing within the limits of the landfill). A large portion of the landfill underlies the closed nine-hole Boggy Creek Golf Course (BCGC). The landfill boundaries shown on Figure 1-3 were determined during the Remedial Investigation (RI) (Tetra Tech, 2001). Based on groundwater contaminant types and concentrations, OU 2 was divided into the Northern Area and the Southern Area during the RI.

In 1982, the Northern Area was developed as a nine-hole golf course that included a clubhouse, lawn equipment storage building, and storage shed. The Northern Area is bordered to the east by aboveground fuel storage tanks operated by the Greater Orlando Aviation Authority (GOAA), to the west by former Navy housing (now demolished), to the north by woods, and to the south by storage bunkers owned and operated by GOAA. The Southern Area is undeveloped and includes an area of grass and trees. East of the Southern Area are storage bunkers operated by GOAA, west is industrial property including warehouses and a salvage yard, and north is vacant former Navy housing. A drainage canal runs along the entire eastern perimeter of OU 2.

1.2.2 Site History

The history of the area known today as the McCoy Annex began in 1941 with the construction of the Orlando Municipal Airport No. 2 on undeveloped land and wetlands acquired by the City of Orlando from individual property owners. McCoy Annex was leased to the United States (U.S.) Army Air Corps from 1942 until the end of World War II and was known as Pinecastle Army Air Field. At the end of World War II, the base was deactivated and the property returned to the city.

When the Korean Conflict began in 1952, the base was reopened as Pinecastle Air Force Base (AFB). The base was subsequently renamed McCoy AFB in May of 1958 and was operated by the U.S. Air Force until its closure in 1973. At that time, the Navy acquired title to part of the property, which then served as a community support annex for NTC Orlando, and changed the name to McCoy Annex. The majority of the former AFB, including runways, aircraft hangars, and maintenance facilities, was not acquired by the Navy; that property is currently owned by the City of Orlando and operated by GOAA as the Orlando International Airport (Tetra Tech, 2001).

The buildings and facilities at OU 2 were used as golf course support facilities from the time of their construction in 1982 and 1983 until the BCGC was closed on January 31, 2007. Reportedly, the western portion of the site was used as a landfill by the Air Force from about 1960 to 1972, and the eastern portion was used as a landfill first by the Air Force and then by Navy from 1972 until about 1978. In addition to general disposal of wastes, landfill operations included the excavation of trenches (100 to 200 feet long by 20 to 25 feet wide by 10 to 15 feet deep) into which wastes were disposed. Occasional burning of the waste took place in the trenches. Trenches were filled with waste to within 3 or 4 feet of the ground surface and then backfilled with soil and seeded. The estimated volume of waste is more than 1 million cubic yards (yd^3) (C.C. Johnson & Associates, 1985). Landfill wastes reportedly included trees, leaves, paper, plastic, scrap wood, scrap metal, sections of pipe, bricks, cables, fire hose, parachutes, transformers, hospital wastes, paint and paint thinner, automobile batteries, airplane parts, asbestos, low-level radiological waste, and possibly some waste oil. Figure 1-3 shows the approximate boundaries of the landfill and locations of trenches.

The OU 2 parcel sold at public auction on January 31, 2008, to a private property owner who subsequently transferred the property on February 4, 2008, to Bogey Boggy Creek 08, LLC, a Florida limited liability company. The current use of the property is recreational. Combat City, an airsoft recreational facility, operates on the property. The intended future use of the property is industrial.

1.2.3 Site Characteristics

Discussions of OU 2 topography, surface hydrology, geology, hydrogeology, and groundwater flow are included in the following subsections.

1.2.3.1 Topography

The surface elevation of OU 2 is approximately 90 feet above mean sea level (amsl) across the site. The landfill's relatively flat topography slopes from north to south. The former golf course is covered with grass, with shrubs and trees along the perimeters of the former fairways, and is bounded on the east and south by man-made canals.

1.2.3.2 Surface Hydrology

Surface water drainage at the McCoy Annex is controlled by a series of drainage canals, ditches, and ponds located in and around OU 2. Well-defined drainage canals are located along the eastern and southern boundaries of the Northern Area and the eastern boundary of the Southern Area. The drainage canal along the southern boundary of the Northern Area interconnects with ponds and a canal located along the eastern boundary of the Southern Area. Water level readings from the RI suggest that some of the ponds tend to act as local recharge areas to the unconfined aquifer and that the drainage canals tend to function as discharge areas for the surficial aquifer.

Surface runoff from the Northern Area flows to the two canals that merge near its southeastern corner. Water from the canals flows to a storm water drainage ditch located in the median of Tradeport Drive, flows southward, and eventually drains into Lake Gillooly located east of the intersection of Boggy Creek Road and Tradeport Drive. Surface water runoff from the Southern Area flows into the drainage canal along its eastern perimeter (Figure 1-4) and also flows southward into Lake Gillooly.

1.2.3.3 Geology

Soils at OU 2 consist of poorly to moderately well-drained fine sands that are nearly level to gently sloping. The surface soil and subsurface sediments were deposited in marine environments. The sediments consist primarily of quartz sand with silt, clay, and shell fragments that vary both laterally and vertically.

1.2.3.4 Regional Hydrogeology

The aquifer system underlying the Orlando area consists of, in order of increasing depth, the surficial aquifer, intermediate aquifer, and Floridan aquifer. The surficial aquifer is an unconfined sand aquifer that extends from the water table to the top of the Hawthorn Group and may be locally divided into a series of aquifers by discontinuous beds or lenses of silty clay. The water table ranges in depth from 2 to 12 feet below ground surface (bgs). Groundwater movement is generally away from topographic high areas toward low areas of discharge. The surficial aquifer is recharged by rainfall, seepage from ponds, and upward leakage from confined aquifers.

The intermediate aquifer consists of small lenses of permeable material such as limestone, shell, gravel, or sand within the otherwise impermeable clayey sediments of the Hawthorn Group. These lenses are usually small in both vertical and horizontal extent and typically do not have sufficient yields to justify their use as a potable source. Minimal recharge occurs by either upward leakage from the underlying Floridan aquifer or downward seepage from the overlying surficial aquifer. Because of the discontinuous nature of the lenses comprising the intermediate aquifer, the Hawthorn Group typically acts as a confining unit between the surficial and Floridan aquifers (Tetra Tech, 2001).

The Floridan aquifer is the principal artesian aquifer in Orange County. It includes all or parts of the Avon Park and Lake City limestones, Ocala Group limestones, and typical basal limestone of the Hawthorn Group. The top of the Floridan aquifer is approximately 170 feet bgs at OU 2. There are two water-producing zones within the Floridan aquifer separated by a relatively impermeable zone of soft limestone and dolomitic limestone. The general groundwater flow direction in the Floridan aquifer is to the east (Tetra Tech, 2001).

1.2.3.5 Site Hydrogeology

Local hydrogeology was investigated during the RI using cone penetrometer borings, piezometers, and wells. The collected data showed that the surficial aquifer at the site is unconfined and consists predominantly of fine- to medium-grained quartz sand with a saturated thickness of approximately 25 feet. The bottom of the surficial aquifer is delineated by the presence of laterally extensive, dense, greenish clay at a typical depth of 30 feet bgs. The thickness of the clay unit ranges from 10 to 20 feet. Cone penetrometer data indicate that this layer becomes thinner and contains more sand in the extreme southern portion of the site near Boggy Creek Road. The clay also acts to confine an underlying sand unit that was up to 35 feet thick. Based on the physical characteristics and stratigraphic position described in the published literature (Lichtler, 1972), both the clay and underlying confined sand unit are considered to represent the top of the Hawthorn Group.

1.2.3.6 Groundwater Flow

Figures 1-5 and 1-6 show the potentiometric surfaces for wells in the shallow and intermediate portions of the surficial aquifer, respectively, based on August 1998 elevation data. These data, collected during the RI, are more comprehensive than recent elevation data because the RI included measurements from many wells and piezometers that are no longer sampled. Subsequent water level measurements indicate that potentiometric surfaces are consistent with those observed during the RI.

The contours indicate that the water table was fairly regular, with a gentle gradient (less than 0.004) except in close proximity to the recharge areas (ponds) and discharge areas (drainage canals), where steeper gradients were observed (0.04). The water levels in well pairs typically indicated an upward flow component in the surface aquifer near the eastern canal and a downward flow component in areas away from the canal. More details are provided in the RI Report (Tetra Tech, 2001).

1.3 SITE CHARACTERIZATION

1.3.1 Previous Investigations

Previous investigative activities at the McCoy Annex Landfill included an Initial Assessment Study (C.C. Johnson & Associates, 1985), Verification Study (Geraghty & Miller, 1986), and RI (Tetra Tech, 2001).

1.3.2 Summary of Remedial Investigation

The RI at OU 2 included sampling and analysis of surface soil, groundwater, surface water, and sediment. No subsurface soil samples were collected due to the presence of known landfill materials in the subsurface. The RI was performed in three phases between May 1997 and February 2001, and the RI Report was issued in March 2001.

Surface soil and groundwater data from Phases I and II were evaluated and used to focus the Phase III investigation. This evaluation identified the following three areas of uncertainty associated with the thickness of the soil cover over landfill areas, nature and extent of contamination, and baseline risk assessment:

- Based on Phase I and II geophysical survey results, interpretation of the soil cover thickness was impaired by a shallow water table, thickly vegetated areas, and golf course landscape alterations and irrigation.

- High levels of turbidity in Phase II monitoring well samples possibly resulted in false positive detections of chemicals and greater dissolved concentrations of some chemicals in groundwater samples than existed in non-turbid formation water.

- Dredging of the canal bordering the eastern perimeter of OU 2 following the collection of Phase II surface water and sediment samples resulted in a potentially significant change in surface water and sediment conditions. In addition, the upstream surface water and sediment samples contained contaminants that did not appear to be related to OU 2 activities.

To address these uncertainties, Phase III of the RI included hand auger borings and test pit excavations to aid in interpretation of soil cover thickness, resampling of 46 monitoring wells using techniques to reduce well stress and sample turbidity, collection of direct-push technology (DPT) groundwater samples in the southern portion of the landfill, resampling of 11 surface water and sediment sampling locations in the dredged canal, and surface water and sediment sampling at six new upstream locations.

Combined Phase I, Phase II, and Phase III RI sampling activities consisted of 138 surface soil samples (including 10 background samples), 533 DPT groundwater samples, 94 groundwater samples from 48 monitoring wells, and 39 surface water samples and 39 sediment samples from 28 locations. DPT groundwater samples were analyzed for volatile organic compounds (VOCs) only; all other samples were analyzed for VOCs, semivolatile organic compounds (SVOCs), metals, total petroleum hydrocarbons (TPHs), pesticides, herbicides, and radiological parameters. Ten percent of the samples were also analyzed for polychlorinated biphenyls (PCBs). Figure 1-7 shows RI surface soil sample locations; Figure 1-8 shows surface water and sediment sample locations; and Figure 1-9 shows groundwater sample locations.

Screening values for the RI data were 1999 Florida Department of Environmental Protection (FDEP) Cleanup Target Levels (CTLs) (those in effect at the time of the RI). For surface soil and groundwater RI data, NTC background screening values (BGSVs) were also used for screening (ABB Environmental Services, Inc., 1995). NTC BGSVs are only available for metals in surface soil and groundwater.

The results of the RI were as follows:

- The limits of the landfill (Figure 1-3) are consistent with historical records.
- Except for a few isolated areas that were noted in the RI, the soil cover thickness was 2 feet.
- SVOCs were detected in surface soil, surface water, and groundwater at levels that exceeded 1999 FDEP CTLs.
- VOCs were detected in groundwater at levels that exceeded 1999 CTLs.
- Pesticides were detected in surface soil and surface water at levels that exceeded 1999 CTLs.
- TPHs were detected in surface soil at levels that exceeded 1999 CTLs.

- Metals were detected in surface water and sediment at levels that exceeded 1999 CTLs, and in surface soil and groundwater at levels that exceeded 1999 CTLs and NTC BGSVs.

- Radionuclides were detected in surface soil, surface water, and sediment at levels that exceeded 1999 CTLs.

- Groundwater in the surficial aquifer flowing beneath the landfill transports dissolved contaminants to the canals that border the entire eastern perimeter of OU 2. However, contaminant retardation due to sorption of chemicals in the aquifer matrix results in generally low contaminant migration rates (17 to 85 feet per year for some organic contaminants and less than 1 foot per year for metals).

- Downward migration of contaminants from the surficial aquifer to the underlying confined aquifer in the Hawthorn Group is not indicated by site data.

The results of the risk assessments performed as part of the RI are discussed in Section 2.0. Further details can be found in the RI Report (Tetra Tech, 2001).

1.3.3 Interim Remedial Actions Completed Prior to Issuance of OU 2 RI

Two surface soil IRAs were completed at OU 2 during final RI Report preparation. Descriptions of these IRAs are included in this report for completeness. A third surface soil IRA, performed in 2005, is described in Section 1.4.4.1. The locations of all three surface soil IRAs are shown on Figure 1-10.

1.3.3.1 Surface Soil IRA 1 – 1999

Two surface soil samples collected during the RI had polynuclear aromatic hydrocarbon (PAH) concentrations that exceeded 1999 Soil Cleanup Target Levels (SCTLs). In June 1999, approximately 2,000 yd^3 of surface soil were excavated from the locations of surface soil samples S91, north of the fairway for hole No. 3, and S103, north of the fairway for hole No. 7 (Bechtel, 2000). The excavations were then backfilled with 2 feet of certified clean fill and compacted, graded, and seeded. The necessity for this IRA is documented in a Time-Critical Removal Action Memorandum (Bechtel, 1999).

1.3.3.2 Surface Soil IRA 2 – 2000

During the RI, a 25-acre portion of OU 2 (predominantly in the Southern Area) was determined to have less than 2 feet of soil cover, as required for landfills by FDEP guidance applicable at the time of closure. Therefore, a second surface soil IRA was performed in 2000 to provide additional soil cover. The site was cleared prior to spreading the soil cover. The area, which included 28 surface soil locations, was covered with 2 feet of additional soil composed of an initial 6 inches of soil from the Main Base Golf Course (MBGC) followed by 18 inches of soil from a clean borrow source (Environmental Enterprise

Group, 2000). After the soil was spread, the site was graded, seeded, and mulched. Necessity for this IRA is documented in a Time-Critical Removal Action Memorandum (Bechtel, 1999).

The soil used as the bottom 6 inches of cover was transported from the MBGC as part of an RA required to complete the transfer of the MBGC to the City of Orlando. Use of this soil, which had arsenic concentrations that exceeded the residential SCTL but not the industrial SCTL, was agreed to by the Orlando Partnering Team (OPT) as described in Addendum 1 to the Memorandum of Agreement between the Navy and the City of Orlando (City of Orlando, 1997).

1.3.4 Post-RI Surface Water and Groundwater Sampling

Following the completion of the RI, monitoring programs were developed for surface water in the canals along the eastern border of OU 2 and for groundwater.

1.3.4.1 Surface Water in Canals

In the canals bordering the eastern boundary of OU 2, quarterly sampling began in 2002 at eight surface water monitoring locations (SW29 through SW36), with samples analyzed for VOCs, iron, and manganese (Tetra Tech, 2003b). In September 2005, the sampling frequency was changed from quarterly to semiannually, and in November 2005, monthly sampling for VOCs only began at two existing stations (SW32 and SW35) and one new station (LG1).

1.3.4.2 Groundwater

Quarterly groundwater monitoring at OU 2 began in March 2002; the monitoring frequency was revised to semiannual in September 2005. A revised long-term monitoring program was developed for OU 2 in 2006, as detailed in the Optimization Study Report for Operable Unit 2 (Tetra Tech, 2006).

1.4 CHANGES AT OU 2 SINCE 2003

Since submission of the 2003 OU 2 FS, ownership of the OU 2 property has changed, LUCs have been developed and implemented, revised CTLs have been issued by FDEP, and two additional IRAs (one surface soil and one groundwater) have been completed at the site, as described below. A chronological summary of the events at OU 2 is provided as Table 1-1.

1.4.1 Ownership of OU 2 Property

At the time of the RI, the City of Orlando intended to take ownership of the OU 2 property and to install recreational fields in the Southern Area (City of Orlando, 2002). In 2006, the city decided that it would not take ownership of the OU 2 property, and plans for recreational fields were canceled. The BCGC was closed in January 2007. The Finding of Suitability to Transfer McCoy Annex, Early Transfer of Operable Unit 2

(Tetra Tech, 2008) documents the suitability of the OU 2 property for early public sale prior to completion of necessary remedial actions. The OU 2 parcel sold at public auction on January 31, 2008, to a private property owner who subsequently transferred the property on February 4, 2008, to Bogey Boggy Creek 08, LLC. The current use of the property is recreational. Combat City, an airsoft recreational facility, operates on the property. The intended future use of the property is industrial.

According to the Quitclaim Deed issued by the State of Florida for the sale of the property on January 31, 2008, maintenance of 2 feet of landfill cover is now the responsibility of Bogey Boggy Creek 08, LLC, the current property owner (State of Florida, 2008).

The Quitclaim Deed also states that the U.S. government, its officers, agents, employees, contractors, and subcontractors will have the right to enter OU 2 to conduct annual physical inspections, tests, investigations, long-term monitoring, 5-year reviews, and surveys, as well as to perform RAs as required.

1.4.2 Land Use Controls

LUCs were developed for OU 2, included in the Finding of Suitability to Transfer McCoy Annex, Early Transfer of Operable Unit 2 (Tetra Tech, 2008), and implemented by the issue of the Quitclaim Deed on January 31, 2008. These LUCs, as stated below, are required in all deeds transferring the OU 2 property:

1. Groundwater Notice: Hazardous substance contamination in excess of FDEP Groundwater Cleanup Target Levels (GCTLs) has been detected in the groundwater at OU 2.

2. Groundwater Use Controls: The installation of any wells or the extraction or use of groundwater for any purpose is prohibited without prior written authorization from the Navy and FDEP.

3. Allowed and Prohibited Uses of OU 2 Property: Commercial, industrial, or recreational uses of the Subject Property are permitted except for:

    - Uses that would cause direct exposure to contaminated soil by workers in excess of the worker exposure criteria set forth in Table VI, Chapter 62-777, Florida Administrative Code (F.A.C.) (April 2005), as may hereafter be amended; and

    - Uses incidental to an otherwise permissible commercial, industrial, or recreational use that would cause exposures to anyone greater than those for workers as determined under the criteria set forth in Table VI, Chapter 62-777, F.A.C. (April 2005) as may hereafter be amended. Surface improvements or alterations to the Subject Property that reduce or eliminate direct exposure to contaminated soil may be used to overcome the above exceptions upon demonstration to FDEP that those improvements or alterations have reduced risks to acceptable levels.

The following other uses of, or activities on, OU 2 are expressly prohibited without prior written approval from the Navy and FDEP:

- Agricultural uses.
- Residential or residential-like uses (i.e., housing, child care facilities, any kind of school, including pre-schools, elementary schools and secondary schools, playgrounds, adult convalescent or nursing care facilities).

4. Excavation Control: The excavation, disturbance, or removal of soil from the OU 2 is prohibited without prior written approval from the Navy and FDEP.

5. Remedial Systems Non-Interference Controls: Tampering with or damaging groundwater monitoring and/or remediation systems (including pumps, wells, piping, utilities and associated appurtenances) currently located or that may later be installed at OU 2 by the Navy is prohibited; but adjustments may be made to the systems (such as relocation or realignment) upon agreement between the Navy and Subject Property owner. FDEP approval of any adjustments that may affect the function of these systems or location/construction of wells is required. The siting of any future systems will be coordinated with the landowner(s) in an effort to minimize interference with their use of OU 2.

6. Landfill-Related Control: Soil contamination in excess of FDEP SCTLs remains at OU 2. The cap on the landfill must remain intact. The excavation, drilling, or other disturbance of soil within OU 2 is prohibited without prior written authorization from the Navy and FDEP. This control is established to prevent direct or indirect contact with buried wastes. Furthermore, the owner of the property shall maintain at least 2 feet of cover over buried wastes.

7. The property owner must comply with the provisions of any health and safety plan provided to him and put into effect by the U.S. government in connection with any ongoing or future environmental investigative and/or remedial activities to be undertaken by the U.S. government at OU 2.

8. The property owner may not hinder or prevent the U.S. government from constructing, upgrading, operating, maintaining, and monitoring any groundwater treatment facilities and groundwater monitoring network or engage in any activity that will disrupt or hinder further remedial investigation, response actions, or oversight activities on the Subject Property or adjoining property within the former NTC Orlando. Although the Navy's remedial efforts must take priority, the Navy will cooperate with the property owner to minimize the conflict between necessary environmental investigation, remediation, maintenance work, or inspection of LUCs, and the activities of the property owner in their use and enjoyment of the Subject Property.

9. The property owner must provide written notice to the Navy and FDEP of any sale lease of any part of OU 2 and provide contact information concerning the new owner or occupant.

10. If the OU 2 property is sold or leased, the seller must provide notice of the LUCs to the new owner or lessee. These LUCs must remain in place, regardless of ownership.

1.4.3 Revised CTLs

In February 2005, FDEP issued revised CTLs that supersede the 1999 CTLs used in the development of PRGs for the 2003 FS. FDEP CTLs are based on human health considerations, aesthetic factors, and ecological concerns. Therefore, new PRGs have been developed for OU 2, and the human health risk assessment included in the 2001 RI Report has been revised to include new groundwater and surface water data and the new CTLs. The revised risk assessment is included in Section 2.3 of this Revised FS.

1.4.4 Post-2003 Interim Remedial Actions

Two surface soil IRAs performed prior to the completion of the RI are described in Section 1.3.3. A third surface soil IRA and a groundwater IRA have been completed since the issuance of the 2003 FS Report.

1.4.4.1 Surface Soil IRA 3 – 2005

An inspection of the OU 2 landfill cover conducted in 2004 revealed solid waste visible at the ground surface at three locations in the Northern Area, within the perimeter of the golf course. Therefore, a third surface soil IRA was completed in 2005 to add cover to these areas. Approximately 3,600 yd^3 of certified clean fill from an off-site borrow source was placed over 71,000 square feet (ft^2) of the Northern Area. The backfilled areas were graded and sodded (CH2MHill, 2007a). The locations affected by this IRA are shown on Figure 1-10.

1.4.4.2 Groundwater – Biobarrier Injection Pilot Study

The groundwater IRA at OU 2 included the installation of a permeable bioreactive barrier (biobarrier) at the eastern border of the Southern Area to intercept the portion of the southern groundwater VOC plume that was migrating onto GOAA property. The activities and decisions that led to the installation of the biobarrier are summarized below. Full details of the IRA are provided in the following CH2MHill documents:

- Abbreviated Work Plan for Remedial Action Pre-Design Activities (2004a)
- Summary of Pre-Design Data Collection Activities, Remedial Action at Operable Unit 2 (2004b)
- Abbreviated Work Plan for Additional Remedial Action Pre-Design Activities (2004c)
- Biobarrier Injection Pilot Study Work Plan (2006)
- Pilot Study Work Plan Addendum, Biobarrier Injection of Emulsified Oil Substrate at Operable Unit 2 (2007b)

- Work Plan Revision (2008a)
- Biobarrier Injection Pilot Study Summary Technical Memorandum (2008b)

At an April 2003 meeting with Tetra Tech, the City of Orlando, the Navy, and Nodarse & Associates to discuss the impacts of groundwater contamination at OU 2 on GOAA property to the east, GOAA representatives expressed concern that groundwater contamination migrating onto GOAA property could cause a violation of their National Pollutant Discharge Elimination System permit. The Navy requested that AGVIQ-CH2MHill Joint Venture II (JV-II) complete field work to determine where contaminants were crossing the property line and to evaluate the fate of the contaminants.

Following initial sampling, JV-II recommended continued monitoring of surface water and groundwater, with the collection of additional natural attenuation data to determine whether enhanced reductive dechlorination treatment of the dissolved plume in the form of a barrier was a feasible remedial alternative. In January 2006, after additional field testing and pre-design analysis, JV-II proposed a pilot study to evaluate key design parameters for the biobarrier.

Two injection areas (Area 1 and Area 2), each including an injection well (or injection well pair) and three monitoring well pairs, were created in the Southern Area immediately west of the eastern OU 2 boundary. The results of baseline groundwater samples collected in June 2007 from the wells pairs directly north of the injection wells suggested that the groundwater is naturally reducing and that reductive dechlorination was already occurring at OU 2. The OPT team concluded that enhancing the naturally occurring processes with supplemental carbon was a suitable remedial approach for the site and chose Emulsified Oil Substrate (EOS®) as the carbon source.

Initial Pilot Study EOS® injections took place in July 2007, followed by sample collection in August and November. The pilot study concluded that the nested injection wells used in Area 2 were preferable for substrate distribution compared to the single injection well used in Area 1. The sustainable injection flow rate (at which there was no “daylighting” of substrate) in Area 2 ranged from 2 gallons per minute (gpm) in the intermediate zone to 3 gpm in the shallow zone. Based on total organic carbon (TOC) concentrations, the estimated radius of influence was 3 feet in Area 1 and ranged from 7 feet in the shallow zone to 10 feet in the intermediate zone in Area 2.

In the May 2008 OPT Meeting, JV-II proposed a Phase II Pilot Study which would include the installation of 11 pairs of injection wells in two parallel rows and six pairs of groundwater monitoring wells. The Phase II Pilot Study biobarrier wall was implemented in September 2008 (Figure 1-11). In April 2010, the results of Phase II were published, indicating decreases in tetrachloroethene (PCE) and trichloroethene (TCE) concentrations in all the treatment monitoring wells within or downgradient of the biobarrier (CH2MHill, 2010).

JV-II issued the Biobarrier Injection Pilot Study Summary Technical Memorandum (CH2MHill, 2008b) in October 2008. The summary included a recommendation for full-scale treatment: a 450-foot biobarrier with two biobarrier rows, a 2-percent EOS® concentration, and 45 nested injection well locations (based on 20-foot spacing) or 29 nested injection well locations (based on 30-foot spacing).

1.5 PRESUMPTIVE REMEDY

Presumptive remedies are preferred technologies for common categories of sites that are based on United States Environmental Protection Agency (EPA) evaluations of performance data on previous technology implementation. By streamlining site investigation and accelerating the remedy selection process, presumptive remedies are expected to ensure the consistent selection of RAs and reduce the cost and time required to clean up similar types of sites. Presumptive remedies are expected to be used at all appropriate sites, except under unusual site-specific circumstances.

According to Highlight 1 of Presumptive Remedy for CERCLA Municipal Landfill Sites (EPA, 1993), the source containment components of the presumptive remedy for landfills include one or more of the following:

- Landfill cap
- Source area groundwater control to contain plume
- Leachate collection and treatment
- Landfill gas collection and treatment
- Institutional controls to supplement engineering controls

This guidance goes on to state:

> *"While the universe of alternatives to address the landfill source will be limited to those components in Highlight 1, potential alternatives that may exist for each component or combinations of components may be evaluated in the detailed analysis. For example, one component of the presumptive remedy is source area groundwater control. If appropriate, this component may be accomplished in a number of ways, including pump and treat, slurry walls, etc."*

Presumptive remedy guidance is provided in Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills (EPA, 1996), which identifies the waste characteristics of military landfills that allow for the use of streamlined procedures:

- Risks are low level, except for "hot spots."
- Treatment of wastes is usually impractical due to the volume and heterogeneity of the waste.
- Waste types include household, commercial, non-hazardous sludge, and industrial waste solids.

- Lesser quantities of hazardous wastes are present as compared to municipal wastes.
- Land application units, surface impoundments, injection wells, and waste piles are not included.

The guidance further states that military landfills are anticipated to have industrial solid waste, paints (and paint thinners), pesticides, transformer oils, and other solvents in relatively low proportion to the volume of municipal wastes including construction debris, commercial/household type garbage, and yard wastes. The types of waste that would exclude a military site from presumptive remedy consideration include chemical warfare agents, munitions, and other explosives.

Based on knowledge of historical landfill operations and data collected as part of the RI, the presumptive remedy will be applied to the landfill material and the source area groundwater at OU 2.

2.0 ENVIRONMENTAL CONDITIONS

2.1 NATURE AND EXTENT OF CONTAMINATION

The nature and extent of contamination at OU 2 was determined based on data from the 2001 RI and ongoing monitoring programs. RI data for surface soil, pond surface water and sediment, and canal sediment were re-evaluated using 2005 CTLs and 2009 EPA Regional Screening Levels (RSLs) in this Revised FS. Because both surface water in canals and groundwater at OU 2 are sampled as part of ongoing monitoring programs, recent data were evaluated using 2005 CTLs and 2009 RSLs for these two media, as described in the following sections. The only RSLs available for water are tap water RSLs. Therefore, all comparisons of chemical concentrations in surface water and groundwater are extremely conservative. Because there are no sediment RSLs, all sediment concentrations were compared to soil RSLs. All data used for determining the nature and extent of contamination at OU 2 are contained in Appendix A.

2.1.1 Surface Soil

During the RI, prior to the completion of any soil IRAs, surface soil samples (0 to 2 feet bgs) were collected across the entire area of the former landfill and adjacent areas (Figure 1-7) and analyzed for VOCs, SVOCs, metals, TPH, pesticides, herbicides, and radiological parameters. Ten percent of the samples were also analyzed for PCBs. Comparison of the data from these samples to FDEP SCTLs in 1999 led to two surface soil IRAs, as explained in Section 1.3.3. The data set used for selection of surface soil contaminants of concern (COCs) and the updated risk evaluation includes only the validated RI data for surface soil that was neither removed nor covered with clean soil during either of these IRAs.

Carcinogenic PAHs have a common toxicity mechanism but have different toxic potencies. Therefore, the Toxic Equivalency Factor (TEF) approach is used to convert individual PAH concentrations in a sample to a single concentration of the index chemical, benzo(a)pyrene. To calculate the benzo(a)pyrene equivalent (BaPEq) concentration, each PAH concentration is multiplied by a TEF ranging from 0.001 to 1.0, depending on the toxicity of the individual PAH, and the adjusted concentrations are summed. At OU 2, the BaPEq was used to account for the toxicity of benzo(a)pyrene, benzo(a)anthracene, benzo(k)fluoranthene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene in surface soil. The BaPEq concentration in each sample was then compared to the benzo(a)pyrene SCTL, which is the only SCTL provided for carcinogenic PAHs in Chapter 62-777, F.A.C. (FDEP, 2005).

Surface soil samples were re-evaluated with respect to 2005 FDEP SCTLs and 2009 EPA RSLs for this Revised FS. EPA radiological PRGs (EPA, 2010) for residential soil and for an outdoor worker were used for the evaluation of radiological chemicals. Twelve contaminants were identified in surface soil with maximum detected concentrations greater than their respective minimum SCTLs. BaPEqs and arsenic

were detected in surface soil at concentrations exceeding industrial or adjusted industrial direct contact SCTLs; acetone, fluoranthene, pyrene, 4,4'-dichlorodiphenyldichloroethylene (DDE), alpha-chlordane, dieldrin, arsenic, chromium, mercury, selenium, and silver were detected at concentrations that exceeded SCTLs for leaching to freshwater surface water (FSW). Detected concentrations of BaPEqs and arsenic exceeded both the industrial and residential EPA RSLs, and the detected concentration of lead-210 (detected in just 1 of 13 samples analyzed) exceeded the EPA radiological PRG for residential soil (EPA, 2010).

As discussed in the RI, the source of radionuclides (e.g., lead-210) detected at OU 2 is most likely due to naturally occurring minerals in the surficial deposits. The data show that gross alpha and gross beta were widely detected in environmental media at OU 2. The surficial aquifer sediments (matrix) and overlying soils are composed of reworked sediments of the Hawthorn Group that is widely known to contain phosphate minerals. In Florida, phosphate sediments are known to have elevated concentrations of naturally occurring radioactive material such as the uranium series and thorium series. Isotopic analysis of representative sediment and groundwater samples performed during the RI demonstrate that isotopic ratios are consistent with the presence of naturally occurring minerals that include radionuclides.

2.1.2 Surface Water

During the RI, surface water samples were collected from ponds and canals located on and adjacent to OU 2 (Figure 1-8), and the data sets were evaluated separately. For this Revised FS, the two data sets were also considered separately.

Pond surface water data from the RI were re-evaluated with respect to 2005 FSW CTLs and 2009 tap water RSLs. Surface water samples collected from ponds were analyzed for VOCs, SVOCs, inorganics, TPH, total dissolved solids (TDS), total suspended solids (TSS), hardness, alkalinity, pesticides, herbicides, gross alpha, and gross beta. Seven metals (aluminum, chromium, copper, iron, lead, mercury, and zinc) and gross alpha were detected in ponds at concentrations exceeding 2005 FDEP FSW CTLs. Arsenic, zinc, and gross alpha were detected at concentrations exceeding EPA tap water RSLs.

Currently, semiannual samples are collected from six surface water monitoring locations (SW29, SW30, SW31, SW33, SW34, and SW36) in the canals bordering the eastern boundary of OU 2, and analyzed for VOCs, iron, and manganese. Samples are collected monthly from three surface water monitoring locations (SW32, SW35, and LG1) and analyzed for VOCs only. The current surface water sampling locations are shown on Figure 2-1.

Canal surface water data from January 2007 through March 2009 were compared to 2005 FDEP FSW CTLs and EPA tap water RSLs. Iron, detected in 48 of 48 canal surface water samples, was the only contaminant detected at concentrations exceeding the FSW CTL. Benzene,1,4-dichlorobenzene (DCB),

chlorodibromomethane, chloroform, PCE, TCE, vinyl chloride, and iron were detected at concentrations exceeding their respective EPA tap water RSLs.

2.1.3 Sediment

During the RI, sediment samples were collected concurrently with and in the same locations as surface water samples. As with the surface water data, pond sediment data were evaluated separately from canal sediment data. Sediment samples were analyzed for VOCs, SVOCs, inorganics, TPHs, pesticides, herbicides, and radiological parameters (gross alpha and gross beta). Selected samples were also analyzed for PCBs and specific radionuclides. These data were re-evaluated with respect to 2005 FDEP SCTLs and 2010 EPA soil RSLs for this Revised FS. SCTLs and soil RSLs were used for evaluation because there are no CTLs or RSLs for sediment. EPA radiological PRGs (EPA, 2010) for residential soil and for an outdoor worker were used for the evaluation of radiological chemicals.

In pond sediment, no chemical concentrations exceeded direct contact SCTLs. Chromium, mercury, and selenium concentrations exceeded corresponding SCTLs for leaching to FSW. The concentration of arsenic exceeded the residential soil RSL, and the concentration of potassium-40 (detected in just 1 of 12 pond and canal sediment samples analyzed) exceeded both the residential and industrial soil radiological PRGs. As discussed in the RI, the source of radionuclides (e.g., potassium-40) detected at OU 2 is most likely due to naturally occurring minerals in the surficial deposits. The data show that gross alpha and gross beta were widely detected in environmental media at OU 2. The surficial aquifer sediments (matrix) and overlying soils from which the local pond sediments are derived are composed of reworked sediments of the Hawthorn Group that is widely known to contain phosphate minerals. In Florida, phosphate sediments are known to be accompanied by elevated concentrations of naturally occurring radioactive material such as uranium series and thorium series. Isotopic analysis of representative sediment and groundwater samples performing during the RI demonstrated that isotopic ratios were consistent with naturally occurring minerals.

In canal sediment, no chemical concentrations exceeded direct contact SCTLs. Chromium, mercury, and gamma-chlordane concentrations exceeded corresponding SCTLs for leaching to FSW; no chemical concentrations exceeded EPA RSLs for residential or industrial exposure to soil.

2.1.4 Groundwater

The RI Report details groundwater sampling performed during the RI (Tetra Tech, 2001). Currently, nine well pairs (OLD-OU2-2A/B, -3A/B, -21A/B, -27A/B, -29A/B, -30A/B, -31A/B, -32A/B, and -33A/B), two shallow DPT wells (OLD-OU2-DP01A and -DP02A), and four intermediate wells (OLD-OU2-12B, -18B, -28B, and -37B) are sampled semiannually. Samples collected from OLD-OU2-12B, -28B, and -37B

and OLD-OU2-DP01A are analyzed for VOCs only. Samples from the remaining wells are analyzed for VOCs, iron, manganese, and natural attenuation (NA) parameters semiannually and ammonium annually.

Data from all groundwater samples collected at OU 2 from March 2008 through April 2009 were compared to 2005 FDEP GCTLs and EPA tap water RSLs. This included data from samples collected as part of the ongoing groundwater sampling program and data from samples collected at OLD-OU2-39B, -40B, -42B, -43B, -45B, -49A/B, -50A/B, -51A/B, -52A/B, and -53A/B during the biobarrier injection pilot study. These monitoring wells are shown on Figure 2-1. Thirteen contaminants were detected at concentrations that exceeded their respective GCTLs, including 1,2,4-trimethylbenzene, benzene, chlorodibromomethane, chloroform, chloromethane, cis-1,2-dichloroethene (DCE), isopropylbenzene, methylene chloride, naphthalene, TPH, PCE, TCE, vinyl chloride, iron, and manganese. Seventeen contaminants were detected at concentrations that exceeded their respective EPA tap water RSLs, including 1,1,2-trichloroethane, 1,2,4-trichlorobenzene, 1,4-DCB, benzene, carbon tetrachloride, chlorobenzene, chlorodibromomethane, chloroform, cis-1,2-DCE, ethyl benzene, methylene chloride, naphthalene, PCE, TCE, vinyl chloride, iron, and manganese.

2.2 CONTAMINANT FATE AND TRANSPORT

The former landfill at OU 2 is considered to be a primary source of many contaminants detected during the RI and in subsequent groundwater and surface water monitoring because landfill materials were buried in trenches or pits that intercept the water table. However, the urban development of the area, along with construction and operation of the BCGC subsequent to closure of the landfill, are also considered potential contributors to contamination. A portion of the source material in the landfill is in direct contact with groundwater in the surficial aquifer, which discharges to the canals along the eastern border of OU 2. A conceptual site model for OU 2 is presented as Figure 2-2.

Evaluation of data collected at OU 2 suggests that the landfill is the primary source of PAHs in surface soil, of inorganic contaminants in surface water and sediment, and of organic (i.e., VOC and SVOC) and inorganic contaminants in groundwater. The landfill is also possibly a secondary source for inorganics in surface soil. Organic and inorganic chemicals are being transported with groundwater flow toward the canals. Concentrations of organic contaminants in excess of GCTLs are greater in the intermediate zone of the surficial aquifer, which may be a result of waste burial beneath the water table and the slight downward gradient in the surficial aquifer beneath the landfill. Also, the organic contaminants are likely to be more mobile in groundwater than the inorganic contaminants. The presence of a clay aquitard at the bottom of the surficial aquifer appears to provide an effective barrier to prevent deeper contaminant migration into underlying confined aquifers.

Gross alpha and gross beta were frequently detected in soil, sediment, surface water, and groundwater. Analyses for specific radionuclides were conducted on a limited number of soil and sediment samples

and isotopic analyses were conducted for representative samples of both sediment and groundwater samples. While historical references suggest that low-level radionuclides wastes may have been deposited in the landfill, the widespread detections of gross alpha and gross beta in all media suggest a more ubiquitous source. The few detections of specific radionuclides at concentrations that exceed the EPA PRGs for these chemicals do not suggest that they are a significant component of the waste materials. Because the surface soils and sediments are composed of undifferentiated Holocene sedimentary deposits, they are likely to include reworked sediments of the Hawthorn Group that are known to contain phosphate minerals. Phosphates are typically accompanied by elevated concentrations of naturally occurring radioactive material that are products of the uranium and thorium series. The isotopic ratios that were evaluated for both sediment and groundwater indicated that the concentrations, when corrected for activity, are consistent with the expected ratios for naturally occurring isotopes. The average Florida soil has about 2 picocuries per gram (pCi/g) of radioactivity from both uranium and radium; a mineralized soil in an un-mined area has about 10 pCi/g of radioactivity (Florida Industrial and Phosphate Research Institute, 2012). Detections of gross alpha, gross beta, and low levels of radionuclides in environmental media at OU 2 are believed to reflect the presence of naturally occurring radionuclides in the reworked Hawthorn sediments that are present across the site.

Because burning was reported to have occurred during landfill operation, it is likely that the occurrence of PAHs in surface soil is related to the distribution of impacted soil during covering and closure of the landfill. These soils may also have been disturbed and/or redistributed during construction of the BCGC. Final grading of the golf course, however, appears to have covered much of the impacted soil, as evidenced by the absence of high concentrations of PAHs over most of the central areas of the golf course. Evapotranspiration coupled with thin soil cover in some areas and a high water table may have contributed to the migration of PAHs and inorganics from landfill material or previously impacted soil to surface soil prior to the placement of 2 feet of soil cover.

The RI data indicate that surface application (possibly including spillage and disposal) of pesticides at the BCGC was the primary source for pesticides (and possible related inorganics) in surface soil. The high frequency of detection (FOD) of pesticides in surface soil, their low FOD in sediment, and their absence in surface water and groundwater are consistent with their surface application at the golf course. The early years of operation of the golf course are likely to have included application of now-banned pesticides that are persistent in surface soil. Although pesticides are not likely to occur as dissolved species in groundwater, they could occur in suspended sediment or colloidal particles suspended in groundwater if they were present in the landfill material. The absence of pesticides in RI groundwater samples, some of which had relatively high turbidities when collected, strongly suggests that these compounds are not a significant component of the landfill material. Because they are not present in groundwater, they are not present in canal surface water that is derived predominantly from groundwater discharge. The infrequent and widely spaced detections of pesticides in sediment, both in upstream and downstream locations,

indicate that the sediment deposits at the time of the RI (i.e., the canal has subsequently been periodically dredged) are chemically heterogeneous. The chemical variability is believed to reflect random, limited areas of higher pesticide concentrations resulting from dynamic overland transport and deposition of the sediment in surface water bodies and the effects of dredging the canals.

The most pronounced effects to sediment and surface water have been the discharge and deposition of inorganic contaminants to these media from groundwater discharge and surface runoff. Contaminant transport via soil erosion is likely to have been more significant prior to development of the golf course because the golf course provided vegetative cover even over areas where thin soil cover occurred over the landfill. In addition, the completed IRAs have removed soil hot spots within the golf course area and have provided additional soil cover where landfill material was near the surface. Therefore, wind erosion and transport of soil particulates is not currently considered to be a significant migration pathway. Considering the age of the landfill, the reducing groundwater environment, and the short distance between the landfill and the canals, it is apparent that both organic and inorganic contaminants have been or will be discharged to the canals. Ultimately, the contaminants released from subsurface soil and the landfill by groundwater discharge, or from impacted sediments directly to surface water, may be transported downstream via the canals to Lake Gillooly.

The leaching of contaminants from surface soil and landfill materials and their transport via groundwater to the canals is considered a primary contaminant pathway; therefore, the processes that affect contaminant transport and retardation in the surficial aquifer have been evaluated. Contaminant transport to the deeper confined aquifer in the Hawthorn Group is considered insignificant. Contaminant seepage velocities calculated for the contaminants identified in the RI Report (Tetra Tech, 2001) range from essentially immobile (aluminum at 0.00007 feet per day) to 0.232 feet per day (vinyl chloride). All contaminant velocities are considered to be very low. If the edge of the landfill is within 100 to 200 feet of the drainage canals (as indicated by the geophysical survey results), vinyl chloride would reach the canals in approximately 1 to 2 years. In comparison, arsenic or iron, the most mobile metals, would require 300 and 600 years, respectively, to reach the canals. Because the surficial aquifer flows eastward beneath OU 2 and discharges to the canals, the canals represent the downgradient extent of the groundwater plume at OU 2.

2.3 HUMAN HEALTH RISK ASSESSMENT

Relevant Human Health Risk Assessment (HHRA) estimates presented in the 2001 RI were updated for this Revised FS to account for site land use and corresponding target receptor changes, updates in FDEP and EPA risk assessment methodology and corresponding screening criteria, and evaluation of the most current groundwater and surface water data. The risk evaluation in this Revised FS includes an evaluation of the industrial worker receptor in accordance with current FDEP methodology, cancer risk and non-cancer hazard

estimates for hypothetical future residents and industrial workers exposed to chemicals of potential concern (COPCs) using a risk-ratio technique and EPA RSLs, and use of the most current groundwater and surface water data.

2.3.1 2001 RI HHRA

The 2001 HHRA was conducted in accordance with EPA and FDEP guidance documents and methodology applicable at that time. The HHRA characterized the risks to human health associated with the potential exposure to chemicals in surface soil, surface water, sediment, and groundwater at OU 2. Subsurface soil was not evaluated because the site is a former landfill and inherent contamination of subsurface soil is assumed. Receptors evaluated included recreational users, maintenance workers, trespassers, and hypothetical future on-site residents.

OU 2 was divided into two exposure units for the 2001 HHRA, the Northern Area and the Southern Area (Figure 1-3). As detailed in the RI Report (Tetra Tech, 2001), the wells in the Northern Area had similar contamination profiles that differed from those of the wells in the Southern Area. Groundwater data were grouped appropriately according to sample location. Surface soil, surface water, and sediment data sets were not subdivided for the purposes of the 2001 HHRA. Recreational users in the Northern Area were assumed to be golfers and evaluated as adult and adolescent recreational receptors, and recreational users in the Southern Area were assumed to include children, adolescents, and adults.

Data used for the OU 2 RI HHRA were collected in three phases, as described in Section 1.3.2. Phase I and Phase II groundwater samples were highly turbid, and surface water samples from Phase I and Phase II were collected prior to a dredging event; therefore, the Phase I and Phase II groundwater and surface water data are not likely to be representative of actual site conditions. The OU 2 RI HHRA presents risks using Phase I and Phase II data (Tetra Tech, 2001); however, because these data are not likely representative of site conditions, only risk results that used Phase III data are summarized below.

The risk results from 2001 for the Northern Area are summarized as follows:

Non-cancer hazard indices (HIs) developed for maintenance workers, adult and adolescent recreational users, adult and adolescent trespassers, and hypothetical adolescent residents were less than 1.0, indicating that adverse non-carcinogenic effects were not anticipated under the conditions considered. HIs for hypothetical adult and child residents were 3.3 and 7.7, respectively, primarily due to ingestion of groundwater. Incremental Lifetime Cancer Risk (ILCR) estimates for all receptors evaluated in the Northern Area were within the EPA target risk range of $1x10^{-4}$ to $1x10^{-6}$.

The 2001 risk results for the Southern Area are summarized as follows:

HIs developed for maintenance workers, adult and child recreational users, and hypothetical child residents were less than 1.0, indicating that adverse non-carcinogenic effects were not anticipated under the conditions considered. The ILCR estimate for maintenance workers and hypothetical adolescent residents were within the EPA target risk range. ILCR estimates for the adult and adolescent recreational users were below the EPA target risk range.

HIs for hypothetical adult and adolescent residents exceeded 1.0, indicating that adverse non-carcinogenic health effects were possible. The hazard quotients (HQs) for TCE in groundwater for hypothetical adult and adolescent residents exceeded 1.0; therefore, TCE was the main risk driver for those receptors. ILCR estimates for adult and child hypothetical residents were greater than the EPA target risk range. The predominant risk drivers for hypothetical future residents were COPCs in groundwater and surface water, bis(2-ethylhexyl) phthalate, PCE, TCE, vinyl chloride, and arsenic.

2.3.2 Updated Risk Evaluation Methodology

As in the RI, the groundwater data were again grouped according to northern and southern sample locations for the updated risk evaluation performed for this Revised FS. The soil, pond and canal surface water, and pond and canal sediment data sets were not geographically subdivided. The updated risk evaluation was completed using two different risk methodologies to satisfy both state and federal regulatory requirements. Current FDEP methodology was used to determine COCs for remediation, based on an industrial worker receptor. A risk-ratio technique with EPA RSLs was used to determine quantitative cancer risk estimates (ILCRs) and non-cancer HQs for both hypothetical future residents and industrial workers exposed to COPCs.

Trespassers and recreational users would be exposed to the same media as industrial workers but would likely have a lower exposure frequency and exposure duration (less than 250 days per year for 25 years); thus, any risk evaluation for industrial workers is also considered protective of any trespassers or recreational users. Therefore, the updated risk evaluation was retained only for the industrial and residential receptors.

Quantitative cancer risk estimates were calculated by dividing representative site COPC concentrations (i.e., maximum concentrations or EPCs for soil) by corresponding EPA RSLs and then multiplying by 1×10^{-6}. Non-cancer HQs for the COPCs were calculated by dividing representative site concentrations by the EPA RSL and multiplying by 1.0. Only residential risk could be quantified for groundwater and surface water using this risk-ratio technique because only tap water RSLs are available.

The basic steps of the risk assessment methodologies used in this Revised FS are as follows:

- Determine the chemicals of interest (COIs)
- Identify COPCs using both FDEP and EPA methodologies
- Select COCs using FDEP risk methodology
- Calculate risk using EPA risk methodology

2.3.2.1 Chemicals of Interest

The COIs for both FDEP and EPA methodologies include all contaminants detected in at least one sample. Those COIs with no FDEP CTLs were not evaluated as FDEP COPCs. Likewise, those COIs with no 2009 EPA RSLs were not evaluated as EPA COPCs. Radiological COIs were evaluated using EPA radiological PRGs for residential soil and workers (EPA, 2010).

2.3.2.2 Contaminants of Potential Concern

The selection of COPCs was based on COIs, and the list was developed by considering the concentrations, occurrence, and distribution of contaminants detected in the environmental media and environmental conditions at OU 2. COPC selection considered all available validated exposed surface soil data; data from excavated and covered surface soil were not evaluated. For surface water in ponds, data from RI Phase II samples were used; for surface water in canals, surface water monitoring results from January 2007 through April 2009 were used. Sediment data from RI Phase III sampling were used for locations in canals that were dredged following Phase II sample collection. Phase II samples from ponds were also included in the data set from which COPCs were identified. For groundwater, March 2008 through March 2009 validated data from the ongoing monitoring program were used, along with results of samples collected June 2008 through April 2009 from wells installed during the biobarrier injection pilot study.

Calcium, magnesium, potassium, and sodium are considered to be essential human nutrients and were not considered in the COPC selection process using either methodology.

FDEP COPC Selection Methodology

Using FDEP methodology, the first step in identifying COPCs for each medium was to determine the minimum CTL for each COI. Adjusted CTLs for surface soil and sediment were developed by dividing all industrial SCTLs by 10 to account for the presence of multiple COIs affecting the same organ or system. The minimum CTL for surface soil is the lowest of the adjusted industrial SCTL, SCTL for leaching to groundwater, and SCTL for leaching to freshwater surface water. The minimum CTL for sediment is the lower of the adjusted industrial SCTL or the SCTL for leaching to freshwater surface water (FDEP, 2005).

For surface water, adjusted CTLs were developed only for those COIs with CTLs based on risk to human health, to account for the presence of multiple COIs affecting the same organ or system. Adjusted FSW CTLs were not developed for those COIs with FSW CTLs based on anything other than human health. The minimum CTL for surface water is the adjusted CTL, if one exists, or the CTL.

For groundwater, adjusted CTLs were developed for those COI with CTLs based on risk to human health to account for the presence of multiple COIs affecting the same organ or system. The minimum CTL for groundwater is the adjusted CTL or the FSW CTL.

For each medium, the maximum concentration of each COI was then compared to minimum CTL for that COI. If the maximum concentration of that COI exceeded the minimum CTL, the contaminant was selected as a COPC. Next, the list of COPCs was evaluated to eliminate common laboratory contaminants and results from samples of poor quality. Those COPCs with a low FOD (less than 5 percent) or low risk (e.g., marginal exceedances of the minimum CTL) were also eliminated, as were COPCs with maximum concentrations less than the NTC BGSVs (ABB Environmental Services, Inc., 1995). BGSVs are available for surface soil and groundwater only.

EPA COPC Selection Methodology

Using the EPA methodology, the first step in identifying the COPCs was to compare the maximum concentration of each COI to its 2009 EPA RSL. Sediment and surface water concentrations were compared to ten times the EPA RSL for anticipated reduced exposure. Non-carcinogen EPA RSLs were then divided by ten to account for potential cumulative effects on the same target organ/system. If the maximum concentration of a COI exceeded the adjusted EPA RSL, then that contaminant was considered to be a COPC.

The list of COPCs was then evaluated to eliminate common laboratory contaminants and results from samples of poor quality. Any COPC with a low FOD or low risk (e.g., marginal exceedances of the minimum RSL) was also eliminated, as was any surface soil or groundwater COPC with a maximum concentration less than the NTC BGSV. Under certain conditions, a COPC with a maximum concentration within the background range was also eliminated.

2.3.2.3 Selection of Contaminants of Concern – FDEP Methodology

To represent overall contaminant concentration levels and exposure, COCs were developed from the list of FDEP COPCs. For each FDEP COPC, a PRG was determined as the minimum CTL or the NTC BGSV, whichever was greater.

Maximum chemical concentrations of COPCs were compared to the PRGs to select COCs for all media, with the exception of surface soil. For surface soil only, an exposure point concentration (EPC) was

calculated for each FDEP COPC for comparison to the PRG. The EPC for each surface soil COPC was calculated by statistically estimating the 95-Percent Upper Confidence Limit (95UCL) on the mean, using the recommendations of the Florida UCL calculator (FL-UCL). UCL calculations are presented in Appendix B. Any surface soil COPC with an EPC exceeding its PRG was further evaluated to determine if it should be selected as a COC.

The presence of multiple carcinogens or non-carcinogens that affect the same target organ/system were considered to ensure that the total ILCR of 1×10^{-6} (for carcinogens) or HI of 1.0 (for non-carcinogens) was not exceeded. First, the ratio of the maximum detected concentration to the direct contact CTL was calculated for each COPC to determine if the risk goal (ILCR or HI) was exceeded; if so then the CTLs for those carcinogens or non-carcinogens were adjusted. The adjustment factor (i.e., divisor) was equal to the number of contaminants affecting the same target organ/system. The final step in selecting COCs was to compare the maximum concentration (or EPC for surface soil) of each COPC to the PRG. In general, if the maximum concentration (or EPC for surface soil) was greater than the PRG, the COPC was selected as a COC. Exceptions are noted in the COC tables and below.

2.3.2.4 Determination of Site Risk – EPA Methodology

To represent overall contaminant concentration levels and exposure, COPCs determined using the EPA methodology were also further evaluated by comparing maximum COPC concentrations to the RSLs, or statistically calculating an EPC, where appropriate for surface soil only, using FL-UCL. A risk ratio was then calculated to estimate the ILCR and HQ. A carcinogenic risk ratio was calculated by dividing the maximum or EPC concentrations by the EPA RSL and then multiplying by 1×10^{-6}. An HQ was calculated by dividing the maximum or EPC concentrations by the EPA RSL and multiplying by 1.0. Risk-ratio estimates were compared to the EPA target cancer risk range of 1×10^{-4} to 1×10^{-6}. Generally, adverse non-carcinogenic health effects are not anticipated if an HQ or HI, developed on a target organ/effect-specific basis, does not exceed 1.0.

2.3.3 <u>Updated Risk Evaluation for Surface Soil</u>

The updated risk evaluation for surface soil is based on all validated exposed surface soil data from the RI. Surface soil data from sample locations which have been excavated or covered were not included in the evaluation.

2.3.3.1 Identification of Surface Soil COPCs

Table 2-1 presents the initial screening process and the COPCs determined using both methodologies. Details of the determination of surface soil COPCs are provided below.

FDEP Methodology

The COPC screening process using FDEP methodology identified 12 contaminants in surface soil with maximum detected concentrations exceeding the minimum SCTLs: acetone, BaPEqs, fluoranthene, pyrene, 4,4'-DDE, alpha-chlordane, dieldrin, arsenic, chromium, mercury, selenium, and silver. Three of these contaminants were not retained to the COC evaluation; alpha-chlordane and dieldrin were detected in less than 5 percent of the collected samples, and the maximum detected concentration of chromium is below the BGSV. Nine surface soil COIs were selected as FDEP COPCs: acetone, BaPEqs, fluoranthene, pyrene, 4,4'-DDE, arsenic, mercury, selenium, and silver.

BaPEqs and arsenic concentrations exceeded adjusted industrial direct contact SCTLs; fluoranthene, pyrene, 4,4'-DDE, mercury, selenium, and silver concentrations exceeded SCTLs for leaching to surface water; and acetone exceeded the SCTLs for leaching to groundwater and surface water.

EPA Methodology

COPC selection screening values for evaluations using EPA methodology are RSLs for carcinogenic contaminants and one-tenth of the EPA RSLs for non-carcinogenic contaminants. The EPA COPC screening process identified four COIs in surface soil with maximum detected concentrations exceeding at least one corresponding EPA RSL. Calculated BaPEq concentrations were compared to RSLs for benzo(a)pyrene. The maximum detected concentrations of BaPEqs, dibenzo(a,h)anthracene, and arsenic exceeded EPA RSLs for residential and industrial exposure to soil; the maximum detected concentrations of lead-210 exceeded the EPA PRG for residential exposure to soil. For both the residential and industrial scenarios, dibenzo(a,h)anthracene was eliminated based on low FOD.

Surface soil COIs retained as EPA COPCs for residential exposure include BaPEqs, arsenic, and lead-210.

Surface soil COIs retained as EPA COPCs for industrial exposure include BaPEqs and arsenic.

2.3.3.2 Selection of Surface Soil COCs – FDEP Methodology

Table 2-2 presents the FDEP COPCs, FODs, maximum concentrations, EPCs, SCTLs, BGSVs, cumulative cancer or target organs/system analysis, PRGs, and COCs for surface soil. The surface soil PRGs were selected from the minimum of the applicable SCTLs (i.e., the published or adjusted SCTL for direct contact, the SCTL for leaching to groundwater, or the SCTL for leaching to FSW), or the BGSV, whichever was greater. As shown in Table 2-2, the cumulative ratios for carcinogens exceeded one, implying unacceptable risk levels per FDEP guidance. Therefore, the direct contact SCTLs were adjusted by dividing the published SCTLs by the number of carcinogenic COPCs for the carcinogenic COPCs. The direct contact SCTLs for non-carcinogens were not adjusted.

Concentrations of acetone, BaPEqs, mercury, and silver exceeded their minimum SCTLs. The maximum detected concentration of acetone exceeded the SCTLs for leaching to groundwater and for leaching to FSW but did not exceed the industrial or adjusted industrial direct contact SCTL. Acetone results were rejected during validation for 77 of 133 surface soil samples and 46 of 47 groundwater samples collected during the RI. Although there is no direct evidence to dispute the occurrence of acetone in surface soil at the site, its presence in surface soil with no current identifiable source release mechanism is suspect because of its high volatility, especially when considering the warm climate at NTC Orlando. Furthermore, acetone is a known laboratory contaminant. Collectively, acetone results for surface soil are considered spurious, and there is no evidence that it has leached to surface water or groundwater; therefore, acetone was not retained as a surface soil COC in this Revised FS.

The maximum concentration [1.7 milligrams per kilogram (mg/kg)] and EPC (0.28 mg/kg) for BaPEq marginally exceeded the adjusted industrial SCTL of 0.23 mg/kg. Carcinogenic PAHs were detected in 13 of 99 samples, and BaPEq concentrations in 12 samples exceeded the adjusted SCTL. However, the BaPEq EPC does not exceed the SCTL for industrial direct contact and the EPC concentrations for the individual PAHs (i.e., fluoranthene and pyrene) do not exceed their respective SCTLs for industrial direct contact or leaching to groundwater or FSW. In addition, BaPEq concentrations in OU 2 surface soil are within the range of background anthropogenic PAH concentrations (0.002 to 1.3 mg/kg) reported in literature (Agency for Toxic Substances and Disease Registry, 1995). Based on these uncertainties, BaPEq and PAHs were not retained as surface soil COCs in this Revised FS.

The maximum concentration and EPC for mercury (0.22 and 0.1 mg/kg, respectively) exceeded the leaching to surface water SCTL (0.01 mg/kg). Mercury has not been a surface water analyte at OU 2 since the RI, when the maximum detected mercury concentration in canal surface water was 0.018 micrograms per liter (µg/L). Mercury was detected at concentrations exceeding the FSW CTL (0.012 µg/L) in two surface water samples collected from ponds during the RI. However, each of these surface water exceedances is at least 400 feet from the nearest surface soil exceedance. Based on this distance, the magnitude of the concentrations detected in pond surface water (0.12 and 0.15 µg/L) compared to the FSW CTL, the relatively low frequency of detection (7 of 99 samples), and the negligible likelihood that current or future human receptors at OU 2 will use surface water for domestic purposes, mercury was not retained as a surface soil COC in this Revised FS.

The maximum concentration and EPC for silver (2.4 and 0.4 mg/kg, respectively) exceeded the leaching to surface water SCTL (0.01 mg/kg) but did not exceed the SCTLs for direct contact or leaching to groundwater. Silver was detected in 11 of 99 surface soil samples. Of these 11 samples, one (S102) is located near surface water. The silver concentration in sample S102 (0.81 mg/kg) exceeds the leaching to surface water SCTL of 0.01 mg/kg. During the RI, silver was detected only once in groundwater, at MW05, more than 800 feet away from S102, and was not detected in surface water in ponds or canals.

Silver has not been a surface water analyte at OU 2 since the RI. Based on this information, silver was not retained as a surface soil COC in this Revised FS.

In summary, no COPCs were selected as industrial COCs in surface soil for this Revised FS. This finding is consistent with the soil IRAs that have been completed at OU 2.

Concentrations of acetone, BaPEqs, arsenic, mercury, and silver exceeded minimum SCTLs. Concentrations of acetone, mercury, and silver exceeded the same screening criteria as for the industrial COC selection process and were not retained as residential COCs for the same rationale as detailed in the section above. The EPC for BaPEqs exceeded the residential SCTL by a larger margin than it exceeded its industrial SCTL; however, the rationale for BaPEq not being retained as a residential COC in surface soil is the same as detailed above for industrial COCs in surface soil. Arsenic is the only COPC with concentrations exceeding the residential SCTL but not the industrial SCTL. The arsenic EPC (1.84 mg/kg) is less than the NTC background value for arsenic (1.9 mg/kg); therefore, arsenic was not retained as a surface soil COC in this Revised FS.

In summary, no COPCs were retained as residential COCs in surface soil for this Revised FS.

2.3.3.3 Risk-Ratio Evaluation for Surface Soil – EPA Methodology

As indicated in Table 2-1, three COIs were identified as EPA COPCs for hypothetical residents, and two COIs were identified as EPA COPCs in surface soil for industrial workers. Tables 2-3 and 2-4 present the surface soil risk estimates for hypothetical residents and industrial workers, respectively. For the residential scenario, ILCRs were evaluated for arsenic, BaPEqs, and lead-210. The individual and total ILCR estimates are within the target EPA range of 1×10^{-4} to 1×10^{-6}. The HQ for arsenic, the only COPC contributing to non-cancer hazard, is less than 1.0, as is the residential exposure HI. For the industrial scenario, ILCRs were evaluated for arsenic and BaPEqs. The ILCR for each contaminant is within the EPA target range, as is the total ILCR. The HQ for arsenic, the only COPC contributing to non-cancer hazard, is less than 1.0, as is the industrial exposure HI.

In summary, for both residential and industrial scenarios, individual and total carcinogenic risk estimates are within the EPA target cancer risk range of 1×10^{-4} to 1×10^{-6}, and individual HQs, total HIs, and HIs based on target organs are all less than 1.0.

2.3.4 <u>Updated Risk Evaluation for Surface Water</u>

The updated risk evaluation for surface water is based on all validated pond surface water data from the RI and all validated canal surface water data from January 2007 through March 2009. Table 2-5 lists the locations of surface water samples used in this risk evaluation.

2.3.4.1 Identification of Surface Water COPCs

Tables 2-6 and 2-7 present the initial screening process; list all chemicals detected in surface waters, their frequency of detection and maximum concentrations, and the CTLs for the protection of freshwater surface water, and identify the COPCs for surface water in canals and ponds, respectively. The processes used in determining the COPCs are described below.

FDEP Methodology

CTLs for protection of FSW were selected as applicable standards for the evaluation of surface water at OU 2. Only FSW CTLs based on human health were divided by 10 to account for cumulative carcinogenic or noncarcinogenic health effects. Any COI with a maximum concentration less than the minimum CTL was not selected as an FDEP COPC. The COPC screening process identified three COIs in canal surface waters and eight COIs in pond surface waters with maximum concentrations exceeding the minimum CTLs (Tables 2-6 and 2-7, respectively). Vinyl chloride, 1,4-DCB, and iron were detected at concentrations exceeding adjusted FSW CTLs for surface water in canals. Vinyl chloride and 1,4-DCB were not retained as COPCs due to low FOD.

In summary, iron was retained as a canal surface water COPC. Aluminum, chromium, copper, iron, lead, mercury, zinc, and gross alpha were retained as FDEP COPCs for pond surface water due to exceedances of FSW CTLs.

EPA Methodology

EPA screening values were EPA tap water RSLs for non-carcinogenic contaminants and 10 times EPA tap water RSLs for carcinogenic contaminants. Any COI with a maximum concentration less than the EPA screening value was eliminated from further evaluation as a COPC. The screening process identified three COIs in canal surface water and three COIs in pond surface water with maximum concentrations exceeding EPA screening values (Tables 2-6 and 2-7, respectively).

Vinyl chloride, TCE, and iron were detected in canal surface water at concentrations greater than screening values. Vinyl chloride was not retained as a COPC due to low FOD.

TCE and iron were retained as EPA COPCs for canal surface waters.

Arsenic, lead, and gross alpha were retained as EPA COPCs for pond surface waters due to exceedances of EPA screening values.

2.3.4.2 Selection of Surface Water COCs – FDEP Methodology

Tables 2-8 and 2-9 present the FDEP COPCs, FODs, maximum concentrations, and PRGs for surface water in canals and ponds, respectively. Because FSW CTLs for the identified surface water COPCs are based on human consumption of fish or protection of fish and wildlife habitat and do not represent direct contact of human receptors with surface water, the FSW CTLs were not adjusted for the presence of multiple carcinogens or non-carcinogens. Therefore, the surface water PRG for each COPC is the FSW CTL.

As indicated in Tables 2-8 and 2-9, the maximum concentration of iron in canal surface water exceeded the PRG, and maximum concentrations of aluminum, chromium, copper, iron, lead, mercury, zinc, and gross alpha in pond surface water exceeded PRGs. Surface water in canals originates predominantly as base-flow groundwater discharge; thus, the presence of iron in canal surface water is directly related to groundwater quality and is not related to any other known processes occurring in the surface water bodies (e.g., leaching from sediment, overland runoff). Protection of surface water is dependent upon identifying iron in groundwater discharge areas to ensure surface water is protected. It is also noted, as shown by the data provided in Appendix A for surface water, that exceedances of iron at any given surface water location are highly variable. And, as noted in the Final FS (Tetra Tech, 2003a), background concentrations of iron in groundwater that are not related to the landfill also exceed the FSW CTL of 1000 µg/L (as high as 2500 µg/L at an upgradient well). Because concentrations of iron in surface water are highly variable (above and below the CTL), because background concentrations of iron in groundwater above the FSW CTL are likely discharging to surface water, and because iron in groundwater has been selected as a COC (see Sections 2.3.6 and 2.3.7). , iron is not selected as a COC for surface water. Pond surface water occurs in small, shallow features that are not likely to support a fish population that could be used as human food, nor do they represent a viable domestic water source, upon which the FSW CTLs are based. Imminent risks to ecological receptors from surface waters at OU 2 were not identified in the Ecological Risk Assessment (ERA) presented in the RI Report (Tetra Tech, 2001). Therefore, none of the COPCs identified in pond surface water were selected as a COCs.

In summary, no COPCs were selected as COCs for canal or pond surface water in this Revised FS. Protection of canal surface water is dependent upon identifying impacts to surface water from discharging groundwater.

2.3.4.3 Risk-Ratio Evaluation for Surface Water – EPA Methodology

As indicated in Tables 2-6 and 2-7, two COIs were identified as EPA COPCs for surface water in canals, and three COIs were identified as EPA COPCs for surface water in ponds. Tables 2-10 and 2-11 present the risk ratios for surface water samples in canals and ponds, respectively. For surface water in canals,

the individual ILCR estimate for TCE, the only carcinogenic COPC, is 1.8 x 10^{-7}, less than the target EPA range of 1 x 10^{-4} to 1 x 10^{-6}. The HI for iron, the only non-carcinogenic COPC, is 0.05.

For surface water samples in ponds, the ILCR calculated for arsenic is 1.5 x 10^{-5}, within the target EPA range. No ILCR was calculated for lead or gross alpha because neither has an EPA tap water RSL. The individual HQs, HI, and target organ HIs are all less than 1.0 for surface water in ponds.

2.3.5 Updated Risk Evaluation for Sediment

The updated risk evaluation for sediment is based on all validated sediment data from the RI. Table 2-5 lists the locations of sediment samples used in this risk evaluation.

2.3.5.1 Identification of Sediment COPCs

Tables 2-12 and 2-13 present the initial screening process, list all contaminants detected in sediment, along with their FODs and maximum concentrations, FDEP SCTLs [for industrial land use, for soil leaching to groundwater (pond sediment only), for soil leaching to FSW]. NTC BGSVs (for metals only), EPA industrial and residential RSLs, and COPCs determined using both methodologies. The processes used in determining the COPCs are described below.

FDEP Methodology

Soil SCTLs for direct contact in an industrial setting were used in the analysis of COPCs because there are no CTLs for sediment. The SCTLs for leaching to FSW were included in the analysis because the sediments may release COPCs into surface water bodies (i.e., drainage canals and ponds). Finally, soil SCTLs for leaching to groundwater were included in the analysis of pond sediments because sediment in ponds could release COPCs to shallow groundwater. The leaching to groundwater pathway was not included for canal sediments because the canals are predominantly groundwater discharge areas. Any COI with a maximum concentration less than the greater of the minimum SCTL and the BGSV was not selected as a COPC.

The COPC screening process identified three COIs in canal sediments and three COIs in pond sediments with maximum concentrations exceeding minimum SCTLs (Tables 2-12 and 2-13, respectively). Chromium, mercury, and gamma-chlordane were selected as COPCs for canal sediment because maximum concentrations exceeded corresponding SCTLs for leaching to FSW.

Chromium, mercury, and selenium were selected as FDEP COPCs for pond sediment because maximum concentrations exceeded corresponding SCTLs for leaching to FSW.

EPA Methodology

EPA screening values were EPA industrial and residential RSLs for non-carcinogenic contaminants and 10 times EPA industrial and residential RSLs for carcinogenic contaminants. The soil RSLs were multiplied by 10 to account for anticipated reduced exposure to sediment compared to soil, then non-carcinogenic soil RSLs were divided by 10 to account for the presence of multiple COIs affecting the same organ or system. None of the COPC concentrations in canal sediment samples exceeded adjusted soil RSLs for residential or industrial exposure.

Arsenic and potassium-40 were selected as EPA residential COPCs for pond sediment. Potassium-40 was also selected as an EPA industrial COPC for pond sediment.

2.3.5.2 Selection of Sediment COCs – FDEP Methodology

Tables 2-14 and 2-15 present FDEP COPCs, FODs, maximum concentrations, adjusted direct contact SCTLs, cumulative cancer or target organ/system analyses, and PRGs for sediment in canals and ponds, respectively. Adjusted SCTLs were developed by dividing the published direct contact SCTLs by the number of carcinogenic or non-carcinogenic COPCs that affect the same target organ/system. Sediment PRGs were selected from the minimum of the applicable SCTLs (i.e., published or adjusted SCTLs for direct contact and the SCTL for leaching to FSW) or the BGSV (metals only), whichever was greater.

The FDEP COC selection process for sediment in canals, presented in Table 2-14, identified concentrations of gamma-chlordane and mercury as exceeding PRGs. The maximum concentration of gamma-chlordane marginally exceeded the leaching-to-surface water SCTL but did not exceed the direct contact SCTL. Surface water samples at OU 2 have not been analyzed for gamma-chlordane or mercury since the RI. The fact that gamma-chlordane was not detected in any RI surface water samples indicates that it was not leaching to surface water. Therefore, gamma-chlordane was not retained as a FDEP COC for sediment in canals in this Revised FS.

Mercury concentrations marginally exceeded the BGSV and leaching to FSW CTL, but did not exceed the adjusted SCTL. During the RI, mercury was detected in canal surface water in one Phase I sample and four Phase II samples, with concentrations ranging from 0.06 to 0.18 µg/L. All five of these locations were resampled during Phase III, with concentrations ranging from 0.00092 to 0.00827 µg/L, less than the mercury FSW CTL of 0.012 µg/L. Therefore, mercury was not retained as a COC for sediment in canals for this Revised FS.

Chromium concentrations marginally exceeded the BGSV and leaching to FSW CTL, but did not exceed the adjusted SCTL. During the RI, chromium was detected in canal surface water in 7 of 11 canal samples, but exceeded the PRG in only 1 sample. The exceedance concentration of 8.6 µg/L at location OU2SW014 located in the canal along the far eastern edge of OU2 suggests low risk potential (i.e.,

8.6 µg/L versus PRG of 7.7 µg/L) and the upstream and downstream sample locations did not show an exceedance for chromium. Also, chromium was not selected as a COC for groundwater in the northern landfill area that is proximal to the OU2SW014 location. Therefore, chromium was not retained as a COC for sediment in canals for this Revised FS.

The FDEP COC selection process identified concentrations of chromium, mercury, and selenium in pond sediment samples as exceeding PRGs, as presented in Table 2-15. Chromium, mercury, and selenium concentrations exceeded their respective BGSVs and leaching SCTLs, but not direct contact SCTLs. Selenium was not detected in surface water samples collected from ponds, and therefore was not retained as an FDEP COC. Chromium and mercury were detected at concentrations marginally exceeding the corresponding adjusted FSW CTLs. The ERA presented in the RI Report (Tetra Tech, 2001) concluded that there were no imminent risks to fish or wildlife and that remedial measures were not recommended. Because the detected concentrations of chromium and mercury from sediment in ponds samples did not exceed the adjusted SCTLs and because they were determined not to be FDEP COCs for surface water in ponds, chromium and mercury were not selected as FDEP COCs for pond sediment.

In summary, no FDEP COCs for sediment were identified in this Revised FS.

2.3.5.3 Risk-Ratio Evaluation for Sediment – EPA Methodology

No EPA COPCs were identified for sediment in canals; therefore, risk estimates were not calculated for receptors exposed to sediment in canals. Tables 2-16 and 2-17 present the risk ratio estimates for residential and industrial scenarios, respectively, for sediment in ponds. For both scenarios, individual and total ILCR estimates are within the target EPA range of 1×10^{-4} to 1×10^{-6} and HQs and HIs are less than 1.0.

2.3.6 Updated Risk Evaluation for Northern Area Groundwater

For the Northern Area, data from samples collected at OLD-OU2-2A/B, -3A/B, -29A/B, and -30A/B from March 2008 through April 2009 were evaluated with respect to 2005 FDEP GCTLs and 2009 EPA tap water RSLs. Table 2-18 presents the initial screening process and the COPCs determined using both methodologies. The processes used in determining the COPCs are described below.

2.3.6.1 Identification of Northern Area Groundwater COPCs

Table 2-18 presents the initial screening process for groundwater in the Northern Area and the COPCs determined using both FDEP and EPA methodologies. The processes used in determining the COPCs are described below.

FDEP Methodology

Because groundwater discharges to drainage canals and ponds within and along the margins of OU 2, groundwater discharging to FSW was considered in the FDEP COPC evaluation. The data were screened against the larger of the minimum applicable CTL (GCTL or FSW CTL) and the BGSV (metals only). The COPC screening process identified five COIs in groundwater with maximum detected concentrations exceeding minimum CTLs and BGSVs. Vinyl chloride was not retained as an FDEP COPC due to low FOD. Benzene, TCE, iron, and manganese were retained as FDEP COPCs due to exceedances of corresponding GCTLs.

EPA Methodology

Maximum detected concentrations of six COIs in groundwater exceeded EPA tap water RSLs. Any COI with a maximum concentration that did not exceed the greater of the EPA tap water RSL and BGSV was not retained as an EPA COPC. Vinyl chloride was not retained as an EPA COPC due to low FOD. Benzene, 1,4-DCB, TCE, iron, and manganese were retained as EPA COPCs.

2.3.6.2 Selection of Northern Area Groundwater COCs – FDEP Methodology

Table 2-19 presents the FDEP COPCs, FODs, maximum concentrations, and PRGs for groundwater in the Northern Area. The groundwater PRGs were selected as the greater of the minimum applicable CTL (GCTL or FSW CTL) and the BGSV. As shown in Table 2-19, the GCTLs for all COPCs were derived from primary or secondary standards; therefore, no cumulative cancer or target organ/system analysis was required, and no adjustments to the GCTLs were made.

The maximum concentrations of the four FDEP COPCs, benzene, TCE, iron, and manganese exceeded their respective PRGs. It is noted that TCE was detected in only 2 of 24 groundwater samples collected in the Northern Area, once in shallow well OLD-OU2-03A on October 7, 2008 (0.32 µg/L), and once in intermediate well OLD-OU2-03B on October 6, 2008 (4.4 µg/L). Only the sample from OLD-OU2-03B exceeded the TCE GCTL of 3 µg/L. Of the four benzene detections, only one, 9.5 µg/L at intermediate well OLD-OU2-03B, exceeded the PRG of 1 µg/L.

In summary, benzene, TCE, iron, and manganese were selected as a COCs for groundwater in the Northern Area. The location, sample date, and concentration for each exceedance are shown in Table 2-20.

2.3.6.3 Risk Ratio Evaluation for Northern Area Groundwater – EPA Methodology

Table 2-21 contains the risk and hazard ratios for the Northern Area EPA groundwater COPCs. The ILCRs for 1,4-DCB, benzene, and TCE, the only carcinogenic EPA COPCs, are within the target EPA

benchmark range of 1 x 10^{-4} to 1 x 10^{-6}, as is the total ILCR. The HQs for 1,4-DCB, benzene, and TCE are less than 1.0, the HQ for iron is 2.79, and the HI for groundwater in the Northern Area is 4.5.

2.3.7 Updated Risk Evaluation for Southern Area Groundwater

For the Southern Area, data from groundwater samples collected from March 2008 through April 2009 at OLD-OU2-12A/B, -18A/B, -21A/B -27A/B, -28B, -31A/B, -32A/B, -33A/B; -37B, and -DP01A/B, and data from samples collected at OLD-OU2-39B, -40B, -42B, -43B, -45B, -49A/B, -50A/B, -51A/B, and -52A/B, installed during the Biobarrier Injection Pilot Study (Section 1.4.4.2) were compared to 2005 FDEP GCTLs and 2009 EPA tap water RSLs.

2.3.7.1 Identification of Southern Area Groundwater COPCs

Table 2-22 presents the initial screening process for groundwater in the Southern Area and the COPCs determined using both FDEP and EPA methodologies. The processes used in determining the COPCs are described below.

FDEP Methodology

Because groundwater discharges to drainage canals and ponds located within and along the margins of OU 2, groundwater discharging to FSW was considered in the COPC evaluation. Any COI with a maximum concentration which did not exceed the larger of the minimum applicable CTL (GCTL or FSW CTL) and the BGSV was not retained as an FDEP COPC. The COPC screening process identified 17 COIs in groundwater with maximum detected concentrations exceeding minimum CTLs. Chlorodibromomethane and chloromethane were not retained as FDEP COPCs due to low FOD. Fifteen COIs retained as FDEP COPCs due to exceedances of minimum CTLs include 1,2,4-trimethylbenzene, 1,4-DCB, benzene, chlorobenzene, chloroform, cis-1,2-DCE, isopropylbenzene, methylene chloride, naphthalene, PCE, TCE, vinyl chloride, TPHs, iron, and manganese.

EPA Methodology

As presented on Table 2-22, the maximum detected concentration of 17 COIs in groundwater exceeded the corresponding EPA tap water RSLs. Carbon tetrachloride, chlorodibromomethane, 1,1,2-trichlorethane, and 1,2,4-trichlorbenzene, were not retained as EPA COPCs due to low FOD. The 11 COIs retained as EPA COPCs due to exceedances of EPA RSLs include 1,4-DCB, benzene, chlorobenzene, chloroform, cis1,2-DCE, ethylbenzene, methylene chloride, naphthalene, PCE, TCE, vinyl chloride, iron, and manganese.

2.3.7.2 Selection of Southern Area Groundwater COCs – FDEP Methodology

Table 2-23 presents the FDEP COPCs, FODs, maximum concentrations, and PRGs for groundwater in the Southern Area. The groundwater PRG for each COPC was selected as the greater of the minimum applicable CTL (GCTL or FSW CTL) and the BGSV. As shown in Table 2-23, all adjustment factors derived from the cumulative cancer or target organ/system analysis were one.

The maximum concentrations of 1,4-DCB, benzene, chlorobenzene, cis-1,2-DCE, isopropyl benzene, methylene chloride, PCE, TCE, vinyl chloride, iron, and manganese exceeded their respective PRGs. 1,4-DCB was detected in 8 of 60 groundwater samples collected in the Southern Area; five of those samples from three wells had 1,4-DCB concentrations equaling or exceeding the PRG of 3 µg/L. The maximum 1,4-DCB concentration of 11.7 µg/L was detected in intermediate well OLD-OU2-27B on March 19, 2008. The PRG for 1,4-DCB is based on the FSW CTL. None of the detected 1,4-DCB concentrations exceeded the GCTL of 75 µg/L. 1,4-DCB was detected in 3 of 86 surface water samples collected from canals (Table 2-6), at concentrations less than the FSW CTL (3 µg/L). Therefore, 1,4-DCB was not selected as a Southern Area groundwater COC .

Isopropylbenzene was detected in 5 of 60 Southern Area groundwater samples; only the concentration in one sample (2.5 µg/L at OLD-OU2-53B on April 23, 2009) exceeded the PRG of 0.8 µg/L. Because this one exceedance was marginal and J-qualified (estimated), isopropylbenzene was not selected as a Southern Area groundwater COC.

Methylene chloride was detected in 25 of 76 groundwater samples collected in the Southern Area; 15 samples in seven intermediate wells had methylene chloride concentrations that exceeded the PRG of 5 µg/L. However, all 15 exceedances were either I-qualified (between the laboratory detection limit and the laboratory practical quantitation limit) or JB-qualified (an estimated concentration between the laboratory method detection limit and the reporting limit). Because methylene chloride is a known laboratory contaminant, these exceedances are suspect. Therefore, methylene chloride was not selected as an FDEP COC in the Southern Area.

Eight COPCs were selected as FDEP COCs for groundwater in the Southern Area due to exceedances of PRGs: benzene, chlorobenzene, cis-1,2-DCE, PCE, TCE, vinyl chloride, iron, and manganese. The location, sample date, and concentration for each exceedance are shown in Table 2-24.

2.3.7.3 Risk-Ratio Evaluation for Southern Area Groundwater – EPA Methodology

Table 2-25 contains the risk and hazard ratios for Southern Area groundwater EPA COPCs. ILCRs for 1,4-DCB, benzene, chloroform, ethylbenzene, methylene chloride, naphthalene, and PCE are all within the EPA target range of 1×10^{-4} to 1×10^{-6}. ILCRs for TCE and vinyl chloride and the total ILCR exceed 1×10^{-4}. The HQs for 1,4-DCB, benzene, chlorobenzene, chloroform, cis-1,2-DCE, ethyl benzene, iron,

manganese, methylene chloride, PCE, and vinyl chloride are 1.0 or less. The HQ for naphthalene (1.7) and the HI for groundwater (6.1) exceed 1.0.

2.3.8 Updated Risk Evaluation Summary

Groundwater is the only medium for which FDEP COCs have been identified at OU 2. The only COCs for Northern Area groundwater are iron and manganese. The COCs for Southern Area groundwater are benzene, chlorobenzene, cis-1,2-DCE, PCE, TCE, vinyl chloride, iron, and manganese. Total risks to industrial workers, recreators, and trespassers, as estimated with the EPA risk-ratio method, are acceptable in both the Northern and Southern Areas. Although Southern Area groundwater presents unacceptable risk to hypothetical future residents, residential use of any groundwater at OU 2 is prohibited by LUCs.

Following EPA risk assessment methodology, cumulative cancer risk (total ILCR) and non-cancer HIs are presented below for each medium:

Medium	Receptor	Total ILCR	HI
Surface Soil	Residential	3.04E-05	0.08
	Industrial	2.48E-06	0.01
Canal Surface Water	Residential	2.6E-06	0.63
Pond Surface Water	Residential	1.6E-05	0.3
Canal Sediment	Residential	--	--
	Industrial	--	--
Pond Sediment	Residential	2.6E-06	0.02
	Industrial	1.2E-06	--
Northern Area Groundwater	Residential	2.8E-05	4.5
Southern Area Groundwater	Residential	8.0E-03	6.1
Northern Area Resident Total	Residential	8.0E-05	5.5
Southern Area Resident Total	Residential	8.1E-03	7.1
Industrial Worker Total	Industrial	3.69E-06	0.01

The absence of a calculated ILCR or HI for a receptor indicates that no EPA COPCs were identified.

Due to the presence of a landfill at OU 2, inherent risks are associated with buried waste and source area groundwater. Contamination in these two media is assumed. Mitigation of this risk is required by the presumptive remedy via exposure prevention.

2.4 ECOLOGICAL RISK ASSESSMENT

An ERA was performed during the RI to characterize potential risks from OU 2-related contaminants to ecological receptors that inhabit OU 2 and nearby areas. The ERA was considered to be a screening-level assessment because it included only comparisons of contaminant concentrations to conservative screening values and an evaluation of historical ecological data. The results of the ERA are summarized below.

Some food-chain risks are present at OU 2 from inorganics, PAHs, and pesticides. Most of these risks are driven by localized elevated concentrations of contaminants. Generally, localized elevated detections of metals in surface soil do not appear to pose food-chain risks at the population or community level. Therefore, the assessment endpoints for terrestrial receptors do not appear to be compromised, and further risk management was not deemed warranted.

Concentrations of several inorganics in surface water were elevated throughout the length of the canals along the eastern border of OU 2. Most of the elevated detections in Phase I and Phase II surface water samples were lower in Phase III samples, with the exception of mercury. The elevated detections of inorganics in groundwater suggest that the discharge to the canals of surficial groundwater from beneath the site is the most likely source. Concentrations of inorganics in sediment did not appear to be elevated in any of the ponds and canals on and downgradient of OU 2, including samples collected in Lake Gillooly and immediately upgradient of the lake. It is possible that concentrations of inorganics are not elevated in canal sediment due to periodic dredging of those sediments.

Although elevated concentrations of inorganics, mainly mercury, were present in canal surface water during all three phases of RI sampling, the canal contains limited habitat in both quantity and quality. The canal empties into Lake Gillooly south of OU 2. Sampling in the lake suggests that inorganics have not migrated to the lake to any appreciable degree. For these reasons, although potential risks may be associated with canal surface water, no remedial activity or additional ecological study was recommended.

3.0 REMEDIAL ACTION OBJECTIVES AND GENERAL RESPONSE ACTIONS

The objectives and goals for RAs at OU 2 provide the basis for selecting RAOs and identifying remedial technologies to address unacceptable risks identified at the site. In September 1993, EPA established source containment as the presumptive remedy for municipal landfill sites regulated under CERCLA. In December 1996, EPA permitted the application of this presumptive remedy to military landfills with municipal landfill waste characteristics. Use of the presumptive remedy eliminates the need for initial identification and screening of alternatives during the FS because the EPA has found that certain technologies are appropriately rejected on the basis of effectiveness, feasibility, or cost. Knowledge of historical landfill operations and data collected both during the RI and as part of ongoing monitoring support the use of the presumptive remedy for OU 2. One component of the presumptive remedy is source area groundwater control.

3.1 REMEDIAL ACTION OBJECTIVES

RAOs are medium-specific goals that define the objectives of conducting RAs to protect human health and the environment. RAOs are based on COCs, potential exposure routes and receptors, and acceptable ranges of contaminant concentrations (i.e., PRGs) for the site. Section 3.1.1 presents the RAOs developed for OU 2.

The development of PRGs takes into consideration applicable or relevant and appropriate requirements (ARARs) and to be considered criteria (TBCs). Section 3.1.2 identifies the ARARs and TBCs, Section 3.1.3 identifies the media of concern, and Section 3.1.4 identifies the COCs for OU 2 remediation.

3.1.1 Statement of Remedial Action Objectives

EPA guidance documents for the landfill presumptive remedy (EPA, 1993 and 1996) provide typical primary RAOs, including the following:

- Preventing direct contact with landfill contents
- Minimizing infiltration and resulting contaminant leaching to groundwater
- Controlling surface water run-off and erosion
- Collecting and treating contaminated groundwater and leachate to contain the contaminant plume and prevent further migration from the source area
- Controlling and treating landfill gas

Considering EPA guidance on the landfill presumptive remedy and evaluating information from previous investigations and COCs retained, the RAOs for OU 2 are as follows:

RAO 1: Prevent exposure to buried waste for all human receptors under current and future site uses.

RAO 2: Prevent contact with and ingestion of surficial aquifer groundwater with COC concentrations in excess of PRGs.

RAO 3: Prevent migration of groundwater with COC concentrations in excess of PRGs to potential off-site receptors.

3.1.2 Applicable or Relevant and Appropriate Requirements and To Be Considered Criteria

ARARs and guidance TBCs are the regulatory and non-regulatory environmental criteria that must be considered while planning and implementing RAs. ARARs are promulgated federal and state environmental and facility siting requirements that are determined to be legally applicable or relevant and appropriate to the hazardous substances, RAs, or other circumstances at a CERCLA site. The two categories of requirements are defined as follows:

- Applicable Requirements - Section 300.5 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) defines applicable requirements as "those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, RA, location, or other circumstance found at a CERCLA site."

- Relevant and Appropriate Requirements - Section 300.5 of the NCP defines relevant and appropriate requirements as "those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not 'applicable' to a hazardous substance, pollutant, contaminant, RA, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site."

NCP Section 300.430(E) states that on-site RAs at CERCLA sites must meet ARARs unless there are grounds for invoking a waiver. A waiver is required if ARARs cannot be achieved.

TBCs are non-promulgated criteria, advisories, and guidance issued by federal or state governments. Along with ARARs, TBCs may be used to develop the RA alternatives necessary to protect human health and the environment.

ARARs and TBCs are further divided into three categories: chemical-specific, location-specific, and action-specific. These categories are briefly discussed below.

3.1.2.1 Chemical-Specific ARARs and TBCs

Chemical-specific ARARs and TBCs are usually health- or risk-based numerical values or methodologies that, when applied to site-specific conditions, result in numerical values that establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment. In general, chemical-specific requirements are set for a single chemical or a closely related group of chemicals. These requirements generally do not consider the mixture of chemicals. Use of BaPEq to represent PAHs is an exception. Chemical-specific ARARs and TBCs for OU 2 are presented in Table 3-1.

3.1.2.2 Location-Specific ARARs and TBCs

Location-specific ARARs and TBCs are restrictions placed on the concentrations of hazardous substances or the conduct of activities solely because they are in specific areas. Location-specific ARARs and TBCs for OU 2 are presented in Table 3-2.

3.1.2.3 Action-Specific ARARs and TBCs

Action-specific ARARs and TBCs are usually technology- or activity-based requirements or limitations on actions taken with respect to managing hazardous substances, pollutants, or contaminants. These requirements generally focus on actions taken to remediate, handle, treat, transport, or dispose of hazardous substances, pollutants, or contaminants. These action-specific requirements determine how a selected alternative must be implemented. Action-specific ARARs and TBCs for OU 2 are presented in Table 3-3.

3.1.3 Media of Concern

COCs were not selected for surface soil, sediment, or surface water at OU 2. Buried waste, source area groundwater, and groundwater migrating off site are the media of concern at OU 2.

3.1.4 Contaminants of Concern for Remediation

Inherent risks for buried waste and source area groundwater are assumed due to the presence of the landfill. In addition, COCs were selected for groundwater which is migrating off site (i.e., toward the boundary canals) for both the northern and southern groundwater flow areas.

Six VOCs and two metals were selected as COCs for source area groundwater migrating from OU 2, including benzene, chlorobenzene, cis-1,2-DCE, PCE, TCE, vinyl chloride, iron, and manganese. PRGs for all six VOCs are the FDEP GCTLs. The PRG for iron is the BGSV:

COC	PRG (µg/L)
Benzene	1
Chlorobenzene	17
cis-1,2-DCE	70
PCE	3
TCE	3
Vinyl chloride	1
Iron	1227
Manganese	50

3.2 GENERAL RESPONSE ACTIONS

General Response Actions (GRAs) are broadly defined remedial approaches that may be used (by themselves or in combination with one or more others) to attain the RAOs.

- No action
- LUCs
- Containment
- Monitoring

3.3 AREAS AND VOLUMES OF CONTAMINATED MEDIA

Buried waste and source area groundwater are the two media of concern at OU 2.

3.3.1 Buried Waste

The area of the landfill, determined during the RI, is 114 acres. The estimated volume of buried waste at OU 2 is over 1 million yd^3 (C.C. Johnson & Associates, 1985).

3.3.2 Northern Area Groundwater

As determined in the RI, the surficial aquifer is approximately 25 feet thick. The upper half of this aquifer is considered the shallow zone, and the lower half is the intermediate zone. Data from groundwater samples collected in the Northern Area of OU 2 from March 2008 through April 2009 indicate that the current northern plume area is consistent with the historical plume at the site (Tetra Tech, 2003a). The

area containing the VOC plume (i.e., benzene and TCE) is currently observed only at well OLD-OU-03, but occurs in both the shallow and intermediate aquifer depths (well zones A and B). This well is located along the eastern margin of OU 2 (see Figure 1-9 for location). The plume area containing inorganics (iron and manganese) is currently observed at four well locations lying across the central portion of the former golf course (wells OLDOU02, -03, -29, and -30) and also occurs in both aquifer zones (see Figure 1-9 for locations).

Shallow Plume

The current shallow well data for VOCs is consistent with historical data, although TCE was not historically detected or identified as a COC in the shallow zone. Because a limited number of wells are currently sampled, the plume area is interpolated based on the area of the landfill that was historically assumed to be the source of the inorganics in groundwater. Therefore, the historical estimated plume area of 278,400 ft^2 (Tetra Tech, 2003a) is deemed representative of current plume conditions around well OLD-OU-03A. The thickness of shallow plume was considered to be 12.5 feet (one-half of the assumed 25-foot thickness of the surficial aquifer). Assuming an aquifer porosity of 0.3, the volume of the shallow VOC plume was calculated to be 7.8 million gallons.

The current shallow well data for inorganics is also consistent with historical data, although the historical data set that included more wells indicated two separate plume areas (i.e., area around wells OLD-OU-02A, -03A, -29A, and -30A and a separate area around well OLD-OU-06A). Therefore, the historical estimated plume areas of 521,600 ft^2 and 31,416 ft^2 (Tetra Tech, 2003a) are deemed representative of current conditions. The thickness of shallow plume was considered to be 12.5 feet (one-half of the assumed 25-foot thickness of the surficial aquifer). Assuming an aquifer porosity of 0.3, the volume of the shallow VOC plume was calculated to be 15.5 million gallons.

It should be noted that the depth and area of the shallow inorganic plume encompasses the area of the shallow VOC plume in the northern plume area.

Intermediate Plume

The current intermediate well data for VOCs is consistent with historical data, i.e., benzene is the only COC. Because a limited number of wells are currently sampled, the plume area is interpolated based on the area of the landfill that was historically assumed to be the source of the inorganics in groundwater. Therefore, the historical estimated plume area of 278,400 ft^2 (Tetra Tech, 2003a) is deemed representative of current plume conditions around well OLD-OU-03B. The thickness of intermediate plume was considered to be 12.5 feet (one-half of the assumed 25-foot thickness of the surficial aquifer). Assuming an aquifer porosity of 0.3, the volume of the intermediate VOC plume was calculated to be 7.8 million gallons.

The current intermediate well data for inorganics is also consistent with historical data (i.e., area around wells OLD-OU-02B, -03B, -29B, and -30B). Therefore, the historical estimated plume area of 521,600 ft^2 (Tetra Tech, 2003a) is deemed representative of current conditions. The thickness of intermediate plume was considered to be 12.5 feet (one-half of the assumed 25-foot thickness of the surficial aquifer). Assuming an aquifer porosity of 0.3, the volume of the intermediate inorganic plume was calculated to be 14.6 million gallons.

It should be noted that the depth and area of the intermediate inorganic plume encompasses the area of the intermediate VOC plume in the northern plume area.

3.3.3 Southern Area Groundwater

As determined in the RI, the surficial aquifer is approximately 25 feet thick. The upper half of this aquifer is considered the shallow zone, and the lower half is the intermediate zone. Data from groundwater samples collected in the Southern Area of OU 2 from March 2008 through April 2009 were used to delineate the areas of groundwater plumes. One plume in the shallow zone is shown on Figure 3-1, and two plumes in the intermediate zone are shown on Figure 3-2. All three plumes contain all five COCs.

Shallow Plume

The Southern Area shallow VOC plume shown in Figure 3-1 is 338,200 ft^2. The thickness of plume was considered to be 12.5 feet (one-half of the assumed 25-foot thickness of the surficial aquifer). Assuming an aquifer porosity of 0.3, the volume of the shallow VOC plume was calculated to be 9.5 million gallons.

Intermediate Plume

The Southern Area intermediate VOC plumes shown in Figure 3-2 are approximately 148,300 ft^2 and 417,300 ft^2, for a total area of 565,600 ft^2. The thickness of plume interval was considered to be 12.5 feet (one-half of the assumed 25 foot thickness of the surficial aquifer). Assuming an aquifer porosity of 0.3, the total volume of the shallow VOC plumes was calculated to be 15.9 million gallons.

4.0 SCREENING OF REMEDIATION TECHNOLOGIES AND PROCESS OPTIONS

The primary objective of identifying, screening, and evaluating the potential remediation technologies and process options that may be applicable to remedial alternatives for OU 2 is to develop an appropriate range of remedial technologies and process options that will then be used for developing remedial alternatives. Based on the applicability of the presumptive remedy to OU 2, containment is the recommended remedy to address the RAOs described in Section 3.1.

The basis for remediation technology identification and screening began in Section 3.0 with the identification of ARARs, development of RAOs, identification of GRAs, and identification of the volumes and areas of the media of concern.

Remediation technology screening is performed in this section with the completion of the following analytical steps:

- Identification and screening of remediation technologies and process options
- Evaluation and selection of representative process options

The selection of remediation technologies and process options for initial screening is based on the Guidance for Conducting Remedial Investigations/Feasibility Studies under CERCLA (EPA, 1988). The screening is first conducted at a preliminary level to focus on relevant remediation technologies and process options and is then conducted at a more detailed level based on certain evaluation criteria. Finally, process options are selected to represent the remediation technologies that have passed the detailed evaluation and screening.

As discussed above, EPA has developed a presumptive remedy for CERCLA municipal landfills that should also be applied to appropriate military landfills. The conditions at OU 2 meet the presumptive remedy guidelines, so the requirement to conduct an initial identification and screening of alternative technologies (other than source containment) has been eliminated. The presumptive remedy includes monitoring, implementation of LUCs, and containment via maintenance of the existing soil cover and source area groundwater control.

4.1 PRELIMINARY SCREENING OF REMEDIATION TECHNOLOGIES AND PROCESS OPTIONS

The detailed screening of remediation technologies and process options for buried waste is based on overall applicability to the media of concern and specific conditions at the site. Because this revised FS takes advantage of the presumptive remedy for municipal landfills, the technology screening has been

streamlined to focus on containment, LUCs, and monitoring. Table 4-1 summarizes the detailed screening of remediation technologies and process options by presenting the GRAs, identifying the remediation technologies and process options, and providing a brief description of each process option followed by screening comments. The following are the technologies and process options retained for detailed screening for buried waste.

4.1.1 No Action

No Action would consist of leaving the OU 2 landfill exactly as it is without implementing any RA or performing any monitoring and/or maintenance. As required under CERCLA regulations, the No Action alternative is carried through this Revised FS to provide a baseline for comparison to other alternatives and their effectiveness in mitigating risks posed by site contaminants.

4.1.1.1 Effectiveness

The No Action alternative would not be effective in reducing risks or meeting the RAOs because no exposure control would be performed. Because no monitoring or source containment would be performed, the No Action alternative would not be effective in evaluating the potential migration of COCs or the reduction of COCs through NA.

4.1.1.2 Implementability

There would be no implementability concerns because no actions would be implemented.

4.1.1.3 Cost

There would be no costs associated with the No Action alternative.

4.1.1.4 Conclusion

Although it would not be effective, the No Action alternative is required to be retained for comparison to other options.

4.1.2 Land Use Controls

Based on site conditions, LUCs implemented at OU 2 would include property use restrictions to prevent exposure to the groundwater and to prevent the site from being used for residential purposes. The installation of groundwater wells (other than for use as environmental monitoring wells), excavation, or the installation of any structure which would violate the integrity of the in situ landfill cover would be prohibited. Deed restrictions would ensure that these use restrictions remain in place if the property is sold.

4.1.2.1 Effectiveness

LUCs would be an effective tool to prevent future exposure to landfill contents and unacceptable concentrations of groundwater COCs within the OU 2 boundaries.

4.1.2.2 Implementability

LUCs were implemented at OU 2 in 2008.

4.1.2.3 Cost

Costs to maintain LUCs at OU 2 would be low.

4.1.2.4 Conclusion

LUCs are retained in combination with other technologies and process options for the development of remedial alternatives. This technology meets the presumptive remedy guidelines.

4.1.3 Containment

Containment of OU 2 landfill wastes would involve the application of physical measures to reduce the potential for contaminant migration and thereby reduce the risk from both chemical and physical exposure to the public and the environment. The OU 2 landfill has the required 2-foot soil cover. Containment would include maintenance of the existing soil cover.

Containment of source area groundwater contaminants in the Southern Area of OU 2 could be accomplished through groundwater water control via monitored natural attenuation (MNA) or enhanced biodegradation of VOCs in groundwater before the groundwater leaves the site. MNA would include the collection of groundwater and surface water samples to monitor the natural biological processes in the aquifer. NA processes are ongoing in the aquifer. Enhanced biodegradation would accelerate NA processes in the aquifer by introducing nutrients to stimulate bacterial growth.

4.1.3.1 Effectiveness

The soil cover would effectively minimize exposure of human and ecological receptors through direct contact with subsurface soil and landfill contents. Enhanced biodegradation has been shown to be effective in accelerating the NA process for Southern Area groundwater COCs.

4.1.3.2 Implementability

Maintenance of the existing soil cover would be readily implementable. Pilot tests at OU 2 indicate that enhanced biodegradation is implementable. Periodic monitoring would be required, and several contractors are readily available for these treatment and monitoring activities.

4.1.3.3 Cost

The operations and maintenance (O&M) cost for maintenance of the existing soil cover would be moderate and would be borne by the current property owner. Costs associated with NA would be low. Costs associated with enhanced biodegradation would be moderate.

4.1.3.4 Conclusion

Containment of landfill waste and OU 2 Southern Area source area groundwater is retained for the development of remedial alternatives. This technology meets the presumptive remedy guidelines.

4.1.4 Monitoring

Monitoring of buried waste in at OU 2 would involve periodic inspections of the existing soil cover to determine whether the thickness remains at 2 feet.

Monitoring of LUCs would include annual site inspections to verify continued implementation of these LUCs.

Monitoring of contaminant concentrations in groundwater and surface water at the OU 2 boundary would consist of the regular collection and analysis of groundwater and surface water samples to assess trends in contaminant concentrations and to evaluate for the potential off-site migration of these contaminants. In the Southern Area, groundwater and surface water monitoring would be a component of containment. The progress of NA or enhanced biodegradation would be evaluated based on data from groundwater and surface water sampling.

4.1.4.1 Effectiveness

Monitoring of buried waste and LUCs alone would not be effective but would provide information necessary for maintenance of the soil cover and LUCs. Monitoring of groundwater and surface water would be an effective tool to evaluate the progress of NA processes and the potential migration of COCs.

4.1.4.2 Implementability

Monitoring of the existing soil cover, LUCs, groundwater, and surface water would be readily implementable. Sampling and analysis programs are already in place for groundwater and surface water.

4.1.4.3 Cost

Costs associated with monitoring of soil cover and LUCs would be low, and costs associated with groundwater and surface water monitoring would be moderate.

4.1.4.4 Conclusion

Monitoring is retained for the development of remedial alternatives. This technology meets the presumptive remedy guidelines.

4.2 SELECTION OF REPRESENTATIVE PROCESS OPTIONS

The following technologies and process options are retained to develop remedial alternatives for OU 2:

- No Action
- LUCs
- Containment
- Monitoring

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5.0 ASSEMBLY AND DETAILED ANALYSES OF REMEDIAL ALTERNATIVES

In the next step of the Revised FS, the remedial technologies retained from preliminary screening were assembled into remediation alternatives. This section presents an evaluation of each remedial alternative with respect to the criteria of the NCP of 40 Code of Federal Regulations (CFR) Part 300, as revised in 1990. The criteria required by the NCP and the relative importance of these criteria are described in the following subsections.

5.1 EVALUATION CRITERIA

In accordance with the NCP (40 CFR 300.430), the following nine criteria are used for the evaluation of remedial alternatives:

- Overall protection of human health and the environment
- Compliance with ARARs
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Implementability
- Cost
- State acceptance
- Community acceptance

5.1.1 Threshold Criteria

The first two criteria are considered to be threshold criteria, which must be satisfied for an alternative to be eligible for selection.

5.1.1.1 Overall Protection of Human Health and the Environment

Alternatives are assessed for adequate protection of human health and the environment, in both the short and long term, from unacceptable risks posed by hazardous substances or contaminants present at the site. For this purpose, alternatives should eliminate, reduce, or control exposure to concentrations of contaminants exceeding remediation goals. Overall protection draws on the assessments of other evaluation criteria, especially compliance with ARARs, long-term effectiveness and permanence, and short-term effectiveness.

5.1.1.2 Compliance with ARARs

Alternatives must be assessed to determine whether they attain ARARs under federal and state environmental or facility siting regulations. If one or more regulations that are applicable cannot be complied with, a waiver must be invoked by the appropriate regulatory body for the alternative to be considered acceptable. Grounds for invoking a waiver include the following:

- The alternative is an interim measure and will become part of a total RA that will attain the ARAR.
- Compliance will result in greater risk to human health and the environment.
- Compliance is technically impracticable from an engineering perspective.
- The alternative will attain a standard of performance equivalent to that required under the otherwise applicable standard, requirement, or limit through use of another method or approach.
- A state requirement has not been consistently applied, or the state has not demonstrated the intention to consistently apply the promulgated requirement, in similar circumstances at other RAs within the state.
- For CERCLA-financed response actions only, the cost for an alternative that attains the ARAR will be so high that it would threaten the ability to fund other CERCLA-financed response actions. This circumstance is not applicable for OU 2 because RAs will not be funded by CERCLA.

5.1.2 Primary Balancing Criteria

The following five criteria are considered to be the primary balancing criteria used to weigh the relative merits of alternatives.

5.1.2.1 Long-Term Effectiveness and Permanence

Alternatives must be assessed for the long-term effectiveness and permanence they offer, along with the degree of certainty that the alternative will prove successful. Factors considered, as appropriate, include the following:

- Magnitude of residual risk: Risk posed by untreated waste or treatment residuals at the conclusion of remedial activities. The characteristics of residuals should be considered to the degree that they remain hazardous, taking into account their volume, toxicity, mobility, and propensity to bioaccumulate.

- Adequacy and reliability of controls: Controls such as containment systems that are necessary to manage treatment residuals and untreated waste must be shown to be reliable. In particular, the following should be addressed:

  - The uncertainties associated with land disposal for providing long-term protection from residuals;

  - The potential need to replace technical components of the alternative (such as a cap, slurry wall, or treatment system); and

  - The potential exposure pathways and risks posed if the RA needs replacement.

5.1.2.2 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives are assessed for the degree to which they employ recycling or treatment that reduces the toxicity, mobility, or volume (including how treatment is used) to address the principal threats posed by the site. Factors to be considered, as appropriate, include the following:

- The treatment or recycling processes the alternative employs and the materials that these processes will treat.

- The amount of hazardous substances, pollutants, or contaminants that will be destroyed, treated, or recycled.

- The degree of expected reduction in toxicity, mobility, or volume of waste due to treatment or recycling and the specification of which reduction(s) is occurring.

- The degree to which the treatment is irreversible.

- The type and quantity of residuals that will remain following treatment, considering the persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous substances and their constituents.

- The degree to which treatment reduces the inherent hazards posed by principal threats at the site.

5.1.2.3 Short-Term Effectiveness

The short-term impacts of the alternative are assessed considering the following:

- Short-term risks that might be posed to the community during implementation.

- Potential impacts on workers during RA and the effectiveness and reliability of protective measures taken to address these impacts.

- Potential environmental impacts of the RA and the effectiveness and reliability of mitigative measures during implementation.

- Time until protection is achieved.

5.1.2.4 Implementability

The ease or difficulty of implementing the alternatives is assessed by considering the following types of factors, as appropriate:

- Technical feasibility, including technical difficulties and unknowns associated with the construction and operation of a technology, reliability of the technology, ease of undertaking additional RAs, and ability to monitor the effectiveness of the remedy.

- Administrative feasibility, including activities needed to coordinate with other offices and agencies and the ability and time required to obtain any necessary approvals and permits from other agencies.

- Availability of services and materials including the availability of adequate off-site treatment, storage capacity, and disposal capacity and services; the availability of necessary equipment and specialists and provisions to ensure any necessary additional resources; the availability of services and materials; and the availability of prospective technologies.

5.1.2.5 Cost

Capital costs include both direct and indirect costs. The net present worth (NPW) of the capital and O&M costs is also provided. Typically, the cost estimate accuracy range is plus 50 percent to minus 30 percent.

5.1.3 Modifying Criteria

The final two criteria are considered to be modifying criteria that must be considered during remedy selection.

5.1.3.1 State Acceptance

The State of Florida's concerns that must be assessed include the following:

- The state's position and key concerns related to the preferred alternative and other alternatives.

- State comments on ARARs or the proposed use of waivers.

These concerns will be discussed, to the extent possible, prior to issuing the Proposed Plan for public comment.

5.1.3.2 Community Acceptance

The community acceptance assessment involves the responses of the community to the Proposed Plan and includes determining which components of the alternatives the interested persons in the community support, have reservations about, or oppose. This assessment can be performed after comments on the Proposed Plan are received from the public.

5.1.4 Selection of Remedy

The selection of a remedy is a two-step process. The first step consists of the identification of a preferred alternative and presentation of the alternative in a Proposed Plan to the community for review and comment. The preferred alternative must meet the following criteria:

- Protection of human health and the environment.
- Compliance with ARARs unless a waiver is justified.
- Cost effectiveness in protecting human health and the environment and in complying with ARARs.
- Utilization of permanent solutions and alternate treatment technologies or resource recovery technologies to the maximum extent practicable.

The second step consists of the Navy's review of the public comments and a determination of whether the preferred alternative continues to be the most appropriate RA for the site, in consultation with FDEP and EPA.

5.2 ASSEMBLY OF REMEDIAL ALTERNATIVES

The remedial alternatives developed for OU 2, based on the technology screening presented in Section 4.0 and taking into consideration the presumptive remedy guidance, are discussed below.

5.2.1 Northern Area

Two alternatives were developed for the Northern Area:

Alternative N-1: No Action

Alternative N-2: Landfill Containment, LUCs, and Monitoring

5.2.2 Southern Area

Three alternatives were developed for the Southern Area:

Alternative S-1: No Action

Alternative S-2: Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring

Alternative S-3: Landfill Containment, Source Area Groundwater Control through a biobarrier, LUCs, and Monitoring

5.3 DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES – NORTHERN AREA

5.3.1 Alternative N-1: No Action

5.3.1.1 Description

The No Action alternative maintains the site as is. This alternative does not address site contamination and is only retained to provide a baseline for comparison to other alternatives, as required under CERCLA. There would be no maintenance of the existing landfill cover or restrictions on site use, groundwater use, or soil disturbance.

5.3.1.2 Detailed Analysis

Overall Protection of Human Health and the Environment

Alternative N-1 would not provide for protection of human health and the environment. The potential for exposure of human receptors to contaminated subsurface soil, landfill contents, and source area groundwater would increase over time because the existing soil cover would not be maintained and existing site-specific LUCs would not be monitored or enforced.

Compliance with ARARs and TBCs

Alternative N-1 would not comply with any ARARs or TBCs because no action would be taken.

Long-Term Effectiveness and Permanence

Alternative N-1 would have no long-term effectiveness and permanence because nothing would be done to limit exposure to buried waste. Alternative N-1 would not achieve the RAOs.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative N-1 would not reduce the toxicity, mobility, or volume of any contaminants through treatment because no treatment would occur.

Short-Term Effectiveness

Because no action would occur, implementation of Alternative N-1 would not pose any risks to on-site workers or result in short-term adverse impact to the local community and the environment.

Implementability

Because no action would occur, Alternative N-1 would be readily implementable.

Cost

There would be no costs associated with Alternative N-1.

5.3.2 Alternative N-2: Landfill Containment, LUCs, and Monitoring

5.3.2.1 Description

Alternative N-2 would consist of three major components: landfill containment, LUCs, and monitoring of the landfill cover, LUCs, groundwater, and surface water.

Landfill Containment

Landfill containment would consist of maintaining the existing 2-foot soil cover to prevent direct contact with buried waste and erosion of impacted soil and wastes. Maintenance of this cover is now the responsibility of Bogey Boggy Creek 08, LLC, the current property owner (FDEP, 2008).

Land Use Controls

Existing LUCs, as described in Section 1.4.2, would be maintained to control or eliminate pathways of exposure to buried waste and source area groundwater at the site. These LUCs would be in place as long as the landfill remains in place at OU 2.

Monitoring

Monitoring of LUCs would be conducted to ensure that site restrictions enacted to prohibit unauthorized intrusive activity within the landfill boundary and prohibit the use of the groundwater are in place. Monitoring of landfill containment would include periodic inspections of the landfill cover to ensure that the cover thickness remains at 2 feet. Monitoring would also include periodic sampling of both groundwater and surface water to confirm that groundwater with concentrations of VOCs that exceed PRGs is not migrating from the site. The groundwater monitoring program would continue with semiannual monitoring of four well pairs, and the current surface water monitoring program would continue with semiannual sampling at three locations. Groundwater samples would be analyzed for select VOCs, select metals, and NA parameters and surface water samples would be analyzed for select VOCs and select metals.

After 5 years, recommendations to reduce analytical parameters and sampling frequency may be made. Monitoring would continue for a minimum of 10 years.

5.3.2.2 Detailed Analysis

Overall Protection of Human Health and the Environment

Alternative N-2 would be protective of human health and the environment. Landfill containment would protect human health by preventing exposure to contaminated subsurface soil and landfill contents. LUCs would prevent excavation at the site and prevent exposure to site groundwater. Monitoring would be protective of human health and the environment by verifying that LUCs and the soil cover remain in place and identifying any potential off-site source area groundwater contamination migration.

Compliance with ARARs and TBCs

Alternative N-2 would comply with all OU 2 ARARs. Tables 5-1 and 5-2 summarize chemical- and action-specific ARARs and TBCs, respectively, for Alternative N-2.

Long-Term Effectiveness and Permanence

Landfill containment would prevent access to buried waste, meeting RAO 1. LUCs including groundwater use restrictions would prevent potential human exposure to and consumption of contaminated groundwater on a long-term basis, meeting RAO 2. Monitoring would provide adequate information about contaminant concentrations in groundwater and surface water, indicating whether RAO 3 is met. The reliability of monitoring data is high.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative N-2 would not reduce the toxicity, mobility, or volume of any contaminants through treatment because no treatment would occur.

Short-Term Effectiveness

Alternative N-2 would include the sampling of groundwater and surface water, which may expose workers to contaminants in these media. Occupational Safety and Health Administration (OSHA) standards would be followed during the implementation of remedial measures to minimize these exposures.

Implementability

Alternative N-2 would be readily implementable. A 2-foot soil cover over the landfill is already in place, as are LUCs. Materials and labor are readily available for monitoring of the soil cover and LUCs, and for periodic sampling of groundwater and surface water. Future RAs, if needed, would not be hindered by implementation of this alternative.

Cost

The estimated costs for Alternative N-2 are as follows:

Capital Cost:	$ 0
30-Year NPW of O&M:	$ 321,000
30-Year NPW of Annual/Periodic Costs:	$ 224,000
30-Year NPW:	$ 545,000

The above figures have been rounded to the nearest $1,000 to reflect the preliminary nature of these estimates. A detailed breakdown of these costs is provided in Appendix C.

5.4 DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES – SOUTHERN AREA

5.4.1 Alternative S-1: No Action

5.4.1.1 Description

The No Action alternative maintains the site as is. This alternative does not address site contamination and is only retained to provide a baseline for comparison to other alternatives, as required under CERCLA. There would be no maintenance of the existing landfill cover, restrictions on land and groundwater use, or containment of source area groundwater.

5.4.1.2 Detailed Analysis

Overall Protection of Human Health and the Environment

Alternative S-1 would not provide for protection of human health and the environment. The potential for exposure of human receptors to contaminated subsurface soil, landfill contents, and groundwater would increase over time because the existing soil cover would not be maintained, and site-specific LUCs would be not be monitored. This option does not address exposure risks associated with off-site migration of source area groundwater.

Compliance with ARARs and TBCs

Alternative S-1 would not comply with chemical-specific ARARs or TBCs because no action would be taken to reduce COC concentrations in source area groundwater migrating off site, or limit exposure to or migration of COCs. There are no location- or action-specific requirements for this alternative.

Long-Term Effectiveness and Permanence

Alternative S-1 would have no long-term effectiveness and permanence because nothing would be done to reduce concentrations of site COCs in source area groundwater migrating off site, or to limit exposure to or migration of COCs. Alternative S-1 would not achieve the RAOs.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative S-1 would not reduce the toxicity, mobility, or volume of COCs through treatment because no treatment would occur. Some reduction in the toxicity and/or volume of groundwater COCs may occur through NA, but no monitoring would be performed to verify this.

Short-Term Effectiveness

Because no action would occur, implementation of Alternative S-1 would not pose any risks to on-site workers or result in short-term adverse impact to the local community and the environment.

Implementability

Because no action would occur, Alternative S-1 would be readily implementable.

Cost

There would be no costs associated with Alternative S-1.

5.4.2 Alternative S-2: Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring

5.4.2.1 Description

Alternative S-2 would consist of four major components: landfill containment, MNA of source area groundwater contamination, LUCs, and monitoring of LUCs and the landfill cover.

Landfill Containment

Landfill containment would consist of maintaining the existing 2-foot soil cover to prevent erosion and direct contact with buried waste. According to the property transfer deed, maintenance of this cover is the responsibility of the property owner, currently Bogey Boggy Creek 08, LLC.

MNA of Source Area Groundwater Contaminants Migrating Off Site

MNA would include periodic sampling of both groundwater and surface water to confirm that NA processes in source area groundwater are decreasing COC concentrations in groundwater migrating from the site. The groundwater monitoring program would continue with semiannual monitoring of select

VOCs and select metals at 23 wells (6 well pairs and 11 single wells) and annual monitoring of NA parameters at 9 wells. The surface water monitoring program would continue with semiannual sampling of select VOCs and iron at four locations.

After two years, recommendations to reduce parameters and frequency may be made. Monitoring would continue for a minimum of 10 years.

Land Use Controls

Existing LUCs, as described in Section 1.4.2, would be maintained to control or eliminate pathways of exposure to buried waste and source area groundwater at the site. These LUCs would be in place as long as the landfill remains in place at the site.

Monitoring

Monitoring of landfill containment would include periodic inspections of the landfill cover to ensure that the cover thickness remains at 2 feet. Monitoring of LUCs would be conducted to ensure that site restrictions enacted to prohibit unauthorized intrusive activity within the landfill boundary and prohibit the use of the groundwater are in place. Groundwater and surface water monitoring are described above under MNA sampling.

5.4.2.2 Detailed Analysis

Overall Protection of Human Health and the Environment

Alternative S-2 would be protective of human health and the environment. Landfill containment, requiring continual cover maintenance, would protect human health by preventing exposure to contaminated subsurface soil and landfill contents. LUCs would prevent excavation and residential development at the site and exposure to site groundwater.

NA occurring in groundwater would continue and, over a period of time, COC concentrations in source area groundwater migrating from OU 2 would meet PRGs. Monitoring would confirm that COC concentrations are decreasing in source area groundwater migrating from the site.

Compliance with ARARs and TBCs

Alternative S-2 would comply with all OU 2 ARARs. The chemical-specific ARARs identified for the COCs in Southern Area groundwater at OU 2 include FDEP FSW CTLs (for surface water in the canals, the OU groundwater discharge area) and GCTLs. Currently benzene, cis-1,2-DCE, PCE, TCE, and vinyl chloride are present in groundwater at the property boundary at concentrations that exceed PRGs. However, none of these COCs are present in canal surface water at concentrations that exceed FSW CTLs.

Tables 5-3 and 5-4 summarize chemical- and action-specific ARARs and TBCs, respectively, for Alternative S-2.

Long-Term Effectiveness and Permanence

Landfill containment would prevent access to the buried waste, meeting RAO 1. LUCs with groundwater use restrictions would prevent potential human exposure to and consumption of contaminated groundwater on a long-term basis, meeting RAO 2. Containment of source area groundwater COCs via MNA would reduce COC concentrations in source area groundwater migrating off site. Over a period of time, these concentrations will be reduced to less than PRGs, meeting RAO 3. Monitoring would provide adequate information about the progress of NA; the reliability of monitoring data is high.

Reduction of Toxicity, Mobility, or Volume through Treatment

Reduction of toxicity in source area groundwater leaving the OU 2 site would occur through NA (passive treatment). Biodegradation is an irreversible process and the progress of NA would be documented through monitoring.

Short-Term Effectiveness

Alternative S-2 would include the sampling of groundwater and surface water, which may expose workers to contaminants in samples. OSHA standards would be followed during the implementation of remedial measures to minimize these exposures.

Implementability

Alternative S-2 would be readily implementable. A 2-foot soil cover over the landfill is already in place, as are LUCs. Materials and labor are readily available for monitoring of the LUCs and the soil cover, and for periodic sampling of groundwater and surface water. Future RAs, if needed, would not be hindered by implementation of this alternative.

Cost

The estimated costs for Alternative S-2 are as follows:

Capital Cost:	$ 0
30-Year NPW of O&M:	$ 321,000
30-Year NPW of Annual/Periodic Costs:	$ 223,000
30-Year NPW:	$ 545,000

The above figures have been rounded to the nearest $1,000 to reflect the preliminary nature of these estimates. A detailed breakdown of these costs is provided in Appendix C.

5.4.3 Alternative S-3: Landfill Containment, Source Area Groundwater Control via a Biobarrier, Land Use Controls, and Monitoring

5.4.3.1 Description

Alternative S-3, illustrated on Figure 5-1, would consist of four major components: landfill containment, source area groundwater control through a biobarrier, LUCs, and monitoring. Alternative S-3 is identical to Alternative S-2, as described in Section 5.4.2.1, except for the method used to contain source area groundwater, as described below.

A permeable bioreactive barrier, consisting of two rows of permanent injection wells along the OU 2-GOAA property line, would contain the source area groundwater contamination within OU 2, preventing migration of contamination to off-site groundwater and surface water. This alternative would include the installation of more injection wells to extend the existing 150-foot biobarrier 150 feet to the north and 150 feet to the south and create a 450-foot biobarrier, as shown on Figure 5-1. Injection of a slow-release carbon source such as EOS® in these wells would increase the reaction rate of NA processes that are already under way within the Southern Area VOC groundwater plume. Extension of the biobarrier will allow it to intercept the source area groundwater plumes in the Southern Area before the contamination migrates off-site. A pilot study conducted in 2007 evaluated key design parameters for the biobarrier. The results of the study indicated that enhancing the naturally occurring process with supplemental carbon was a suitable remedial approach for the site.

5.4.3.2 Detailed Analysis

Overall Protection of Human Health and the Environment

Alternative S-3 would be protective of human health and the environment. Containment would protect human health by preventing exposure to contaminated subsurface soil and landfill contents, and by preventing the migration of VOCs in the source area groundwater plume to off-site groundwater and surface water. LUCs would prevent both future excavation at the site and exposure to site groundwater.

Monitoring would be protective of human health and the environment by indicating whether LUCs are in place, confirming that the soil cover is adequate, assessing the progress of the biobarrier, and sampling of groundwater and surface water to verify that COCs are not migrating from OU 2 (see 5.4.2.1).

Compliance with ARARs and TBCs

Alternative S-3 would comply with all OU 2 ARARs. Tables 5-5 and 5-6 summarize chemical- and action-specific ARARs and TBCs, respectively, for Alternative S-3.

Long-Term Effectiveness and Permanence

Landfill containment would prevent access to buried waste, meeting RAO 1. LUCs with groundwater use restrictions would prevent potential human exposure to and consumption of contaminated groundwater on a long-term basis, meeting RAO 2. The biobarrier would prevent off-site migration of source area groundwater contamination, meeting RAO 3. Over a period of time, enhanced biodegradation would reduce concentrations of the contaminants in OU 2 perimeter wells to levels less than PRGs. O&M for this alternative may consist of additional applications every 2 years. Monitoring of groundwater and surface water would provide adequate information about the progress of the enhanced biodegradation, and the reliability of monitoring data is high.

Reduction of Toxicity, Mobility, or Volume through Treatment

Reduction of toxicity in source area groundwater leaving the OU 2 site would occur through enhanced NA processes. Biodegradation is an irreversible process, and the progress of the biobarrier would be documented through monitoring.

Short-Term Effectiveness

Alternative S-3 would involve the installation of wells for injection of EOS® into the subsurface and monitoring of the biobarrier's progress. Exposure to workers during injection, well installation, and sampling would be minimal and could be controlled by following standard practices. Implementation of this alternative would not pose any safety concerns to nearby communities, the environment, or on-site workers. Sampling of groundwater and surface water may expose workers to hazardous substances. OSHA standards would be followed during implementation of remedial measures to minimize risks associated with these exposures.

Implementability

Alternative S-3 would be readily implementable. Monitoring and injection wells could be readily installed. Injection of the enhancement chemicals would be achieved using DPT and manpower and materials are available to inject the enhancement chemicals. Materials and labor are readily available for monitoring of LUCs and the landfill soil cover, and for periodic sampling of groundwater and surface water. This alternative is fairly reliable because monitoring would indicate the progress of biological processes and potential risks. This alternative should take less than 1 year to implement; however, biannual reinjection of the enhancement chemicals may be required. Permits for injecting EOS® and installing wells may be required. Administrative

issues and coordination with other agencies or acquiring permits would be easily achievable. Future RAs, if needed, would not be hindered by implementation of this alternative.

Cost

The estimated costs for Alternative S-3 are:

Capital Cost:	$ 1,180,000
30-Year NPW of O&M:	$ 1,228,000
30-Year NPW of Annual/Periodic Costs:	$ 1,940,000
30-Year NPW:	$ 4,348,000

The above figures have been rounded to the nearest $1,000 to reflect the preliminary nature of these estimates. A detailed breakdown of these costs is provided in Appendix C.

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6.0 COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES

The criteria for comparison of the alternatives are identical to those used for the detailed analysis of individual alternatives. Only the first seven criteria are used in this comparison because both state acceptance and community acceptance will be determined after finalization of the Revised FS.

6.1 NORTHERN AREA

The following remedial alternatives for the Northern Area are compared in this section:

Alternative N-1: No Action

Alternative N-2: Landfill Containment, LUCs, and Monitoring

Table 6-1 summarizes the comparative analysis of the two remedial alternatives.

6.1.1 Overall Protection of Human Health and the Environment

Alternative N-1 would not provide for protection of human health and the environment. The potential for exposure of human receptors to contaminated subsurface soil, landfill contents, and source area groundwater would increase over time because the existing soil cover would not be maintained and site-specific LUCs would no longer be enforced.

Alternative N-2 would provide for protection to the environment. Containment would protect human health by preventing exposure to contaminated subsurface soil and landfill contents. LUCs would prevent excavation at the site and prevent exposure to source area groundwater. Monitoring would be protective of human health and the environment by verifying that LUCs and the soil cover remain in place and by identifying any source area groundwater contamination that migrates off site.

6.1.2 Compliance with ARARs and TBCs

Alternative N-1 would not comply with any OU 2 ARARs or TBCs because no action would be taken.

Alternative N-2 would comply with all ARARs. FDEP landfill cover requirements and presumptive remedy requirements for landfills would be met.

6.1.3 Long-Term Effectiveness and Permanence

Alternative N-1 would have no long-term effectiveness and permanence because nothing would be done.

Alternative N-2 would provide long-term effectiveness and permanence through maintenance of the existing 2-foot soil cover over the landfill, LUCs to prevent landfill excavation and site groundwater access, and containment of source area groundwater COCs. Deed restrictions would ensure continued implementation of LUCs in the event there is a change in property ownership. These measures would be in place for as long as the landfill exists.

6.1.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Neither Alternative N-1 nor Alternative N-2 would reduce the toxicity, mobility, or volume of COCs through treatment because no treatment would occur with either alternative.

6.1.5 Short-Term Effectiveness

Because no action would occur, implementation of Alternative N-1 would not pose risks to on-site workers or result in short-term adverse impact to the local community or the environment.

Alternative N-2 would have greater short-term risks to human health and the environment than Alternative N-1 because it would include maintenance of the existing soil cover and sampling of groundwater wells and surface water. However, impacts to the environment such as soil erosion would be controllable, and risks to workers from soil cover maintenance and sampling would be low.

6.1.6 Implementability

Alternative N-1 would be easy to implement because no action would be taken.

Alternative N-2 would be readily implementable. A 2-foot soil cover over the landfill is already in place, as are LUCs. Materials and labor are readily available for monitoring of the soil cover and LUCs, and for periodic sampling of groundwater and surface water. Future RAs, if needed, would not be hindered by implementation of this alternative.

6.1.7 Cost

The capital and O&M costs and NPW of the alternatives are summarized as follows:

Alternative	Capital ($)	NPW of O&M ($)	NPW of Annual/ Periodic Costs ($)	NPW ($)
N-1	0	0	0	0
N-2	0	321,000	224,000	545,000

The above figures have been rounded to the nearest $1,000 to reflect the preliminary nature of these estimates. The detailed cost estimate for Alternative N-2 is provided in Appendix C.

6.2 SOUTHERN AREA

The following remedial alternatives for the Southern Area are compared in this section:

Alternative S-1: No Action

Alternative S-2: Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring

Alternative S-3: Landfill Containment, Source Area Groundwater Control via a Biobarrier, LUCs, and Monitoring

Table 6-2 summarizes the comparative analysis of the three remedial alternatives.

6.2.1 Overall Protection of Human Health and the Environment

Alternative S-1 would not provide for protection of human health and the environment. The potential for exposure of human and environmental receptors to contaminated subsurface soil, landfill contents, and groundwater would increase over time because the existing soil cover would not be maintained and because site-specific LUCs would no longer be enforced. Also, under this alternative, no monitoring would occur; therefore, no warning would be provided if concentrations of contaminants were to migrate off site.

Alternative S-2 would provide a higher level of protection than Alternative S-1. The existing 2-foot landfill cover would be maintained, preventing exposure to contaminated subsurface soil and landfill contents. LUCs would prevent excavation at the site and exposure to site groundwater. NA occurring in groundwater would continue and, over a period of time, COC concentrations in source area groundwater migrating from OU 2 would meet PRGs. Monitoring would confirm that COC concentrations are decreasing in source area groundwater migrating from the site. Monitoring of the 2-foot landfill cover would

indicate where additional soil was required. LUCs would be monitored and enforced to prevent excavation of the landfill and the use of source area groundwater, protect site workers, and restrict residential land use.

Alternative S-3 would provide the highest level of protection the biobarrier would accelerate the biological processes already in progress in this groundwater (NA). The pilot study conducted at the site provides data indicating that the introduction of an enhancement agent is effective in accelerating existing biodegradation processes at the site.

6.2.2 Compliance with ARARs and TBCs

Alternative S-1 would not comply with any OU 2 ARARs or TBCs because no action would be taken.

Alternatives S-2 and S-3 would comply with all OU 2 ARARs through maintenance of the existing 2-foot landfill cover and LUCs and containment of source area groundwater COCs.

6.2.3 Long-Term Effectiveness and Permanence

Alternative S-1 would have no long-term effectiveness and permanence because nothing would be done.

Alternatives S-2 and S-3 would provide long-term effectiveness and permanence through maintenance of the existing 2-foot soil cover over the landfill, LUCs to prevent landfill excavation and site groundwater access, and containment of source area groundwater COCs. Deed restrictions would ensure continued implementation of LUCs in the event there is a change in property ownership. Biodegradation is a permanent process.

6.2.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative S-1 would not reduce the toxicity, mobility, or volume of COCs through treatment because no treatment would occur.

Alternative S-2 would include reductions in the toxicity of source area groundwater contaminants leaving the OU 2 site via MNA. Biodegradation is an irreversible process and the progress of NA would be documented through monitoring.

Alternative S-3 would provide faster reductions in the toxicity of source area groundwater contaminants leaving the OU 2 site by enhanced biodegradation of source area groundwater contamination via a biobarrier.

6.2.5 Short-Term Effectiveness

Because no action would occur, implementation of Alternative S-1 would not pose risks to on-site workers or result in short-term adverse impact to the local community and the environment.

Alternative S-2 would have greater short-term risks to human health and environment than Alternative S-1 because it would include maintenance of the existing soil cover and sampling of groundwater and surface water. However, human health risks are expected to be minimal, and impacts to the environment such as soil erosion would be controllable.

Alternative S-3 would have the greatest short-term risks to human health and environment because it would include construction of wells, injection of biodegradation enhancement chemicals, in addition to maintenance of the existing soil cover and sampling of groundwater and surface water. However, human health risks are expected to low, and impacts to the environment such as soil erosion would be controllable. Risks to workers during soil cover maintenance, drilling, sampling, and handling of chemicals would moderate.

6.2.6 Implementability

Alternative S-1 would be easy to implement because no action would be taken.

Alternatives S-2 and S-3 would be readily implementable. A 2-foot soil cover over the landfill is already in place, as are LUCs. Materials and labor are readily available for monitoring of the soil cover and LUCs, and for periodic sampling of groundwater and surface water. Injection wells could be readily installed for Alternative S-3. The pilot study report (CH2MHill, 2008b) indicates that the injection of enhancement agent is implementable and provides a preliminary list of full-scale biobarrier parameters. Future RAs, if needed, would not be hindered by implementation of either alternative.

6.2.7 Cost

The capital and O&M costs and NPW of the alternatives are summarized as follows:

Alternative	Capital ($)	NPW of O&M ($)	NPW of Annual/ Periodic Costs ($)	NPW of Alternative ($)
S-1	0	0	0	0
S-2	0	321,000	223,000	545,000
S-3	1,180,000	1,228,000	1,940,000	4,348,000

The above figures have been rounded to the nearest $1,000 to reflect the preliminary nature of these estimates. The detailed cost estimates for Alternatives S-2 and S-3 are provided in Appendix C.

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TABLES

TABLE 1-1

CHRONOLOGICAL SUMMARY OF EVENTS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Project Phase	Date	Activity	Further Description / Explanation
Remedial Investigation	May - November 1997	Phase I RI field operations	Geophysics to define landfill boundaries; surface soil, sediment, surface water sampling; soil vapor investigations; direct push technology (DPT), hand auger borings.
	March - October 1998	Phase II RI field operations	Monitoring well installation, geophysics to refine western landfill boundary, aquifer testing, DPT groundwater sampling.
	February 1999 - February 2001	Phase III RI field operations	Additional surface water and sediment sampling, monitoring well sampling, hand auger borings to refine cover thickness over landfill.
Soil IRA 1	April 1999	Removal of 2000 yd^3 PAH-contaminated soil from sample locations S91 and S103	Necessity for these IRAs is documented in a Time-Critical Removal Action Memorandum dated April 1999.
Soil IRA 2	August 2000	Soil cover placement of 86,000 yd^3 over 25 acres in southern portion of site to ensure 2-foot soil cover	
Remedial Investigation	March 2001	Remedial Investigation Report issued	Human Health Risk Assessment based on future recreational use of the site. Golf course located on northern portion of Operable Unit 2 and recreation fields planned for southern portion. Risk calculated for future residents (baseline), current and future recreational users, maintance workers, and trespassers.
Monitoring	March 2002	Quarterly groundwater sampling implemented. Monitoring conducted by Tetra Tech NUS.	
Property Transfer	October 14, 2002	Letter from the Mayor of Orlando requesting early transfer of the remaining parcels of the Main Base, McCoy Annex, and Area C from the Navy to the City of Orlando	

TABLE 1-1

CHRONOLOGICAL SUMMARY OF EVENTS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Project Phase	Date	Activity	Further Description / Explanation
Feasibility Study	March 7, 2003	Letter from the United States Environmental Protection Agency (EPA) expressing concerns about the presence of mercury in all media and several remediation alternatives.	Letter also states that "any remedy that includes any type of institutional control (i.e., land use control) as part of the solution cannot be approved at this time."
	April 21, 2003	Meeting to discuss Operable Unit 2 impacts to Greater Orlando Aviation Authority (GOAA) property.	Tetra Tech NUS distributed an annotated Technical Memorandum stating that groundwater contaminants had not migrated onto the GOAA property east of the canals, but that contamination did exist in the wells (OLD-OU2-12A/B, OLD-OU2-14A/B, and OLD-OU2-18A/B) located on the narrow strip of land between the southern fence line of Operable Unit 2 and the canals. GOAA representatives expressed concern that groundwater contamination migrating onto GOAA property could cause a violation of their National Pollutant Discharge Elimination System permit.
Monitoring	June 2003	Terraine began conducting quarterly groundwater sampling.	
Feasibility Study	July 2003	Feasibility Study, Revision 1, issued, addressing EPA's concerns.	Documented additional groundwater sampling; determined contaminnants of concern (COCs); identified and evaluated remedial alternatives and estimated their costs. Groundwater and landfill material were identified as the media of concern. Benzene, trichloroethene (TCE), vinyl chloride, iron, and manganese were selected as groundwater COCs. No COCs selected for surface soil, surface water, or sediment.

TABLE 1-1

CHRONOLOGICAL SUMMARY OF EVENTS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Project Phase	Date	Activity	Further Description / Explanation
Property Transfer	April 2, 2003	Navy memorandum issued documenting the dispute between the Department of Defense and the EPA over the responsibilities and authorities associated with Land Use Controls at NTC Orlando.	Led to the Navy instructing Tetra Tech NUS to proceed with the third soil IRA to provide soil cover in areas of the landfill cover where the cover depth was less than 2 feet.
Groundwater IRA	September 2003	Navy requests that JV-II complete field work to determine where contaminants were crossing the property line and evaluate the fate of the contaminants.	Request prompted by the GOAA complaint on April 21, 2003. RAB meeting on June 23, 2003.
Property Transfer	March 30, 2004	Finding of Suitability for Early Transfer, Phase 2 issued.	Stated future use of property is recreational.
Groundwater IRA	April 9, 2004	Abbreviated Work Plan for Remedial Action Pre-Design Activities issued.	Pre-design data collection field effort to better define nature and extent of contaminant migration off site onto GOAA property.
	June 2004	Pre-design sampling completed.	
	August 31, 2004	Summary of Pre-Design Data Collection Activities, Remedial Action at Operable Unit 2, Former NTC Orlando issued.	Data from June 2004 sampling included.
	December 1, 2004	Abbreviated Work Plan for Additional Remedial Action Pre-Design Activities, Operable Unit 2, Naval Training Center issued.	
Soil IRA 3	November 2004 - January 2005	Soil cover placement of 3,600 yd^3 clean fill on selected areas of golf course identified in FS and refined upon visual inspection.	Necessity for IRA is based on visible solid waste noted at the ground surface during inspections of the landfill cover in 2004. IRA included the improvement of 1,000 feet of golf cart path. Bahia sod placed over approximately 65,000 ft^2 areas of rough, and Bermuda sod placed on 6,400 ft^2 area of fairway.

TABLE 1-1

CHRONOLOGICAL SUMMARY OF EVENTS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Project Phase	Date	Activity	Further Description / Explanation
Groundwater IRA	January - June 2005	Additional pre-design data collection effort to finalize remedy for the site.	
Monitoring	September 2005	Groundwater sampling frequency changed to semi-annual.	
	November 2005	Monthly surface water sampling initiated at locations SW-32, SW-35, and LG-1 for VOCs only.	
Groundwater IRA	January 12, 2006	Biobarrier Injection Pilot Study Work Plan issued.	Data from January-June 2005 sampling discussed, but not included. Work Plan proposed two injection areas at the eastern border of the site, each with three well pairs for monitoring. A total of three new injection wells and eight new monitoring wells.
Property Transfer	March 1, 2006	Notification that Operable Unit 2 property would be sold at auction rather than transferred to the City of Orlando.	
	November 30, 2006	Letter from James E. Anderson, Director, Navy BRAC PMO SE, to Governor John Ellis Bush requesting permission to sell the McCoy Golf Course Parcel at a public sale.	The letter states that the City of Orlando is no longer interested in receipt of the parcel. This change in future ownership of the land cancels the plans for recreation fields in Southern Area and changes the future use of Southern Area to industrial.
	January 2007	Boggy Creek Golf Course closed.	The City of Orlando's lease with the Navy ended on January 31, 2007.
Groundwater IRA	May 13, 2007	Pilot Study Work Plan Addendum issued.	Outlined procedures for implementing Phase II EOS® injections: install 11 pairs of injection wells in two parallel rows along the eastern border of the site, increase EOS® concentration to 2 percent, install six new monitoring well pairs and monitor 30 and 60 days after injection.

TABLE 1-1

CHRONOLOGICAL SUMMARY OF EVENTS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Project Phase	Date	Activity	Further Description / Explanation
Property Transfer	January 2008	Finding of Suitability to Transfer McCoy Annex, Early Transfer of Operable Unit 2 issued.	Finding of Suitability to Transfer includes LUCs and states that maintenance of the landfill cover is the responsibility of the property owner.
	January 31, 2008	Operable Unit 2 parcel sold at public auction to private property owner Brian Mulvaney.	
	February 4, 2008	Brian Mulvaney sold Operable Unit 2 parcel to Bogey Boggy Creek, LLC, a Florida limited liability company.	Intended use of the property is industrial.
Groundwater IRA	May 2008	Work Plan Revision to Pilot Study Work Plan Addendum, Biobarrier Injection of Emulsified Oil Substrate at Operable Unit 2 issued.	Outlined plans for the Phase II Pilot Study, a 150-foot biobarrier with 11 pairs of injection wells installed along in two rows on 30-foot centers, injection of a 2 percent EOS® solution, and five new monitoring well pairs installed in two transects across the barrier.
	September 10, 2008	Presentation to Orlando Parterning Team of Remedial Action Update: Operable Unit 2, Former NTC Orlando.	CH2M Hill Informed the team that the biobarrier wall outlined in the Work Plan Revision was being implemented. Substrate injection was ongoing into the deeper Zone B wells. No injections were being made into Zone A due to poor development rates and low TCE concentrations in that zone. The first effectiveness monitoring event was scheduled for December 2008.
	October 2008	Biobarrier Injection Pilot Study Summary issued.	Discussion of results of Phase I Pilot Study and recommendations for full-scale biobarrier: 450 feet long, 2 rows, 29 or 45 nested injection well locations (20- or 30-foot spacing) using a 2 percent EOS® solution.
Monitoring	October 2008	Barnes, Furland, and Associates began conducting groundwater sampling.	

SURFACE SOIL

TABLE 2-1

IDENTIFICATION OF COPCs IN EXPOSED SURFACE SOIL
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI [1]	FOD [2]	Maximum Concentration or Activity			SCTL Industrial [3]	Adjusted SCTL Industrial [4]	Exceeds Adjusted SCTL	SCTL Leach I [5]	SCTL Leach II [6]	Minimum SCTL [7]	Target System/Organ	NTC BGSV [8]	FDEP COPC [9]	EPA RSL (Industrial)[10]	EPA COPC (Industrial)	EPA RSL (Residential)[11]	EPA COPC (Residential)
		Result	Location	Date													
VOLATILES (mg/kg)																	
Acetone	12/42	51.4	NTCSS11600	7/1/97	68,000	6,800	NO	25	6.8	**6.8**	Kidney -Liver -Neurological	NC	YES	61000 N	NO	6100 N	NO
Methylene Chloride	9/99	0.0163	NTCSSH4600	5/13/98	26	2.6	NO	0.02	7.3	0.02	Carcinogen -Liver	NC	NO	54 C	NO	11 C	NO
Tetrachloroethene	1/99	0.003	NTCSSS9200	6/30/97	18	1.8	NO	0.03	0.1	0.03	Carcinogen -Liver	NC	NO	2.7 C	NO	0.57 C	NO
Toluene	14/99	0.0149	NTCSSH4300	5/13/98	60,000	6,000	NO	0.5	5.6	0.5	Kidney -Liver -Neurological	NC	NO	4600 N	NO	500 N	NO
Xylenes, Total	9/99	0.0078	NTCSSS2000	6/28/97	700	70	NO	0.2	3.9	0.2	Body Weight -Mortality -Neurological	NC	NO	260 N	NO	60 N	NO
SEMIVOLATILES (mg/kg)																	
Benzo(a)pyrene	13/99	1.03	NTCSSS6200	6/30/97	0.7	0.07	YES	8	NC	**0.07**	Carcinogen	NC	NO [12]	**0.21** C	NO[12]	**0.015** C	NO[12]
Benzo(a)anthracene	4/99	1.06	NTCSS10200	6/30/97	#	NA	NO	0.8	NC	**0.8**	Carcinogen	NC	NO [14]	2.1 C	NO	**0.15** C	NO
BaPEq[13]	13/99	1.7	NTCSSS6200	6/30/97	0.7	0.07	YES	8	NC	**0.07**	Carcinogen	NC	YES	**0.21** C	YES	**0.015** C	YES
Benzo(b)fluoranthene	3/99	1.09	NTCSSS6200	6/30/97	#	NA	NO	2.4	NC	2.4	Carcinogen	NC	NO	2.1 C	NO	**0.15** C	NO
Benzo(g,h,i)perylene[15]	3/99	1.39	NTCSSS6200	6/30/97	52,000	5,200	NO	32,000	NC	5200	Neurological	NC	NO	1700 N	NO	170 N	NO
Benzo(k)fluoranthene	3/99	0.755	NTCSSS8200	6/30/97	#	NA	NO	24	NC	24	Carcinogen	NC	NO	21 C	NO	1.5 C	NO
Chrysene	4/99	1.13	NTCSSS6200	6/30/97	#	NA	NO	77	NC	77	Carcinogen	NC	NO	210 C	NO	15 C	NO
Dibenzo(a,h)anthracene	5/99	0.398	NTCSSS8200	6/30/97	#	NA	NO	0.7	NC	0.7	Carcinogen	NC	NO	**0.21** C	NO [14]	**0.015** C	NO [14]
Fluoranthene	9/99	1.85	NTCSS10200	6/30/97	59,000	5,900	NO	1,200	1.3	**1.3**	Blood -Kidney -Liver	NC	YES	2200 N	NO	230 N	NO
Indeno(1,2,3-cd)pyrene	3/99	1.17	NTCSSS6200	6/30/97	#	NA	NO	6.6	NC	6.6	Carcinogen	NC	NO	2.1 C	NO	**0.15** C	NO
Phenanthrene	2/99	1.42	NTCSS10200	6/30/97	36,000	3,600	NO	250	NC	250	Kidney	NC	NO	1700 N	NO	170 N	NO
Pyrene	7/99	1.37	NTCSS10200	6/30/97	45,000	4,500	NO	880	1.3	**1.3**	Kidney	NC	YES	1700 N	NO	170 N	NO
PESTICIDES/PCBs (mg/kg)																	
4,4'-DDD	1/99	0.0053	NTCSSS3000	6/28/97	22	2.2	NO	5.8	0.01	0.01	Carcinogen	NC	NO	7.2 C	NO	2 C	NO
4,4'-DDE	20/99	0.041	NTCSSS3000	6/28/97	15	1.5	NO	18	0.04	**0.04**	Carcinogen	NC	YES	5.1 C	NO	1.4 C	NO
4,4'-DDT	5/99	0.0098	NTCSSS5100	6/28/97	15	1.5	NO	11	0.06	0.06	Carcinogen -Liver	NC	NO	7 C	NO	1.7 C	NO
alpha-Chlordane[16]	4/99	0.0031	NTCSSS9000	6/28/97	14	1.4	NO	9.6	0.003	**0.003**	Carcinogen -Liver	NC	NO [14]	6.5 C	NO	1.6 C	NO
Dieldrin	2/99	0.003	NTCSS15500	6/30/97	0.3	0.03	NO	0.002	0.0001	**0.0001**	Carcinogen -Liver	NC	NO [14]	0.11 C	NO	0.03 C	NO
Endosulfan II [17]	2/99	0.0045	NTCSSS9200	6/30/97	7,600	760	NO	3.8	0.005	0.005	Body Weigh -Cardiovascular -Kidney	NC	NO	370 N	NO	37 N	NO
gamma-Chlordane[16]	5/99	0.003	NTCSSS9000	6/28/97	14	1.4	NO	9.6	0.003	0.003	Carcinogen -Liver	NC	NO	6.5 C	NO	1.6 C	NO
Heptachlor	9/99	0.003	NTCSS13700-D	6/30/97	1	0.1	NO	23	0.01	0.01	Carcinogen -Liver	NC	NO	0.38 C	NO	0.11 C	NO
INORGANICS (mg/kg)																	
Aluminum	99/99	5090	NTCSS15100-D	7/1/97	NC	NC	NO	***	***	NC	Body Weight	4780	NO	99000 N	NO	7700 N	NO
Antimony	2/99	0.84	NTCSSH4500	5/13/98	370	37	NO	5.4	3900	5.4	Blood -Mortality	NC	NO	41 N	NO	3.1 N	NO
Arsenic	65/99	4.8	NTCSS13300	7/1/97	12	1.2	YES	***	***	**1.2**	Carcinogen -Cardiovascular -Skin	1.9	YES	**1.6** C	YES	**0.39** C	YES
Barium	72/99	26.7	NTCSSS0100	5/12/98	130,000	13,000	NO	1,600	NC	1600	Cardiovascular	21.6	NO	19000 N	NO	1500 N	NO
Cadmium	9/99	0.23	NTCSSS2200	6/30/97	1,700	170	NO	7.5	NC	7.5	Carcinogen -Kidney	NA	NO	80 N	NO	7 N	NO
Calcium	95/99	16000	NTCSS12600	7/1/97	NC	NC	NO	NC	NC	NA	NA	33,568	Nutrient	NC	Nutrient	NC	NO
Chromium [18]	87/99	6.5	NTCSSS8000-D	6/28/97	470	47	NO	38	4.2	**4.2**	Carcinogen - Respiratory	7.7	NO	1400 C	NO	280 C	NO
Cobalt	11/99	0.27	NTCSSS2200	6/30/97	42,000	4,200	NO	***	NC	4200	Cardiovascular -Immunological -Neurological-Reproductive	NA	NO	30 N	NO	2.3 N	NO
Copper	56/99	11.9	NTCSSH0100	6/29/97	89,000	8,900	NO	***	NC	8900	None Specified	2.6	NO	4100 N	NO	310 N	NO
Iron	99/99	1240	NTCSSS3200	6/30/97	NC	NC	NO	***	***	NC	Blood -Gastrointestinal	843	NO	72000 N	NO	5500 N	NO
Lead	94/99	13.5	NTCSSS2200	6/30/97	1,400	140	NO	***	NC	140	Neurological	21.3	NO	800 N	NO	400 N	NO
Magnesium	87/99	332	NTCSS12600	7/1/97	NC	NC	NO	NC	NC	NC	NC	381	Nutrient	NC		NC	NO

TABLE 2-1

IDENTIFICATION OF COPCs IN EXPOSED SURFACE SOIL
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI [1]	FOD [2]	Maximum Concentration or Activity			SCTL Industrial [3]	Adjusted SCTL Industrial [4]	Exceeds Adjusted SCTL	SCTL Leach I [5]	SCTL Leach II [6]	Minimum SCTL [7]	Target System/Organ	NTC BGSV [8]	FDEP COPC [9]	EPA RSL (Industrial)[10]	EPA COPC (Industrial)	EPA RSL (Residential)[11]	EPA COPC (Residential)
		Result	Location	Date													
Manganese	87/99	35.5	NTCSS11600	7/1/97	43,000	4,300	NO	***	NC	4300	Neurological	10.8	NO	2300 N	NO	180 N	NO
Mercury	7/99	0.22	NTCSS15300	7/1/97	17	1.7	NO	2.1	0.01	**0.01**	Neurological	0.05	YES	2.4 N [19]	NO	0.43 N [19]	NO
Nickel	77/99	5.4	NTCSS14000	6/28/97	35,000	3,500	NO	130	NC	130	Body Weight	NC	NO	2000 N	NO	150 N	NO
Potassium	78/99	93.4	NTCSSS0100	5/12/98	NC	NC	NO	NC	NC	NA	NC	210	Nutrient	NC	Nutrient	NC	NO
Selenium	14/99	0.56	NTCSSH3600	6/28/97	11,000	1,100	NO	5.2	0.5	**0.5**	Hair Loss -Neurological -Skin	1.1	YES	510 N	NO	39 N	NO
Silver	11/99	2.4	NTCSS15300	7/1/97	8,200	820	NO	17	0.01	**0.01**	Skin	NC	YES	510 N	NO	39 N	NO
Sodium	1/99	128	NTCSSS8100	6/29/97	NC	NC	NO	NC	NC	NC	NC	NC	NO	NC	NO	NC	NO
Thallium	1/99	0.45	NTCSSH3700	6/28/97	150	15	NO	2.8	9	2.8	Hair Loss - Liver	NC	NO	6.6 N	NO	0.51 N	NO
Vanadium	84/99	6.6	NTCSS15100-D	7/1/97	10,000	1,000	NO	980	NC	980	None Specified	4.9	NO	720 N	NO	55 N	NO
Zinc	46/99	33.8	NTCSSS0100	5/12/98	630,000	63,000	NO	***	NC	63000	Blood	4.6	NO	31000 N	NO	2300 N	NO
HERBICIDES (mg/kg)																	
Pentachlorophenol	2/99	0.0047	NTCSSS0100	5/12/98	28	2.8	NO	0.03	0.2	0.03	Carcinogen -Kidney -Liver	NC	NO	9 C	NO	3 C	NO
RADIONUCLIDES (pCi/g)																	
Actinium-228	6/13	0.8	NTCSSH4700	5/13/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	1100 [20]	NO	679 [21]	NO
Bismuth-214	3/13	1.2	NTCSSH4900	5/13/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	12900 [20]	NO	7950 [21]	NO
Cesium-137	2/13	0.2	NTCSSH4400	5/13/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	75900 [20]	NO	46900 [21]	NO
Gross alpha	95/99	10.4	NTCSSH4300	5/13/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	NC [20]	NO	NC [21]	NO
Gross beta	88/99	28	NTCSSH4700	5/13/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	NC [20]	NO	NC [21]	NO
Lead-210	1/13	2.3	NTCSSH4400	5/13/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	4.18 [20]	NO	**0.335** [21]	YES
Lead-212	7/13	0.4	NTCSSS0100	5/12/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	5920 [20]	NO	3550 [21]	NO
Lead-214	9/13	1.4	NTCSSH4900	5/13/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	72500 [20]	NO	44800 [21]	NO
Thallium-208	3/13	0.4	NTCSSS0100	5/12/98	NC	NC	NO	NC	NC	NC	NC	NC	NO	37300 [20]	NO	23100 [21]	NO
TOTAL PETROLEUM HYDROCARBONS (mg/kg)																	
TPH -C8-C40	10/10	65.3	NTCSSS0100	5/12/98	2,700	270	NO	340	340	270	Multiple Endpoints -Mixed Contaminants	NC	NO	NC	NO	NC	NO
MISCELLANEOUS PARAMETERS (mg/kg)																	
Diesel Range Organics	38/89	52.5	NTCSS10200-D	6/30/97	NC	NC	NO	NC	NC	NC	NC	NC	NO	NC	NO	NC	NO
Gasoline Range Organics	1/89	0.128	NTCSSH3500	6/28/97	NC	NC	NO	NC	NC	NC	NC	NC	NO	NC	NO	NC	NO

Notes

Shaded screening criteria indicate that the corresponding maximum concentration exceeded the criteria

*** Leachability values may be derived using the Synthetic Precipitation Leaching Procedure (SPLP) to calculate site-specific SCTLs or may be determined using Toxicity Characteristic Leaching Procedure if oily wastes are present

concentrations included in the BaPEq calculation

BaPEq = benzo(a)pyrene equivalent

C = Carcinogen

mg/kg = milligrams per kilogram

N = Noncarcinogen

NC = no criteria

pCi/g = picocuries per gram

TPH = Total Petroleum Hydrocarbons

1 Chemical of interest, any chemical detected in surface soil

2 Frequency of detection, duplicates included but not counted

3 Florida Department of Environmental Protection soil cleanup target level for an industrial setting, F.A.C. Chapter 62-777, Table 2, February 2005

4 Soil cleanup target level for direct contact in an industrial setting divided by 10 to account for multiple chemical effects of carcinogens and noncarcinogens

5 Florida Department of Environmental Protection soil cleanup target level for leaching to groundwater, F.A.C. Chapter 62-777, Table 2, February 2005

6 Florida Department of Environmental Protection soil cleanup target level for leaching to freshwater surface water, F.A.C. Chapter 62-777, Table 2, February 2005

7 The minimum of the adjusted SCTL and the leaching SCTLs

8 Naval Training Center McCoy Annex data set surface soil background screening value (ABB-ES, 1995)

TABLE 2-1

IDENTIFICATION OF COPCs IN EXPOSED SURFACE SOIL
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI [1]	FOD [2]	Maximum Concentration or Activity			SCTL Industrial [3]	Adjusted SCTL Industrial [4]	Exceeds Adjusted SCTL	SCTL Leach I [5]	SCTL Leach II [6]	Minimum SCTL [7]	Target System/Organ	NTC BGSV [8]	FDEP COPC [9]	EPA RSL (Industrial)[10]	EPA COPC (Industrial)	EPA RSL (Residential)[11]	EPA COPC (Residential)
		Result	Location	Date													

9 Chemical of potential concern, identified if the maximum detected concentration exceeds the greater of the minimum SCTL and the NTC surface soil BGSV

10 Environmental Protection Agency Industrial Regional Screening Level.
Each noncarcinogenic value (denoted with a "N" flag) is the screening level divided by 10 to correspond to a target hazard quotient of 0.1. Each carcinogenic value (denoted with a "C" flag) represents an incremental cancer risk of 1.0E-06 (EPA, April, 2009)

11 Environmental Protection Agency Residential Regional Screening Level. Each noncarcinogenic value (denoted with a "N" flag) is the screening level divided by 10 to correspond to a target hazard quotient of 0.1.
Each carcinogenic value (denoted with a "C" flag) represents an incremental cancer risk of 1.0E-06 (EPA, April, 2009)

12 Not carried forward as a COPC because it is included in the calculation of BaPEq

13 Benzo(a)pyrene equivalents were calculated using 1/2 the value of non-detected results

14 Not selected as a COPC due to low frequency of detection (<5% of samples)

15 Pyrene used as a surrogate

16 Chlordane used as a surrogate

17 Endosulfan used as a surrogate

18 Hexavalent chromium criteria used for Florida screening and total chromium criteria used for EPA screening

19 Value is for mercury (elemental)

20 EPA Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Outdoor Worker Soil PRG. http://epa.prgs.ornl.gov/radionuclides/download/outw_soil_rad_prg_august_2010

21 EPA Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Residential Soil PRG. http://epa.prgs.ornl.gov/radionuclides/download/res_soil_rad_prg_august_2010

TABLE 2-2

SELECTION OF COCs IN EXPOSED SURFACE SOIL
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC [1]	FOD [2]	Maximum Concentration	EPC [3]	Target System/Organ	Cumulative Cancer or Target Organ/System Analysis		SCTL Industrial[6]	Adjusted SCTL Industrial[7]	SCTL Leach I[8]	SCTL Leach II[9]	NTC BGSV[10]	Florida PRG[11]	Exceeds Florida PRG	COC[12]
					Carcinogen[4]	Adjustment Factor[5]								
VOLATILES														
Acetone	12/42	51.4	10.5	Kidney -Liver -Neurological	NC	1	68000	NC	25	6.8	NC	6.8	YES	NO
SEMIVOLATILES														
BaPEq	13/99	1.7	0.28	Carcinogen	2.4	3	0.7	0.23	8	NC	NC	0.23	YES	NO
Fluoranthene	9/99	1.85	0.56	Blood -Kidney -Liver	NC	1	59000	NC	1200	1.3	NC	1.3	NO	NO
Pyrene	7/99	1.37	0.51	Kidney	NC	1	45000	NC	880	1.3	NC	1.3	NO	NO
PESTICIDES														
4,4'-DDE	20/99	0.041	0.0043	Carcinogen	0.003	3	15	5.0	18	0.04	NC	0.04	NO	NO
METALS														
Arsenic	65/99	4.8	1.84	Carcinogen -Cardiovascular -Skin	0.4	3	12	4	NC	NC	1.9	4	NO	NO
Mercury	7/99	0.22	0.1	Neurological	NC	1	17	NC	2.1	0.01	0.05	0.05	YES	NO
Selenium	14/99	0.56	0.49	Hair Loss -Neurological -Skin	NC	1	11000	NC	5.2	0.5	1.1	1.1	NO	NO
Silver	11/99	2.4	0.4	Skin	NC	1	8200	NC	17	0.01	NC	0.01	YES	NO
				Sum	2.8									

Notes

All concentrations in milligrams per kilogram (mg/kg)

BaPEq = benzo(a)pyrene equivalent

NC = no criteria

1 Contaminant of potential concern, identified in Table 2-1

2 Frequency of detection, duplicates included but not counted

3 Exposure point concentration (EPC) calculated as the 95% upper confidence limit using the FL UCL calculator

4 Ratio of the maximum concentration to the SCTL for each COPC- a ratio or sum of ratios greater than 1.0 for carcinogens or for any organ/system indicates an exceedance of FDEP guidance and requires adjustment of the SCTL

5 The number of carcinogenic COPCs or for non-carcinogens, the number of COPCs which affect the same organ for COPCs with a ratio or sum of ratios greater than 1.0

6 Florida Department of Environmental Protection soil cleanup target level for an industrial setting, F.A.C. Chapter 62-777, Table 2, February 2005

7 Florida Department of Environmental Protection soil cleanup target level for direct contact divided by the adjustment factor

8 Florida Department of Environmental Protection soil cleanup target level for leaching to groundwater, F.A.C. Chapter 62-777, Table 2, February 2005

9 Florida Department of Environmental Protection soil cleanup target level for leaching to surface water, F.A.C. Chapter 62-777, Table 2, February 2005

10 Naval Training Center McCoy Annex data set surface soil background screening value (ABB-ES, 1995)

11 Preliminary remediation goal, the greater of the minimum SCTL and the NTC BGSV

12 Contaminant of concern, selection is discussed in Section 2.3.3.2 of this document

TABLE 2-3

RESIDENTIAL RISK CHARACTERIZATION OF EXPOSED SURFACE SOIL
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[1]	Units	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
		EPC [2]	EPA RSL [3]	Estimated ILCR	Primary Target Organs	EPA RSL[3]	Estimated HQ
Arsenic	mg/kg	1.84	0.39	4.7E-06	Carcinogen -Cardiovascular -Skin	22	0.08
Benzo(a)pyrene equivalent	mg/kg	0.28	0.015	1.9E-05	Carcinogen	NA	NA
Lead-210 [4]	pCi/g	2.3	0.335	6.9E-06	Carcinogen	NA	NA
			Total ILCR	3.0E-05		**HI[5]**	0.08

Target Organ HIs

Cardiovascular HI =	0.08
Skin HI =	0.08

Notes
mg/kg = milligrams per kilogram
NA = not applicable
pCi/g = picocuries per gram
1 Contaminant of potential concern, identified in Table 2-1
2 Exposure point concentration (EPC) calculated as the 95% upper confidence limit using the FL UCL calculator
3 Environmental Protection Agency Residential Regional Screening Level, April 2009
4 EPA Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Residential Soil PRG. http://epa.prgs.ornl.gov/radionuclides/download/res_soil_rad_prg_august_2010
5 Hazard Index, the sum of HQs

TABLE 2-4

INDUSTRIAL RISK CHARACTERIZATION OF EXPOSED SURFACE SOIL
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[1]	Units	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
		EPC [2]	EPA RSL [3]	Estimated ILCR	Primary Target Organs	EPA RSL[3]	Estimated HQ
Arsenic	mg/kg	1.84	1.6	1.2E-06	Carcinogen -Cardiovascular -Skin	260	0.01
Benzo(a)pyrene equivalent	mg/kg	0.28	0.21	1.3E-06	Carcinogen	NA	NA
			Total ILCR	2.5E-06		**HI[4]**	0.01

Target Organ HIs

Cardiovascular HI =	0.01
Skin HI =	0.01

Notes
mg/kg = milligrams per kilogram
NA = not applicable
1 Contaminant of potential concern, identified in Table 2-1
2 Exposure point concentration (EPC) calculated as the 95% upper confidence limit using the FL UCL calculator
3 Environmental Protection Agency Industrial Regional Screening Level, April 2009
4 Hazard Index, the sum of HQs

TABLE 2-5

LOCATIONS OF SURFACE WATER AND SEDIMENT SAMPLES
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Sediment (1997-1999)

Canal Locations
SD05
SD08
SD10
SD12
SD14
SD15
SD18
SD19
SD20
SD21
SD22
Pond Locations
SD01
SD02
SD03
SD04
SD06
SD07
SD09
SD11
SD13
SD16
SD17
Upgradient Locations
SD23
SD24
SD25
SD26
SD27
SD28

Surface Water

Canal Locations (2007-2009)
SW29
SW30
SW31
SW32
SW33
SW34
SW35
SW36
Pond Locations (1997-1999)
SW01
SW02
SW03
SW04
SW06
SW07
SW09
SW11
SW13
SW16
SW17
Upgradient Locations (1997-1999)
SW23
SW24
SW25
SW26
SW27
SW28

SURFACE WATER IN CANALS AND PONDS

TABLE 2-6

IDENTIFICATION OF COPCs, SURFACE WATER IN CANALS[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI[2]	FOD[3]	Maximum Concentration			FSW CTL[4]	CTL Basis[5]	Target System/Organ	Adjusted FSW CTL[6]	FDEP COPC[7]	EPA RSL (tap water)[8]	EPA COPC[9]
		Sample Result	Sample Location	Sample Date							
VOLATILES (µg/L)											
1,4-Dichlorobenzene	3/86	0.62 I	OLD-OU2-SW32	01/16/2009	3	Human Health	Liver	**0.3**	NO[10]	4.3 C	NO[10]
2-Hexanone	1/110	10.5 J	OLD-OU2-SW34	10/02/2008	NC	NC	NC	NC	NO	NC	NO
4-Isopropyltoluene	2/86	0.36	OLD-OU2-SW32	09/20/2007	NC	NC	NC	NC	NO	NC	NO
4-Methyl-2-pentanone	1/110	1.48	OLD-OU2-SW33	03/02/2007	23000	Toxicity Criteria	Kidney - Liver	23000	NO	2000 N	NO
Acetone	14/110	17.9 I	OLD-OU2-SW34	10/02/2008	1700	Toxicity Criteria	Kidney - Liver - Neurological	1700	NO	22000 N	NO
Benzene	1/110	1.57	OLD-OU2-SW32	10/18/2007	71.28	62-302	Blood	71.28	NO	4.1 C	NO
Bromodichloromethane	3/110	0.69 J	OLD-OU2-SW31	03/02/2007	22	62-302	Kidney	22	NO	1.2 C	NO
Carbon disulfide	9/110	34.2 J	OLD-OU2-SW33	10/02/2008	110	Toxicity Criteria	Developmental - Neurological	110	NO	1000 N	NO
Chlorobenzene	7/110	1.28	OLD-OU2-SW32	10/18/2007	17	Toxicity Criteria	Liver	17	NO	91 N	NO
Chloroform	7/110	5.21	OLD-OU2-SW31	03/02/2007	470.8	62-302	Liver	470.8	NO	19 C	NO
Chloromethane	1/110	0.63 I	OLD-OU2-SW34	10/02/2008	470.8	62-302	Neurological	470.8	NO	190 N	NO
cis-1,2-Dichloroethene	22/110	33.7	OLD-OU2-SW35	08/09/2007	NC	NC	NC	NC	NO	370 N	NO
Tetrachloroethene	2/110	0.64 I	OLD-OU2-SW35	08/09/2007	8.85	62-302	Liver	8.85	NO	1.1 C	NO
Toluene	17/110	27	OLD-OU2-SW32	01/31/2008	480	Toxicity Criteria	Kidney - Liver - Neurological	480	NO	2300 N	NO
Trichloroethene	19/110	44.8	OLD-OU2-SW35	08/09/2007	80.7	62-302	None Specified	80.7	NO	**17** C	YES
Vinyl chloride	3/110	1.83	OLD-OU2-SW35	01/31/2008	2.4	Human Health	Liver	**0.24**	NO[10]	**0.16** C	NO[10]
INORGANICS (µg/L)											
Iron	48/48	163000	OLD-OU2-SW34	10/02/2008	**1000**	62-302	Gastrointestinal	**1000**	YES	**26000** N	YES
Manganese	15/16	105	OLD-OU2-SW32	03/18/2008	NC	NC	NC	NC	NO	880 N	NO

Notes

Shaded screening criteria indicate that the corresponding maximum concentration exceeded the criteria

62-302 = As provided in Chapter 62-302, F.A.C.

C = carcinogen

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

J = estimated

N = noncarcinogen

NC = no criteria

µg/L = micrograms per liter

1 Based on data from January 2007 through March 2009

2 Chemical of interest, any chemical detected in a canal surface water sample

3 Frequency of detection, duplicate results included but not counted

4 Freshwater surface water cleanup target level, F.A.C. Chapter 62-777, Table 1, February 2005

5 Cleanup target level basis, F.A.C. Chapter 62-777, Table 1

6 Adjusted Screening Criteria, only human health based screening criteria for surface water were adjusted by dividing by 10 to account for multiple chemical effect for carcinogens and noncarcinogens

7 Florida Department of Environmental Protection contaminant of potential concern, selected if the maximum concentration exceeds the Adjusted FSW CTL

8 Environmental Protection Agency Regional Screening Level for exposures to tap water, risk based tapwater screening level multiplied by a factor of 10 to account for anticipated reduced exposure to surface water, then non-carcinogenic risk based tap water screening levels are divided by 10 to correspond to a target hazard quotient of 0.1 for noncarcinogens (denoted with an "N" flag)

9 Environmental Protection Agency contaminant of potential concern, selected if the maximum concentration exceeds the tap water Regional Screening Level

10 Chemical not selected due to low frequency of detection (i.e., <5% of samples).

TABLE 2-7

IDENTIFICATION OF COPCs, SURFACE WATER IN PONDS[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI [2]	FOD [3]	Maximum Concentration			FSW CTL [4]	CTL Basis [5]	Target System/Organ	Adjusted FSW CTL [6]	FDEP COPC [7]	EPA RSL (tap water) [8]	EPA COPC[9]
		Sample Result	Sample Location	Sample Date							
VOLATILES (µg/L)											
Toluene	1/10	16.3	NTCSW01100	8/25/1998	480	Toxicity Criteria	Kidney -Liver -Neurological	480	NO	2300 N	NO
INORGANICS (µg/L)											
Aluminum	6/11	5700	NTCSW00900	7/2/1997	**13**	Toxicity Criteria	Body Weight	**13**	YES	37000 N	NO
Arsenic	4/11	7	NTCSW00900	7/2/1997	50	62-302	Carcinogen -Cardiovascular -Skin	50	NO	**0.45** C	YES
Barium	10/11	67.4	NTCSW01300	8/25/1998	NC	NC	NC	NC	NO	7300 N	NO
Calcium	11/11	74500	NTCSW01700	8/25/1998	NC	NC	NC	NC	NO	NC	NO
Chromium[10]	4/11	11.2	NTCSW00900	7/2/1997	**11**	62-302	Carcinogen-Respiratory	**11**	YES	110 N[10]	NO
Copper	8/11	13.8	NTCSW00900	7/2/1997	**9.53**	f,g	Gastrointestinal	**9.53**	YES	1500 N	NO
Iron	10/11	7090	NTCSW01100	8/25/1998	**1000**	62-302	Blood -Gastrointestinal	**1000**	YES	26000 N	NO
Lead	3/11	16.6	NTCSW00600	7/2/1997	**2.31**	f,g	Neurological	**2.31**	YES	**15** N	YES
Magnesium	11/11	12600	NTCSW01700	8/25/1998	NC	NC	NC	NC	NO	NC	NO
Manganese	10/11	159	NTCSW00103	8/11/1999	NC	NC	NC	NC	NO	880 N	NO
Mercury	3/11	0.15	NTCSW01100	8/25/1998	**0.012**	62-302	Neurological	**0.012**	YES	11 N	NO
Nickel	2/11	3.4	NTCSW00103	8/11/1999	127.4	f,g	Body Weight	127.4	NO	730 N	NO
Potassium	8/11	18800	NTCSW01700	8/25/1998	NC	NC	NC	NC	NO	NC	NO
Sodium	11/11	30300	NTCSW01300	8/25/1998	NC	NC	NC	NC	NO	NC	NO
Vanadium	4/11	15	NTCSW00900	7/2/1997	NC	NC	NC	NC	NO	180 N	NO
Zinc	7/11	565	NTCSW01600	8/25/1998	**85.6**	f,g	Blood	**85.6**	YES	11000 N	NO
RADIONUCLIDES (pCi/L)											
Gross alpha[11]	5/11	18.1	NTCSW00103	8/11/1999	**15**	62-302	NC	**15**	YES	**15**[11]	YES
Gross beta	8/11	18.5	NTCSW01700	8/25/1998	NC	NC	NC	NC	NO	NC	NO

Notes

Shaded screening criteria indicate that the corresponding maximum concentration exceeded the criteria
62-302 = As provided in Chapter 62-302, F.A.C.
C = carcinogen
f = hardness-dependent per Chapter 62-302, F.A.C.
g = criteria for these metals are measured as total recoverable metal
N = noncarcinogen
NC = no criteria
µg/L = micrograms per liter
pCi/L = picocuries per liter
1 Based on RI samples collected between 1997 and 1999
2 Chemical of interest, any chemical detected in at least one sample
3 Frequency of detection, duplicate results included but not counted
4 Freshwater surface water cleanup target level, F.A.C. Chapter 62-777, Table 1, February 2005
5 Cleanup target level basis, F.A.C. Chapter 62-777, Table 1
6 Adjusted Screening Criteria, only human health based screening criteria for surface water were adjusted by dividing by 10 to account for multiple chemical effect for carcinogens and noncarcinogens
7 Florida Department of Environmental Protection contaminant of potential concern, selected if the maximum concentration exceeds the Adjusted FSW CTL
8 April 2009 Environmental Protection Agency Regional Screening Level for exposure to tap water, multiplied by a factor of 10 for anticipated reduced exposure to surface water,
then non-carcinogenic risk based tap water screening levels are divided by 10 to correspond to a target hazard quotient of 0.1 for noncarcinogens (denoted with an "N" flag)
9 Environmental Protection Agency contaminant of potential concern, selected if the maximum concentration exceeds the tap water Regional Screening Level
10 Criteria used are for hexavalent chromium
11 Radionuclide Drinking Water MCLs, Soil Screening Guidance for Radionuclides: User's Guide, October 2000

TABLE 2-8

SELECTION OF COCs, SURFACE WATER IN CANALS[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC [2]	FOD[3]	Maximum Concentration	FSW CTL [4]	CTL Basis [5]	Target System/Organ	Adjusted FSW CTL [6]	PRG [7]	Exceeds PRG	COC[8]
INORGANICS (µg/L)									
Iron	48/48	163000	1000	62-302	Gastrointestinal	NA	1000	YES	NO

Notes
62-302 = as provided in Chapter 62-302, F.A.C
NA = not applicable
µg/L = micrograms per liter
1 Based on data from January 2007 through March 2009
2 Contaminant of potential concern, identified in Table 2-6
3 Frequency of detection, duplicate results included by not counted
4 Cleanup target level for exposure to freshwater surface water, per F.A.C. Chapter 62-777, Table 1, dated February 2005
5 Cleanup target level basis, F.A.C. Chapter 62-777, Table 1
6 FSW CTL, for CTLs based on human health divided by 10 to account for multiple chemical effects for carcinogens and noncarcinogens
7 Preliminary remediation goal, the FSW CTL
8 Contaminant of concern, selection is discussed in Section 2.3.4.2 of this document

TABLE 2-9

SELECTION OF COCs, SURFACE WATER IN PONDS[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC [2]	FOD [3]	Maximum Concentration	FSW CTL [4]	CTL Basis[5]	Target System/Organ	Adjusted FSW CTL[6]	Florida PRG [7]	Exceeds Florida PRG	COC [8]
INORGANICS (µg/L)									
Aluminum	6/11	5700	13	Toxicity Criteria	Body Weight	NA	13	YES	NO
Chromium [9]	4/11	11.2	11	62-302	Carcinogen-Respiratory	NA	11	YES	NO
Copper	8/11	13.8	9.53	f,g	Gastrointestinal	NA	9.53	YES	NO
Iron	10/11	7090	1000	62-302	Blood -Gastrointestinal	NA	1000	YES	NO
Lead	3/11	16.6	2.31	f,g	Neurological	NA	2.31	YES	NO
Mercury	3/11	0.15	0.012	62-302	Neurological	NA	0.012	YES	NO
Zinc	7/11	565	85.6	f,g	Blood	NA	85.6	YES	NO
RADIONUCLIDES (pCi/L)									
Gross alpha	5/11	18.1	15	62-302	NC	NA	15	YES	NO

Notes
62-302 = As provided in Chapter 62-302, F.A.C.
f = hardness-dependent per Chapter 62-302, F.A.C.
g = criteria for these metals are measured as total recoverable metal
NA = not applicable
NC = no criteria
µg/L = micrograms per liter
pCi/L = picocuries per liter
1 Based on RI samples collected between 1997 and 1999
2 Contaminant of potential concern, identified in Table 2-7
3 Frequency of detection, duplicate results included but not counted
4 Florida Department of Environmental Protection cleanup target level for freshwater surface water, F.A.C. Chapter 62-777, Table 1, February 2005.
5 Cleanup target level basis, F.A.C. Chapter 62-777, Table 1
6 FSW CTL, for CTLs based on human health divided by 10 to account for multiple chemical effects for carcinogens and noncarcinogens
7 Preliminary remediation goal, the FSW CTL
8 COC selection is discussed in Section 2.3.4.2 of this document
9 Criteria used are for hexavalent chromium

TABLE 2-10

RESIDENTIAL RISK CHARACTERIZATION OF SURFACE WATER IN CANALS[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[2]	Units	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
		Maximum	EPA RSL[3]	Estimated ILCR	Primary Target Organs	EPA RSL[3]	Estimated HQ
Trichloroethene	µg/L	44.8	17	2.6E-06	None Specified	NA	NA
Iron	µg/L	163000	NA	NA	Gastrointestinal	260000	0.63
			Total ILCR =	2.6E-06		**HI[4]**	0.63

Target Organ HIs

Gastrointestinal HI =	0.63

Notes
µg/L = micrograms per liter
NA = not applicable
1 Based on data from January 2007 through March 2009
2 Contaminant of potential concern, identified in Table 2-6
3 April 2009 Environmental Protection Agency Residential Screening Levels for tapwater, multiplied by a factor of 10 for anticipated reduced exposure to surface water
4 Hazard Index, sum of HQs

TABLE 2-11

RESIDENTIAL RISK CHARACTERIZATION OF SURFACE WATER IN PONDS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[1]	Units	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
		Maximum Concentration	EPA RSL[2]	Estimated ILCR	Primary Target Organs	EPA RSL[2]	Estimated HQ
Arsenic	µg/L	7	0.45	1.6E-05	Carcinogen -Cardiovascular -Skin	110	0.06
Lead	µg/L	16.6	NA	--	Neurological	150	0.11
Gross alpha	pCi/L	18.1	NA	--	NA	150 [3]	0.12
			Total ILCR	1.6E-05		**HI[4]**	0.3

Target Organ HIs

Carcinogen HI =	0.06
Cardiovascular HI =	0.06
Skin HI =	0.06
Neurological HI =	0.11

Notes
ug/L = micrograms per liter
pCi/L = picocuries per liter
NA = not applicable
1 Contaminant of potential concern, identified in Table 2-7
2 April 2009 Environmental Protection Agency Residential Regional Screening Level for tapwater multiplied by a factor of 10 for anticipated reduced exposure to surface water
3 Radionuclide Drinking Water MCLs, Soil Screening Guidance for Radionuclides: User's Guide, October 2000
4 Hazard Index, the sum of HQs

SEDIMENT IN CANALS AND PONDS

TABLE 2-12

IDENTIFICATION OF COPCs, SEDIMENT IN CANALS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI[1]	FOD[2]	Maximum Concentration			SCTL Industrial[3]	Adjusted SCTL Industrial[4]	Exceeds Adjusted SCTL	SCTL Leach II[5]	Minimum SCTL[6]	Target System/Organ	NTC BGSV[7]	FDEP COPC[8]	EPA RSL (Industrial)[9]	EPA COPC (Industrial)	EPA RSL (Residential)[10]	EPA COPC (Residential)
		Result	Location	Date												
INORGANICS (mg/kg)																
Aluminum	11/11	6490	NTCSD01803	8/12/1999	NC	NC	NO	***	NC	Body Weight	4870	NO	990000 N	NO	77000 N	NO
Antimony	1/11	0.3	NTCSD01503	8/12/1999	370	37	NO	3900	37	Blood -Mortality	NC	NO	410 N	NO	31 N	NO
Arsenic	3/11	0.8	NTCSD01803	8/12/1999	12	1.2	NO	***	1.2	Carcinogen -Cardiovascular -Skin	1.9	NO	16 C	NO	3.9 C	NO
Barium	11/11	30.4	NTCSD02003	8/12/1999	130000	13000	NO	NC	13000	Cardiovascular	21.6	NO	190000 N	NO	15000 N	NO
Beryllium	1/11	0.81	NTCSD01403	8/11/1999	1400	140	NO	2.1	2.1	Carcinogen -Gastrointestinal -Respiratory	0.46	NO	2000 N	NO	160 N	NO
Calcium	6/11	2820	NTCSD01003	8/11/1999	NC	NC	NO	NC	NC	NC	NC	Nutrient	NC	Nutrient	NC	Nutrient
Chromium[11]	7/11	8.6	NTCSD01403	8/11/1999	470	47	NO	**4.2**	**4.2**	Carcinogen - Respiratory	7.7	**YES**	14000 C[11]	NO	2800 C[11]	NO
Copper	7/11	8.3	NTCSD01903	8/11/1999	89000	8900	NO	NC	8900	None Specified	2.6	NO	41000 N	NO	3100 N	NO
Iron	11/11	1200	NTCSD01403	8/11/1999	NC	NC	NO	***	NC	Blood -Gastrointestinal	843	NO	720000 N	NO	55000 N	NO
Lead	11/11	10.7	NTCSD01003	8/11/1999	1400	140	NO	NC	140	Neurological	21.3	NO	800 N	NO	400 N	NO
Magnesium	5/11	228	NTCSD01403	8/11/1999	NC	NC	NO	NC	NC	NC	381	Nutrient	NC	Nutrient	NC	Nutrient
Manganese	4/11	8.9	NTCSD01003	8/11/1999	43000	4300	NO	NC	4300	Neurological	10.8	NO	23000 N	NO	1800 N	NO
Mercury[12]	2/11	0.06	NTCSD01803	8/12/1999	17	1.7	NO	**0.01**	**0.01**	NC	0.05	**YES**	24 N[12]	NO	4.3 N[12]	NO
Nickel	1/11	3.6	NTCSD01403	8/11/1999	35000	3500	NO	NC	3500	Body Weight	NC	NO	20000 N	NO	1500 N	NO
Potassium	1/11	71.9	NTCSD02200	8/26/1998	NC	NC	NO	NC	NC	NC	210	Nutrient	NC	Nutrient	NC	Nutrient
Selenium	2/11	0.87	NTCSD01903	8/11/1999	11000	1100	NO	**0.5**	**0.5**	Hair Loss -Neurological -Skin	1.1	NO	5100 N	NO	390 N	NO
Sodium	1/11	44.9	NTCSD02200	8/26/1998	NC	NC	NO	NC	NC	NC	NC	Nutrient	NC	Nutrient	NC	Nutrient
Vanadium	10/11	27.1	NTCSD01003	8/11/1999	10000	1000	NO	NC	1000	None Specified	4.9	NO	5200 N	NO	390 N	NO
Zinc	6/11	17.9	NTCSD01003	8/11/1999	630000	63000	NO	NC	63000	Blood	4.6	NO	310000 N	NO	23000 N	NO
PESTICIDES/PCBs (mg/kg)																
4,4'-DDE	2/11	0.0082	NTCSD00503	8/11/1999	15	1.5	NO	0.04	0.04	Carcinogen	NC	NO	51 C	NO	14 C	NO
alpha-Chlordane[13]	1/11	0.0011	NTCSD01503	8/12/1999	14	1.4	NO	0.003	0.003	Carcinogen -Liver	NC	NO	65 C[13]	NO	16 C[13]	NO
Endosulfan I[14]	2/11	0.0021	NTCSD00803	8/12/1999	7600	760	NO	0.005	0.005	Body Weight -Cardiovascular -Kidney	NC	NO	3700 N[14]	NO	370 N[14]	NO
gamma-Chlordane[13]	2/11	0.0054	NTCSD01003	8/11/1999	14	1.4	NO	**0.003**	**0.003**	Carcinogen -Liver	NC	**YES**	65 C[13]	NO	16 C[13]	NO
RADIOLOGICAL (pCi/g)																
Actinium-228	1/7	1.2	NTCSD02200	8/26/1998	NC	NC	NO	NC	NC	NC	NC	NO	11800[15]	NO	7320[16]	NO
Gross alpha	9/11	15	NTCSD01403	8/11/1999	NC	NC	NO	NC	NC	NC	NC	NO	NC	NO	NC	NO
Gross beta	6/11	5.7	NTCSD01403	8/11/1999	NC	NC	NO	NC	NC	NC	NC	NO	NC	NO	NC	NO
Lead-212	1/7	0.4	NTCSD02200	8/26/1998	NC	NC	NO	NC	NC	NC	NC	NO	60700[15]	NO	36400[16]	NO
Lead-214	1/7	0.9	NTCSD02200	8/26/1998	NC	NC	NO	NC	NC	NC	NC	NO	748000[15]	NO	463000[16]	NO
Thallium-208	1/7	0.5	NTCSD02200	8/26/1998	NC	NC	NO	NC	NC	NC	NC	NO	365000[15]	NO	226000[16]	NO

Notes

*** Leachability values may be derived using the Synthetic Precipitation Leaching Procedure (SPLP) to calculate site-specific SCTLs or may be determined using Toxicity Characteristic Leaching Procedure if oily wastes are present

Shaded screening criteria indicate that the corresponding maximum concentration exceeded the criteria.

C = Carcinogen

mg/kg = milligrams per kilogram

N = Noncarcinogen

NC = no criteria

pCi/g = picocuries per gram

1 Chemical of interest, any chemical detected at least once in sediment

2 Frequency of detection, duplicates included but not counted

3 Florida Department of Environmental Protection soil cleanup target level for direct contact with soil in an industrial setting, F.A.C. Chapter 62-777, Table 2, February 2005

4 Florida Department of Environmental Protection soil cleanup target level for direct contact with soil in an industrial setting divided by 10 to account for multiple chemical effects for carcinogens and noncarcinogens

5 Florida Department of Environmental Protection soil cleanup targel level for leaching to freshwater surface water, F.A.C. Chapter 62-777, Table 2, February 2005

6 Initial screening criteria, the lower of the adjusted direct contact SCTL and the leaching to freshwater surface water soil cleanup target level

7 Naval Training Center McCoy Annex data set surface soil background screening value (ABB-ES, 1995)

8 Florida Department of Environmental Protection contaminant of potential concern, any chemical of interest with a maximum concentration that exceeds the greater of the minimum soil cleanup target level or the NTC surface soil BGSV

9 Environmental Protection Agency Industrial Regional Screening Level, the risk based soil screening level multiplied by a factor of 10 for anticipated reduced exposure to sediment [noncarcinogenic values (denoted with an "N" flag) are then divided by 10 to correspond to a target hazard quotient of 0.1]. Carcinogenic values represent an incremental cancer risk of 1.0E-06 (carcinogens denoted with a "C" flag) (EPA, April, 2009)

10 Environmental Protection Agency Residential Regional Screening Level, the risk based soil screening level multiplied by a factor of 10 for anticipated reduced exposure to sediment [noncarcinogenic values (denoted with a "N" flag) are divided by 10 to correspond to a target hazard quotient of 0.1]. Carcinogenic values represent an incremental cancer risk of 1.0E-06 (carcinogens denoted with a "C" flag) (EPA, April 2009)

11 Hexavalent chromium criteria used for Florida screening and total chromium criteria used for EPA screening

12 Criteria are for elemental mercury

13 Criteria for chlordane used for alpha- and gamma-chlordane

14 Criteria are for Endosulfan

15 Environmental Protection Agency Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Outdoor Worker Soil PRG. Value represents the risk based soil screening level multiplied by a factor of 10 for anticipated reduced exposure to sediment http://epa.prgs.ornl.gov/radionuclides/download/outw_soil_rad_prg_august_2010

16 Environmental Protection Agency Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Residential Soil PRG. Value represents the risk based soil screening level multiplied by a factor of 10 for anticipated reduced exposure to sediment. http://epa.prgs.ornl.gov/radionuclides/download/res_soil_rad_prg_august_2010

TABLE 2-13

IDENTIFICATION OF COPCs, SEDIMENT IN PONDS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI [1]	FOD [2]	Maximum Concentration			SCTL Industrial [3]	Adjusted SCTL Industrial [4]	Exceeds Adjusted SCTL	SCTL Leach I [5]	SCTL Leach II [5]	Minimum SCTL [6]	Target System/Organ	NTC BGSV[7]	FDEP COPC[8]	EPA RSL (Industrial)[9]	EPA COPC (Industrial)	EPA RSL (Residential)[10]	EPA COPC (Residential)
		Result	Location	Date													
VOLATILES (mg/kg)																	
Carbon disulfide	1/10	0.0738	NTCSD01100	8/25/1998	1500	150	NO	5.6	0.8	0.8	Developmental -Neurological	NC	NO	3000 N	NO	670 N	NO
Toluene	1/10	0.0038	NTCSD01100	8/25/1998	60000	6000	NO	0.5	5.6	0.5	Kidney -Liver -Neurological	NC	NO	46000 N	NO	5000 N	NO
PESTICIDES/PCBs (mg/kg)																	
4,4'-DDD	1/11	0.0045	NTCSD01600	8/25/1998	22	2.2	NO	5.8	0.01	0.01	Carcinogen	NC	NO	72 C	NO	20 C	NO
4,4'-DDE	1/11	0.0035	NTCSD01700	8/25/1998	15	1.5	NO	18	0.04	0.04	Carcinogen	NC	NO	51 C	NO	14 C	NO
Endosulfan I	1/11	0.0026	NTCSD00103	8/11/1999	7600	760	NO	3.8	0.005	0.005	Body Weight -Cardiovascular -Kidney	NC	NO	3700 N	NO	370 N	NO
INORGANICS (mg/kg)																	
Aluminum	11/11	11400	NTCSD00103	8/11/1999	NC	NC	NC	NC	NC	NC	NC	4870	NO	990000 N	NO	77000 N	NO
Arsenic	4/11	5.3	NTCSD00103	8/11/1999	12	**1.2**	YES	NC	NC	**1.2**	Carcinogen -Cardiovascular -Skin	1.9	YES	16 C	NO	**3.9** C	YES
Barium	11/11	52.2	NTCSD00103	8/11/1999	130000	13000	NO	1600	NC	1600	Cardiovascular	21.6	NO	190000 N	NO	15000 N	NO
Calcium	10/11	4820	NTCSD00103	8/11/1999	NC	NC	NC	NC	NC	NC	NC	NC	NO	NC	NO	NC	NO
Chromium [11]	10/11	18.9	NTCSD00103	8/11/1999	470	47	NO	NC	**4.2**	**4.2**	Carcinogen -Respiratory	7.7	YES	14000 C[11]	NO	230 N[11]	NO
Cobalt	1/11	0.29	NTCSD00900	7/2/1997	42000	4200	NO	NC	NC	4200	Cardiovascular -Immunological -Neurological-Reproductive	NC	NO	300 N	NO	23 N	NO
Copper	9/11	25.9	NTCSD00103	8/11/1999	89000	8900	NO	NC	NC	8900	None Specified	2.6	NO	41000 N	NO	3100 N	NO
Iron	11/11	5130	NTCSD00103	8/11/1999	NC	NC	NO	NC	NC	NC	Blood -Gastrointestinal	843	NO	720000 N	NO	55000 N	NO
Lead	10/11	33.2	NTCSD00103	8/11/1999	1400	140	NO	NC	NC	140	Neurological	21.3	NO	800 N	NO	400 N	NO
Magnesium	4/11	214	NTCSD00103	8/11/1999	NC	NC	NC	NC	NC	NC	NC	381	NO	NC	NO	NC	NO
Manganese	6/11	37.6	NTCSD00103	8/11/1999	43000	4300	NO	NC	NC	4300	Neurological	10.8	NO	23000 N	NO	1800 N	NO
Mercury	2/11	0.10	NTCSD01700	8/25/1998	17	1.7	NO	2.1	**0.01**	**0.01**	Neurological	0.05	YES	310 N	NO	23 N	NO
Nickel	6/11	5.7	NTCSD00103	8/11/1999	35000	3500	NO	130	NC	130	Body Weight	NC	NO	20000 N	NO	1500 N	NO
Potassium	6/11	69.2	NTCSD00600	7/2/1997	NC	NC	NC	NC	NC	NC	NC	210	NO	NC	NO	NC	NO
Selenium	2/11	2	NTCSD00103	8/11/1999	11000	1100	NO	5.2	**0.5**	**0.5**	Hair Loss -Neurological -Skin	1.1	YES	5100 N	NO	390 N	NO
Sodium	3/11	412	NTCSD01700	8/25/1998	NC	NC	NC	NC	NC	NC	NC	NC	NO	NC	NO	NC	NO
Vanadium	11/11	19	NTCSD00103	8/11/1999	10000	1000	NO	980	NC	980	None Specified	4.9	NO	5200 N	NO	390 N	NO
Zinc	6/11	143	NTCSD00103	8/11/1999	630000	63000	NO	NC	NC	63000	Blood	4.6	NO	310000 N	NO	23000 N	NO
RADIOLOGICAL (pCi/g)																	
Actinium-228	3/5	1.2	NTCSD01700	8/25/1998	NC	NC	NO	NC	NC	NC	NC	NC	NO	1100 [12]	NO	679 [13]	NO
Bismuth-214	2/5	1.3	NTCSD01700	8/25/1998	NC	NC	NO	NC	NC	NC	NC	NC	NO	12900 [12]	NO	7950 [13]	NO
Gross alpha	11/11	7.7	NTCSD01100	8/25/1998	NC	NC	NO	NC	NC	NC	NC	NC	NO	NC [12]	NO	NC [13]	NO
Gross beta	5/11	3	NTCSD00103	8/11/1999	NC	NC	NO	NC	NC	NC	NC	NC	NO	NC [12]	NO	NC [13]	NO
Lead-212	4/5	0.6	NTCSD01700	8/25/1998	NC	NC	NO	NC	NC	NC	NC	NC	NO	5920 [12]	NO	3550 [13]	NO
Lead-214	4/5	1.7	NTCSD01700	8/25/1998	NC	NC	NO	NC	NC	NC	NC	NC	NO	72500 [12]	NO	44800 [13]	NO
Potassium-40	1/5	3.3	NTCSD01600-D	8/25/1998	NC	NC	NO	NC	NC	NC	NC	NC	NO	**0.295** [12]	**YES**	**0.116** [13]	YES
Thallium-208	2/5	0.5	NTCSD01300	8/25/1998	NC	NC	NO	NC	NC	NC	NC	NC	NO	37300 [12]	NO	23100 [13]	NO
TOTAL PETROLEUM HYDROCARBONS (mg/kg)																	
TPH (C8-C40)	1/4	21.6	NTCSD01700	8/25/1998	27000	NC	NO	340	340	340	NC	NC	NO	NC	NO	NC	NO

Notes

Shaded screening criteria indicate that the corresponding maximum concentration exceeded the criteria

mg/kg = milligrams per kilogram

NC = no criteria

pCi/g = picocuries per gram

1 Chemical of interest, any chemical detected at least once in sediment

2 Frequency of detection, duplicates included but not counted

3 Florida Department of Environmental Protection soil cleanup target level for direct contact with soil in an industrial setting, F.A.C. Chapter 62-777, Table 2, February 2005

4 Florida Department of Environmental Protection soil cleanup target level for direct contact with soil in an industrial setting divided by 10 to account for multiple chemical effects for carcinogens and noncarcinogens

5 Florida Department of Environmental Protection soil cleanup target level for leaching to groundwater (Leach I) or leaching to freshwater surface water (Leach II), F.A.C. Chapter 62-777, Table 2, February 2005

6 Initial screening criteria, the lowest of the adjusted direct contact soil cleanup target level and the leaching soil cleanup target levels

7 Naval Training Center McCoy Annex data set surface soil background screening value (ABB-ES, 1995)

8 Florida Department of Environmental Protection contaminant of potential concern, any chemical of interest with a maximum concentration that exceeds the greater of the minimum soil cleanup target level or the NTC surface soil BGSV are divided by 10 to correspond to a target hazard quotient of 0.1]. Carcinogenic values represent an incremental cancer risk of 1.0E-06 (carcinogens denoted with a "C" flag) (EPA, April 2009)

10 Environmental Protection Agency Residential Regional Screening Level, the risk based soil screening level multiplied by a factor of 10 for anticipated reduced exposure to sediment [noncarcinogenic values (denoted with a "N" flag) are divided by 10 to correspond to a target hazard quotient of 0.1]. Carcinogenic values represent an incremental cancer risk of 1.0E-06 (carcinogens denoted with a "C" flag) (EPA, April 2009)

11 Hexavalent chromium criteria used for Florida screening and total chromium criteria used for EPA screening

12 EPA Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Outdoor Worker Soil PRG. http://epa.prgs.ornl.gov/radionuclides/download/outw_soil_rad_prg_august_2010

13 EPA Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Residential Soil PRG. http://epa.prgs.ornl.gov/radionuclides/download/res_soil_rad_prg_august_2010

TABLE 2-14

SELECTION OF COCs, SEDIMENT IN CANALS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[1]	FOD[2]	Maximum Concentration	SCTL Industrial[3]	Target System/Organ	Cumulative Cancer or Target Organ/System Analysis		Adjusted SCTL Industrial[6]	SCTL Leach II[7]	NTC BGSV[8]	PRG[9]	Exceeds Florida PRG	COC[10]
					Carcinogen[4]	Adjustment Factor[5]						
PESTICIDES (mg/kg)												
gamma-Chlordane	2/11	0.0054	140	Carcinogen -Liver	NA	2	70	0.003	NA	0.003	YES	NO
INORGANICS (mg/kg)												
Chromium	7/11	8.6	4700	Carcinogen - Respiratory	NA	2	2350	4.2	7.7	7.7	YES	NO
Mercury	2/11	0.06	170	Neurological	NA	1	170	0.01	0.05	0.05	YES	NO

Notes

mg/kg = milligrams per kilogram

NA = Not Applicable

1 Contaminant of potential concern, identified in Table 2-12

2 Frequency of detection, duplicate results included but not counted

3 Soil Cleanup Target Level for direct contact with soil in an industrial setting, F.A.C. Chapter 62-777, Table 2, February 2005, multipled by a factor of 10 to account for reduced exposure to sediment

4 The ratio of the site maximum concentration to the soil cleanup target level or each COPC that exceed direct contact during initial screen (Table 2-13); a ratio or sum of ratios greater than 1 for carcinogens or for any organ/system indicates an exceedance of FDEP guidance

5 The the number of carcinogenic COPCs or noncarcinogenic COPCs that affect the same target organ/system

6 The soil cleanup target level or direct contact with soil in an industrial setting (mulitipled by a factor of 10 to account for reduced exposure to sediment) taken from F.A.C.6 2-777, Table 2, divided by the adjustment factor

7 Leach II - soil leaching to fresh surface water, per F.A.C. 62-777, Table 2.

8 Naval Training Center McCoy Annex data set surface soil background screening value (ABB-ES, 1995)

9 Preliminary remediation goal, the greater of the minimum soil cleanup target level (the adjusted soil cleanup target level for industrial soils or the soil cleanup target level for leaching to surface water) and the NTC BGSV

10 Contaminant of concern, selection is discussed in Section 2.3.5.2 of this document

TABLE 2-15

SELECTION OF COCs, SEDIMENT IN PONDS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[1]	FOD [2]	Maximum Concentration	SCTL Industrial[3]	Target System/Organ	Cumulative Cancer or Target Organ/System Analysis[4]				Adjusted SCTL Industrial [6]	SCTL Leach II [7]	NTC BGSV[8]	PRG[9]	Exceeds Florida PRG	COC [10]
					Carcinogen	Cardio- vascular	Skin	Adj. Factor [5]						
INORGANICS (mg/kg)														
Arsenic	4/11	5.3	120	Carcinogen -Cardiovascular - Skin	0.044	0.044	0.044	2	60	NC	1.9	60	NO	NO
Chromium	10/11	18.9	4700	Carcinogen	0.004	NA	NA	1	4700	4.2	7.7	7.7	YES	NO
Mercury	2/11	0.10	170	Neurological	NA	NA	NA	2	85	0.01	0.05	0.05	YES	NO
Selenium	2/11	2.0	110000	Hair Loss - Neurological -Skin	NA	NA	NA	2	55000	0.5	1.1	1.1	YES	NO

Notes
mg/kg = milligrams per kilogram
NA = not applicable
1 Contaminant of potential concern, identified in Table 2-13
2 Frequency of detection, duplicate results included but not counted
3 Soil Cleanup Target Level for direct contact with soil in an industrial setting (F.A.C. Chapter 62-777, Table 2, February 2005), multipled by a factor of 10 to account for reduced exposure to sediment
4 The ratio of the site maximum concentration to the soil cleanup target level for each COPC that exceed direct contact during initial screen (Table 2-13); a ratio or sum of ratios greater than 1 for carcinogens or for any organ/system indicates an exceedance of FDEP guidance
5 The the number of carcinogenic COPCs or noncarcinogenic COPCs that affect the same target organ/system
6 The soil cleanup target level for direct contact with soil in an industrial setting (mulitipled by a factor of 10 to account for reduced exposure to sediment) taken from F.A.C. 62-777, Table 2, divided by the adjustment factor
7 Leach II - soil leaching to fresh surface water, per F.A.C. 62-777, Table 2.
8 Naval Training Center McCoy Annex data set surface soil background screening value (ABB-ES, 1995)
9 Preliminary remediation goal, the greater of the minimum soil cleanup target level (the adjusted soil cleanup target level for industrial soils or the soil cleanup target level for leaching to surface water) and the NTC BGSV
10 Contaminant of concern, selection is discussed in Section 2.3.5.2 of this document

TABLE 2-16

RESIDENTIAL RISK CHARACTERIZATION OF SEDIMENT IN PONDS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[1]	Units	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
		Maximum Concentration	EPA RSL [2]	Estimated ILCR	Primary Target Organs	EPA RSL[2]	Estimated HQ
Arsenic	mg/kg	5.3	3.9	1.4E-06	Carcinogen -Cardiovascular -Skin	220	0.02
Potassium-40 [3]	pCi/g	3.3	2.71	1.2E-06	--	NA	NA
			Total ILCR	2.6E-06		**HI[4]**	0.02

Target Organ HIs

Cardiovascular HI =	0.02
Skin HI =	0.02

Notes
mg/kg = milligrams per kilogram
pCi/g = picocuries per gram
NA = not applicable
1 Contaminant of potential concern, identified in Table 2-14
2 Environmental Protection Agency Residential Regional Screening Levels, April 2009
3 Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Residential Soil PRG. http://epa.prgs.ornl.gov/radionuclides/download/rad_master_prg_table_mass.xls.
4 Hazard Index, the sum of HQs

TABLE 2-17

INDUSTRIAL RISK CHARACTERIZATION OF SEDIMENT IN PONDS
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[1]	Units	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
		Maximum Concentration	EPA RSL[2]	Estimated ILCR	Primary Target Organs	EPA RSL[2]	Estimated HQ
Potassium-40 [3]	pCi/g	3.3	271	1.2E-08	--	NA	NA
			Total ILCR	1.2E-08		HI[4]	--

Notes
pCi/g = picocuries per gram
NA = not applicable
1 Contaminant of potential concern, identified in Table 2-14
2 Environmental Protection Agency Residential Regional Screening Levels, April 2009
3 Radionuclide Toxicity and Preliminary Remediation Goals for Superfund. Residential Soil PRG. http://epa.prgs.ornl.gov/radionuclides/download/rad_master_prg_table_mass.xls.
4 Hazard Index, the sum of HQs

GROUNDWATER, NORTHERN AREA

TABLE 2-18

IDENTIFICATION OF COPCs IN GROUNDWATER, NORTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI[2]	FOD[3]	Maximum Concentration			GCTL[4]	GCTL Criteria[5]	Adjusted GCTL[6]	FSW CTL[7]	Exceeds Direct Contact	Minimum CTL[8]	Target System/Organ	NTC BGSV[9]	FDEP COPC[10]	EPA tap water RSL[11]	EPA COPC[12]
		Result	Location	Date											
VOLATILE ORGANICS															
1,1-Dichloroethane	1/24	0.34 I	OLDOU203A	10/7/2008	70	MC-ST	7	NC	NO	7	Kidney	NA	NO	2.4 C	NO
1,4-Dichlorobenzene	3/16	1	OLDOU230B	3/31/2009	75	P	75	3	NO	3	Carcinogen-Liver	NA	NO	**0.43** C	YES
Acetone	5/24	18 I	OLDOU203A	3/31/2009	6300	MC-ST	630	1700	NO	630	Kidney -Liver -Neurological	NA	NO	2200 N	NO
Benzene	4/24	9.5	OLDOU203A	10/7/2008	**1**	P	**1**	71.28	YES	**1**	Carcinogen	NA	YES	**0.41** C	YES
Chlorobenzene	8/24	9	OLDOU203A	10/7/2008	100	P	100	17	NO	17	Liver	NA	NO	9.1 N	NO
cis-1,2-Dichloroethene	1/24	1.4	OLDOU203A	10/7/2008	70	P	70	NC	NO	70	Blood	NA	NO	37 N	NO
Methylene chloride	1/24	1 I	OLDOU203A	3/31/2009	5	P	5	1580	NO	5	Liver	NA	NO	4.8 C	NO
Total xylenes	1/16	3.1	OLDOU203A	10/7/2008	20	S	20	370	NO	20	Body Weight- Mortality-Neurological	NA	NO	20 N	NO
Trichloroethene	2/24	4.4	OLDOU203B	10/6/2008	**3**	P	**3**	80.7	YES	**3**	Carcinogen	NA	YES	**1.7** C	YES
Vinyl chloride	1/24	2.9	OLDOU203A	10/7/2008	**1**	P	**1**	**2.4**	YES	**1**	Carcinogen	NA	NO[13]	**0.016** C	NO[13]
INORGANICS															
Iron	24/24	72600	OLDOU203A	3/19/2008	**4200**	S	**4200**	**1000**	YES	**1000**	Blood - Gastrointestinal	1227	YES	**2600** N	YES
Manganese	24/24	1310	OLDOU203A	3/19/2008	**330**	S	**330**	NC	YES	**330**	Neurological	17	YES	**88** N	YES
MISCELLANEOUS PARAMETERS															
Ammonium	1/8	90.3	OLDOU202A	03/19/2008	NC	NA	NA	NC	NO	NA	NA	NA	NO	NC	NO
Ammonia-N	15/16	51000	OLDOU202A	3/31/2009	NC	NA	NA	NC	NO	NA	Body Weight	NA	NO	NC	NO
Chloride	24/24	78400	OLDOU203A	03/19/2008	250000	S	250000	NA	YES	250000	None Specified	NA	NO	NC	NO
Nitrate-N	12/24	4960	OLDOU203B	03/19/2008	10000	P	10000	NA	YES	10000	Blood	NA	NO	NC	NO
Sulfate	21/24	109000	OLDOU203A	03/19/2008	250000	S	250000	NA	YES	250000	None Specified	NA	NO	NC	NO

Notes

All concentrations in micrograms per liter (µg/L)
Bold cells indicate that the maximum concentration exceeds the corresponding screening criteria
C = Carcinogen
I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
MC-O = Minimum criteria - Organoleptic
MC-ST = Minimum criteria-System Toxicant
N = Noncarcinogen
NA = Not Applicable
NC = no criteria
P = Primary Standard
S = Secondary Standard
1 Based on data from March 2008 through April 2009
2 Chemical of interest, any chemical detected at least once in Northern Area groundwater
3 Frequency of detection, duplicate results included but not counted
4 Florida Department of Environmental Protection groundwater cleanup target level, F.A.C. Chapter 62-777, Table 1, February 2005
5 F.A.C. 62-550 and Chapter 62-777, Table 1, dated February 2005.
6 Florida Department of Environmental Protection groundwater cleanup target levels from F.A.C. 62-777, Table 1, derived via risk-based criteria (MC-ST) that are not primary or secondary standards were divided by 10 for screening purposes
7 Florida Department of Environmental Protection cleanup target level for protection of fresh surface water, per F.A.C. 62-777, Table 1, dated February 2005.
8 The minimum of the adjusted groundwater cleanup target level and the freshwater surface water cleanup target level
9 NTC Orlando background screening value (ABB-ES, 1995)
10 Florida Department of Environmental Protection contaminant of potentional concern, selected if the maximum concentration exceeds the greater if the minimum cleanup target level and NTC background screening value
11 Environmental Protection Agency Regional Screening Levels for Chemical Contaminants at Superfund Sites, Risk-based tapwater screening level, April, 2009
12 Environmental Protection Agency contaminant of potentional concern, selected if the maximum concentration exceeds the Regional Screening Levels for Chemical Contaminants at Superfund Sites, Risk-based tapwater screening level
13 Chemical not evaluated due to low frequency of detection (i.e., < 5% of samples)

TABLE 2-19

SELECTION OF COCs IN GROUNDWATER, NORTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[2]	FOD[3]	Maximum Concentration	GCTL[4]	GCTL Criteria[5]	Target System/Organ	Cumulative Cancer or Target Organ/System Analysis[6]				Adjusted GCTL[8]	FSW CTL[9]	NTC BGSV[10]	PRG[11]	Maximum Concentration Exceeds PRG	COC[12]
						Carcinogen	Nasal	Bodyweight	Adj. Factor[7]						
VOLATILE ORGANICS															
Benzene	4/24	9.5	1	P	Carcinogen	NA	NA	NA	1	1	71.28	NA	1	YES	YES
Trichloroethene	2/24	4.4	3	P	Carcinogen	NA	NA	NA	1	3	80.7	NA	3	YES	YES
INORGANICS															
Iron	24/24	72600	300	S	Blood - Gastrointestinal	NA	NA	NA	1	300	1000	1227	1227	YES	YES
Manganese	24/24	1310	50	S	Neurological	NA	NA	NA	1	50	NC	17	50	YES	YES

Notes

All concentrations in micrograms per liter (µg/L)

NA = Not Applicable

MC-ST = Minimum criteria-System Toxicant

P = Primary Standard

S = Secondary Standard

1 Based on data from March 2008 through April 2009

2 Contaminant of potential concern, identified in Table 2-18

3 Frequency of detection, duplicate results included but not counted

4 Florida Department of Environmental Protection groundwater cleanup target level, F.A.C. Chapter 62-777, Table 1, February 2005

5 F.A.C. 62-550 and Chapter 62-777, Table 1, February 2005

6 The ratio of the maximum detected concentration to the GCTL is shown for any COPC with a GCTL which is not a primary or secondary standard; a ratio or sum of ratios greater than 1 for carcinogens or for any organ/system indicates an exceedance of FDEP guidance

7 The number of contaminants which affect the same organ

8 GCTL divided by the adjustment factor

9 Florida Department of Environmental Protection cleanup target level for protection of freshwater surface water, F.A.C. 62-777, Table 1, February 2005

10 Naval Training Center background screening value

11 Preliminary remediation goal, the greater of the minimum CTL (Adjusted GCTL or FSW CTL) and the NTC BGSV

12 Contaminant of concern, selection is discussed in Section 2.3.6.2 of this document

TABLE 2-20

EXCEEDANCES OF PRGs IN GROUNDWATER, NORTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRANING CENTER
ORLANDO, FLORIDA

COC[2]	Sample Location	Sample ID	Sample Date	Concentration	PRG[3]
VOLATILE ORGANICS					
Benzene	OLDOU203A	OLD-OU2-03A_20081007	10/7/2008	8.8	1
		OLD-OU2-03A_20081007-AVG	10/7/2008	9.15	
		OLD-OU2-03A_20081007-D	10/7/2008	9.5	
Trichloroethene	OLDOU203B	OLD-OU2-03B_20081006	10/6/2008	4.4	3
INORGANICS					
Manganese	OLDOU202A	OLD-OU2-02A_20080319	3/19/2008	67.1	50
		OLD-OU2-02A_20081006	10/6/2008	72.2	
		OLD-OU2-2A_20090331	3/31/2009	209	
	OLDOU203A	OLD-OU2-03A_20080319	3/19/2008	1310	
		OLD-OU2-03A_20081007	10/7/2008	66.5	
		OLD-OU2-03A_20081007-AVG	10/7/2008	65.8	
		OLD-OU2-03A_20081007-D	10/7/2008	65.1	
		OLD-OU2-3A_20090331	3/31/2009	337	
		OLD-OU2-3A_20090331-AVG	3/31/2009	364	
		OLD-OU2-3A_20090331-D	3/31/2009	391	
	OLDOU230A	OLD-OU2-30A_20081003	10/3/2008	50.8	
	OLDOU230B	OLD-OU2-30B_20080319	3/19/2008	100	
		OLD-OU2-30B_20081003	10/3/2008	121	
		OLD-OU2-30B_20090331	3/31/2009	134	
Iron	OLDOU202A	OLD-OU2-02A_20080319	3/19/2008	26400	1227
		OLD-OU2-02A_20081006	10/6/2008	24300	
		OLD-OU2-02A_20090331	3/31/2009	34300	
	OLDOU202B	OLD-OU2-02B_20080319	3/19/2008	2180	
		OLD-OU2-02B_20081007	10/7/2008	3170 / 3180	
		OLD-OU2-02B_20090331	3/31/2009	2660	
	OLDOU203A	OLD-OU2-03A_20080319	3/19/2008	72600	
		OLD-OU2-03A_20081006	10/7/2008	12600 / 13700	
		OLD-OU2-03A_20090331	3/31/2009	6100 / 7160	
	OLDOU203B	OLD-OU2-03B_20080319	3/19/2008	3780	
		OLD-OU2-03B_20081006	10/6/2008	14500	
		OLD-OU2-03B_20090331	3/31/2009	9060	
	OLDOU229A	OLD-OU2-29A_20080319	3/19/2008	7030	
		OLD-OU2-29A_20081006	10/3/2008	6350	
		OLD-OU2-29A_20090331	3/30/2009	5240	
	OLDOU229B	OLD-OU2-29B_20080319	3/19/2008	2440	
		OLD-OU2-29B_20081007	10/3/2008	3470	
		OLD-OU2-29B_20090331	3/31/2009	2290	
	OLDOU230A	OLD-OU2-30A_20080319	3/19/2008	4780	
		OLD-OU2-30A_20081003	10/3/2008	11400	
		OLD-OU2-30A_20090331	3/31/2009	24200	
	OLDOU230B	OLD-OU2-30B_20080319	3/19/2008	26200	
		OLD-OU2-30B_20081007	10/3/2008	21300	
		OLD-OU2-30B_20090331	3/31/2009	31100	

Notes
All concentrations in micrograms per liter
1 Based on data from March 2008 through April 2009
2 Contaminant of concern, identified in Table 2-19
3 Preliminary remediation goal, determined in Table 2-19

TABLE 2-21

RISK CHARACTERIZATION OF GROUNDWATER, NORTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[2] (ug/L)	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
	Maximum Concentration	EPA RSL[3]	Estimated ILCR	Primary Target Organs	EPA RSL[3]	Estimated HQ
1,4-Dichlorobenzene	1	0.43	2.3E-06	Carcinogen-Liver	1000	0.001
Benzene	9.5	0.41	2.3E-05	Carcinogen	44	0.22
Trichloroethene	4.4	1.7	2.6E-06	Carcinogen	NA	NA
Iron	72600	NA	NA	Blood -Gastrointestinal	26000	2.79
Manganese	1310	NA	NA	Neurological	880	1.49
		Total ILCR	2.8E-05		**HI[4]**	4.5

Target Organ HIs

Blood HI =	2.8
Gastrointestinal HI =	2.8
Liver HI =	0.001
Neurological HI =	1.5

Notes
All concentrations in micrograms per liter (µg/L)
NA = not applicable
1 Based on data from March 2008 through April 2009
2 Contaminant of potential concern, identified in Table 2-18
3 Environmental Protection Agency Regional Screening Limit, April 2009
http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm
4 Hazard Index, sum of HQs

GROUNDWATER, SOUTHERN AREA

TABLE 2-22

IDENTIFICATION OF COPCS IN GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI[2]	FOD[3]	Maximum Concentration			GCTL[4]	GCTL Criteria[5]	Adjusted GCTL[6]	FSW CTL[7]	Exceeds Direct Contact	Minimum CTL[8]	Target System/Organ	NTC BGSV[9]	FDEP COPC[10]	EPA tap water RSL[11]		EPA COPC[12]
		Result	Location	Date												
VOLATILE ORGANICS																
1,1,1-Trichloroethane	1/76	2.6 J	OLDOU253B	4/23/2009	200	P	200	270	NO	200	None Specified	NA	NO	910	N	NO
1,1,2-Trichloroethane	1/76	1.84	OLDOU218B	3/19/2008	5	P	5	16	NO	5	Liver	NA	NO	**0.24**	C	NO[13]
1,1-Dichloroethane	1/76	0.32 I	OLDOU231B	10/3/2008	70	MC-ST	7	NC	NO	7	Kidney	NA	NO	2.4	C	NO
1,1-Dichloroethene	4/76	2.9 J	OLDOU253B	4/23/2009	7	P	7	3.2	NO	3.2	Liver	NA	NO	34	N	NO
1,2,4-Trichlorobenzene	1/60	1.4 JB	OLDOU253B	4/23/2009	70	P	70	23	NO	23	Adrenals	NA	NO	**0.82**	N	NO[13]
1,2,4-Trimethylbenzene	2/32	1.13	OLDOU227B	3/13/2008	10	MC-O	**1**	220	NO	**1**	None Specified	NA	YES	1.5	N	NO
1,2-Dichlorobenzene	3/60	0.62 J	OLDOU252B	1/21/2009	600	P	600	99	NO	99	Body Weight	NA	NO	37	N	NO
1,3,5-Trimethylbenzene	1/32	0.48 J	OLDOU227B	3/13/2008	10	MC-O	1	220	NO	1	None Specified	NA	NO	1.2	N	NO
1,4-Dichlorobenzene	8/60	11.7	OLDOU227B	3/13/2008	75	P	75	**3**	NO	**3**	Liver	NA	YES	**0.43**	C	YES
2-Butanone	4/76	140	OLDOU250B	4/23/2009	4200	MC-ST	420	120000	NO	420	Developmental	NA	NO	710	N	NO
Acetone	17/76	44 JB	OLDOU218B	1/21/2009	6300	MC-ST	630	1700	NO	630	Kidney - Liver - Neurological	NA	NO	2200	N	NO
Benzene	26/76	27	OLDOU231B	3/27/2009	**1**	P	**1**	71.28	YES	**1**	Blood	NA	YES	**0.41**	C	YES
Bromochloromethane	1/60	0.66 J	OLDOU250B	1/21/2009	91	MC-ST	9.1	NC	NO	9.1	None Specified	NA	NO	NC		NO
Carbon Disulfide	3/76	4 J	OLDOU253B	4/23/2009	700	MC-ST	70	110	NO	70	Developmental - Neurological	NA	NO	100	N	NO
Carbon Tetrachloride	1/76	2.1 J	OLDOU253B	4/23/2009	3	P	3	4.42	NO	3	Liver	NA	NO	**0.2**	C	NO[13]
Chlorobenzene	46/76	39	OLDOU231B	3/27/2009	100	P	100	**17**	NO	**17**	Liver	NA	YES	**9.1**	N	YES
Chlorodibromomethane	1/76	0.33 J	OLDOU253A	6/11/2008	0.4	MC	**0.04**	34	NO	**0.04**	Liver	NA	NO[12]	**0.15**	C	NO[13]
Chloroform	12/76	11	OLDOU253B	4/23/2009	70	MC-ST	**7**	470.8	NO	**7**	Liver	NA	YES	**0.19**	C	YES
Chloromethane	1/76	4.9 J	OLDOU253B	4/23/2009	**2.7**	MC-C	**0.27**	470.8	YES	**0.27**	Neurological	NA	NO[12]	19	N	NO
cis-1,2-Dichloroethene	55/76	2400	OLDOU218B	4/23/2009	**70**	P	**70**	NC	YES	**70**	Blood	NA	YES	**37**	N	YES
Dichlorodifluoromethane	2/60	1.44	OLDOU231B	3/20/2008	1400	MC-ST	140	NC	NO	140	Liver	NA	NO	39	N	NO
Ethylbenzene	4/76	2.5 JB	OLDOU253B	4/23/2009	30	S	30	610	NO	30	Developmental -Kidney -Liver	NA	NO	**1.5**	C	YES
Isopropylbenzene	5/60	2.5 J	OLDOU253B	4/23/2009	**0.8**	MC-O	**0.08**	260	YES	**0.08**	Adrenals- Kidney	NA	YES	68	N	NO
Methylene Chloride	25/76	160 JB	OLDOU243B	1/23/2009	**5**	P	**5**	1580	YES	**5**	Liver	NA	YES	**4.8**	C	YES
Naphthalene	5/32	10.7	OLDOU227B	3/19/2008	14	MC-ST	**1.4**	26	NO	**1.4**	Nasal	NA	YES	**0.14**	C	YES
N-Butylbenzene	2/32	0.57 J	OLDOU231B	3/20/2008	NC	NC	NC	NC	NA	NA	NA	NA	NO	NC		NO
Sec-Butylbenzene	1/32	0.64 J	OLDOU237B	3/18/2008	NC	NC	NC	NC	NA	NA	NA	NA	NO	NC		NO
Styrene	1/76	1.48	OLDOU237B	3/18/2008	100	P	100	460	NO	100	Blood -Liver-Neurological	NA	NO	160	N	NO
Tetrachloroethene	34/76	57	OLDOU243B	1/23/2009	**3**	P	**3**	**8.85**	YES	**3**	Liver	NA	YES	**0.11**	C	YES
Toluene	9/76	4.7 J	OLDOU250B	4/23/2009	40	S	40	480	NO	40	Kideny -Liver - Neurological	NA	NO	230	N	NO
Total Xylenes	3/55	4.37	OLDOU227B	3/19/2008	20	S	20	370	NO	20	Neurological	NA	NO	20	N	NO
trans-1,2-Dichloroethene	6/76	3.2 J	OLDOU253B	4/23/2009	100	P	100	11000	NO	100	Blood -Liver	NA	NO	11	N	NO
Trichloroethene	41/76	6300	OLDOU243B	1/23/2009	**3**	P	**3**	**80.7**	YES	**3**	None Specified	NA	YES	**1.7**	C	YES
Vinyl Chloride	42/76	56.8	OLDOU218B	3/19/2008	**1**	P	**1**	**2.4**	YES	**1**	Liver	NA	YES	**0.016**	N	YES
TOTAL PETROLEUM HYDROCARBONS																
Total Petroleum Hydrocarbons	8/12	1200	OLDOU252A	6/10/2008	5000	MC	**500**	5000	NO	**500**	Multiple Endpoints Mixed Contaminants	NA	YES	NC		NO
INORGANICS																
Iron	36/36	8520	OLDOU227A	10/2/2008	**4200**	S	**4200**	**1000**	YES	**1000**	Gastrointestinal	1227	YES	**2600**	N	YES
Manganese	33/36	922	OLDOU227A	10/2/2008	**330**	S	**330**	NC	YES	**330**	Neurological	17	YES	**88**	N	YES

TABLE 2-22

IDENTIFICATION OF COPCS IN GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COI[2]	FOD[3]	Maximum Concentration			GCTL[4]	GCTL Criteria[5]	Adjusted GCTL[6]	FSW CTL[7]	Exceeds Direct Contact	Minimum CTL[8]	Target System/Organ	NTC BGSV[9]	FDEP COPC[10]	EPA tap water RSL[11]	EPA COPC[12]
		Result	Location	Date											
MISCELLANEOUS PARAMETERS															
Ammonia-N	7/24	3000	OLDOU227A	10/2/2008	NC	NA	NA	NC	NO	NA	NA	NA	NO	NC	NO
Nitrate-N	14/36	2100	OLDOU233A	10/7/2008	10000	P	10000	NC	NO	10000	Blood	NA	NO	NC	NO
Nitrite-N	1/36	80 I	OLDOU218B	3/26/2009	1000	P	1000	NC	NO	1000	Blood	NA	NO[12]	NC	NO
Sodium	12/12	30500	OLDOU251A	6/13/2008	160000	P	160000	NC	NO	160000	None Specified	NA	NO	NC	NO
Sulfate	45/52	49000	OLDOU227A	10/2/2008	250000	S	250000	NC	NO	250000	None Specified	NA	NO	NC	NO
Chloride	36/36	49900	OLDOU2DP02A	3/19/2008	250000	S	250000	NC	NO	250000	None Specified	NA	NO	NC	NO

Notes

All concentrations in micrograms per liter (µg/L)
Bold cells indicate that the maximum concentration exceeds the corresponding screening criteria
B = between the laboratory method detection limit and the reporting limit
C = Carcinogen
I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
MC-O = Minimum criteria - Organoleptic
MC-ST = Minimum criteria-System Toxicant
N = Noncarcinogen
NA = Not Applicable
NC = no criteria
P = Primary Standard
S = Secondary Standard
1 Based on data from March 2008 through April 2009
2 Chemical of interest, any chemical detected at least once in Southern Area groundwater
3 Frequency of detection, duplicate results included but not counted
4 Florida Department of Environmental Protection groundwater cleanup target level, F.A.C. Chapter 62-777, Table 1, February 2005
5 F.A.C. 62-550 and Chapter 62-777, Table 1, February 2005
6 Florida Department of Environmental Protection groundwater cleanup target levels from F.A.C. 62-777, Table 1, derived via risk-based criteria (MC-ST) that are not primary or secondary standards were divided by 10 for screening purposes
7 Florida Department of Environmental Protection cleanup target level for protection of fresh surface water, per F.A.C. 62-777, Table 1, February 2005
8 The minimum of the adjusted groundwater cleanup target level and the freshwater surface water cleanup target level
9 NTC Orlando background screening value (ABB-ES, 1995)
10 Florida Department of Environmental Protection contaminant of potentional concern, selected if the maximum concentration exceeds the greater if the minimum cleanup target level and NTC background screening value
11 Environmental Protection Agency Regional Screening Level for Chemical Contaminants at Superfund Sites, Risk-based tapwater screening level, April 2009
12 Environmental Protection Agency contaminant of potentional concern, selected if the maximum concentration exceeds the Regional Screening Level for Chemical Contaminants at Superfund Sites, Risk-based tapwater screening level
13 Chemical not evaluated due to low frequency of detection (i.e., < 5% of samples)

TABLE 2-23

SELECTION OF COCs IN GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRANING CENTER
ORLANDO, FLORIDA

COPC[2]	FOD[3]	Maximum Concentration	GCTL[5]	GCTL Criteria[6]	Target System/Organ	Cumulative Cancer or Target Organ/System Analysis[7]					Adjusted GCTL[9]	FSW CTL[10]	NTC BGSV[11]	PRG[12]	Maximum Concentration Exceeds PRG	COC[13]
						Liver	Adrenals, Kidneys	Nasal	Bodyweight	Adj. Factor[8]						
VOLATILE ORGANICS																
1,2,4-Trimethylbenzene	2/32	1.13	10	MC-O	None Specified	NA	NA	NA	NA	1	10	220	NA	10	NO	NO
1,4-Dichlorobenzene	8/60	11.7	75	P	Liver	NA	NA	NA	NA	1	75	3	NA	3	YES	NO
Benzene	26/76	27	1	P	Blood	NA	NA	NA	NA	1	1	71.28	NA	1	YES	YES
Chlorobenzene	46/76	39	100	P	Liver	NA	NA	NA	NA	1	100	17	NA	17	YES	YES
Chloroform	12/76	11	70	MC-ST	Liver	0.2	NA	NA	NA	1	70	470.8	NA	70	NO	NO
cis-1,2-Dichloroethene	55/76	2400	70	P	Blood	NA	NA	NA	NA	1	70	NC	NA	70	YES	YES
Isopropylbenzene	5/60	2.5	0.8	MC-O	Adrenals- Kidney	NA	3.1	NA	NA	1	0.8	260	NA	0.8	YES	NO
Methylene Chloride	25/76	160	5	P	Liver	NA	NA	NA	NA	1	5	1580	NA	5	YES	NO
Naphthalene	5/32	10.7	14	MC-ST	Nasal	NA	NA	0.76	NA	1	14	26	NA	14	NO	NO
Tetrachloroethene	34/76	57	3	P	Liver	NA	NA	NA	NA	1	3	8.85	NA	3	YES	YES
Trichloroethene	41/76	6300	3	P	None Specified	NA	NA	NA	NA	1	3	80.7	NA	3	YES	YES
Vinyl Chloride	42/76	56.8	1	P	Liver	NA	NA	NA	NA	1	1	2.4	NA	1	YES	YES
TOTAL PETROLEUM HYDROCARBONS																
Total Petroleum Hydrocarbons	8/12	1200	5000	MC	Multiple Endpoints Mixed Contaminants	NA	NA	NA	NA	1	5000	5000	NA	5000	NO	NO
INORGANICS																
Iron	36/36	8520	300	S	Gastrointestinal	NA	NA	NA	NA	1	300	1000	1227	1227	YES	YES
Manganese	33/36	922	50	S	Neurological	NA	NA	NA	NA	1	50	NC	17	50	YES	YES

Notes

All concentrations in micrograms per liter

Selected COCs **BOLD**

NA = Not Applicable

MC-O = Minimum criteria - Organoleptic

MC-ST = Minimum criteria-System Toxicant

P = Primary Standard

S = Secondary Standard

1 Based on data from March 2008 through April 2009

2 Contaminant of potential concern, identified in Table 2-22

3 Frequency of detection, duplicate results included but not counted

4 Florida Department of Environmental Protection groundwater cleanup target level, F.A.C. Chapter 62-777, Table 1, February 2005

5 F.A.C. 62-550 and Chapter 62-777, Table 1, February 2005

6 The ratio of the maximum detected concentration to the GCTL is shown for any COPC with a GCTL which is not a primary or secondary standard; a ratio or sum of ratios greater than 1 for carcinogens or for any organ/system indicates an exceedance of FDEP guidance

7 The number of contaminants which affect the same organ

8 Groundwater Cleanup Target Level divided by the adjustment factor

9 Florida Department of Environmental Protection cleanup target level for protection of fresh surface water, F.A.C. 62-777, Table 1, February 2005

10 Naval Training Center background screening value

11 Preliminary remediation goal, the greater of the minimum cleanup target level (Adjusted groundwater cleanup target level or freshwater surface water cleanup target level) and the Naval Training Center background screening value

12 Contaminant of concern, selection is discussed in Section 2.3.7.2 of this document

TABLE 2-24

EXCEEDANCES OF PRGs IN GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRANING CENTER
ORLANDO, FLORIDA

COC[2]	Sample Location	Sample ID	Sample Date	Concentration	PRG[3]
VOLATILE ORGANICS					
Benzene	OLDOU227B	OLD-OU2-27B_20081002	10/2/2008	15.5 / 16	1
		OLD-OU2-27B_20080319	3/19/2008	12	
		OLD-OU2-27B_20090327	3/27/2009	7	
	OLDOU228B	OLD-OU2-28B1_20080318	3/18/2008	1.16	
	OLDOU231B	OLD-OU2-31B_20080320	3/20/2008	25	
		OLD-OU2-31B_20081002	10/2/2008	20.6	
		OLD-OU2-31B_20090327	3/27/2009	27	
	OLDOU237B	OLD-OU2-37B_20081003	10/3/2008	1.2	
		OLD-OU2-37B_20090330	3/30/2009	1	
	OLDOU245B	TO02MW45BEQ109	1/21/2009	1.7	
	OLDOU253B	TO2OU253BEQ209	4/23/2009	3.5 JB	
	OLDOU2DP01A	OLD-OU2-DP01A_20080319	3/19/2008	4.96	
		OLD-OU2-DP01A_20081006	10/6/2008	1.8	
Chlorobenzene	OLDOU227B	OLD-OU2-27B_20080319	3/19/2008	36	17
		OLD-OU2-27B_20080319-D	3/19/2008	32.1	
		OLD-OU2-27B_20081002	10/2/2008	33.6	
		OLD-OU2-27B_20090327	3/27/2009	25	
	OLDOU231B	OLD-OU2-31B_20080320	3/20/2008	36.3	
		OLD-OU2-31B_20081003	10/3/2008	35.4	
		OLD-OU2-31B_20090327	3/27/2009	39	
cis-1,2-Dichloroethene	OLDOU218B	OLD-OU2-18B_20080319	3/19/2008	287 / 292	70
		TO02OU2MW18BBL	6/12/2008	200	
		OLD-OU2-18B_20081006	10/6/2008	174	
		TO02MW18BEQ109	1/21/2009	1800	
		OLD-OU2-18B_20090326	3/26/2009	1640	
		TO2OU218BEQ209	4/23/2009	2400	
	OLDOU240B	TO02MW40BEQ109	1/22/2009	1000	
		TO2OU240BEQ209	4/23/2009	1200	
	OLDOU242B	TO02OU242BEQ109	1/23/2009	420	
	OLDOU243B	TO02OU243BEQ109	1/23/2009	160	
	OLDOU245B	TO02MW45BEQ109	1/21/2009	130	
	OLDOU249B	TO02MW49BEQ109	1/21/2009	370	
	OLDOU250B	TO02OU2MW50BBL	6/11/2008	250	
		TO02MW50BEQ109	1/21/2009	370	
		TO2OU250BEQ209	4/23/2009	370	
	OLDOU251B	TO02MW51BEQ109	1/21/2009	130	
		TO2OU251BEQ209	4/23/2009	110	
	OLDOU252B	TO02MW52BEQ109	1/21/2009	100	
	OLDOU253B	TO02OU2MW53BBL	6/11/2008	130 J	
		TO02MW53BEQ109	1/21/2009	150	
		TO2OU253BEQ209	4/23/2009	760 J	
	OLDOU2DP02A	OLD-OU2-DP02A_20090326	3/26/2009	218	

TABLE 2-24

EXCEEDANCES OF PRGs IN GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRANING CENTER
ORLANDO, FLORIDA

COC[2]	Sample Location	Sample ID	Sample Date	Concentration	PRG[3]
Tetrachloroethene	OLDOU218B	OLD-OU2-18B_20080319	3/19/2008	27.9 / 31.5	3
		TO02OU2MW18BBL	6/12/2008	30 J	
		OLD-OU2-18B_20081006	10/6/2008	21.5 I	
		TO02MW18BEQ109	1/21/2009	9.1 J	
	OLDOU231B	OLD-OU2-31B_20080320	3/20/2008	3.14	
		OLD-OU2-31B_20081003	10/3/2008	4.7	
	OLDOU240B	TO02MW40BEQ109	1/22/2009	11	
		TO2OU240BEQ209	4/23/2009	9.1 J	
	OLDOU242B	TO02OU242BEQ109	1/23/2009	10 J	
	OLDOU243B	TO02OU243BEQ109	1/23/2009	57	
	OLDOU245B	TO02MW45BEQ109	1/21/2009	13	
	OLDOU249B	TO02OU2MW49BBL	6/10/2008	5.1	
		TO02MW49BEQ109	1/21/2009	6.6	
	OLDOU250B	TO02OU2MW50BBL	6/11/2008	13 J	
	OLDOU251B	TO02OU2MW51BBL	6/12/2008	9.4	
		TO02MW51BEQ109	1/21/2009	4.4	
		TO2OU251BEQ209	4/23/2009	6.2	
	OLDOU252A	TO02OU2MW52ABL	6/10/2008	4.3	
	OLDOU252B	TO02OU2MW52BBL	6/10/2008	8.1	
		TO02MW52BEQ109	1/21/2009	7.8	
	OLDOU253B	TO02OU2MW53BBL	6/11/2008	28 J	
		TO02MW53BEQ109	1/21/2009	19 J	
		TO2OU253BEQ209	4/23/2009	3.8 J	

TABLE 2-24

EXCEEDANCES OF PRGs IN GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRANING CENTER
ORLANDO, FLORIDA

COC[2]	Sample Location	Sample ID	Sample Date	Concentration	PRG[3]
Trichloroethene	OLDOU218B	OLD-OU2-18B_20080319	3/19/2008	3760 / 4010	3
		TO02OU2MW18BBL	6/12/2008	4400	
		OLD-OU2-18B_20081006	10/6/2008	3380	
		TO02MW18BEQ109	1/21/2009	1000	
		TO2OU218BEQ209	4/23/2009	56	
	OLDOU231B	OLD-OU2-31B_20081003	10/3/2008	3.4	
	OLDOU233B	OLD-OU2-33B_20080319	3/19/2008	20.6	
		OLD-OU2-33B_20081007	10/7/2008	10.8	
		OLD-OU2-33B_20090327	3/27/2009	16	
	OLDOU239B	TO02OU239BEQ109	1/23/2009	5.9	
	OLDOU240B	TO02MW40BEQ109	1/22/2009	1200	
		TO2OU240BEQ209	4/23/2009	1300	
	OLDOU242B	TO02OU242BEQ109	1/23/2009	3900	
	OLDOU243B	TO02OU243BEQ109	1/23/2009	6300	
	OLDOU245B	TO02MW45BEQ109	1/21/2009	1700	
	OLDOU249A	TO02OU2MW49ABL	6/10/2008	77	
	OLDOU249B	TO02OU2MW49BBL	6/10/2008	310	
		TO02MW49BEQ109	1/21/2009	330	
	OLDOU250A	TO02OU2MW50ABL	6/11/2008	30	
	OLDOU250B	TO02OU2MW50BBL	6/11/2008	1800	
		TO02MW50BEQ109	1/21/2009	46	
		TO2OU250BEQ209	4/23/2009	49	
	OLDOU251A	TO02OU2MW51ABL	6/11/2008	12	
	OLDOU251B	TO02OU2MW51BBL	6/12/2008	550	
		TO02MW51BEQ109	1/21/2009	77	
		TO2OU251BEQ209	4/23/2009	270	
	OLDOU252A	TO02OU2MW52ABL	6/10/2008	98	
	OLDOU252B	TO02OU2MW52BBL	6/10/2008	350	
		TO02MW52BEQ109	1/21/2009	340	
	OLDOU253A	TO02OU2MW53ABL	6/10/2008	35	
	OLDOU253B	TO02OU2MW53BBL	6/11/2008	3700 J	
		TO02MW53BEQ109	1/21/2009	2100	
		TO2OU253BEQ209	4/23/2009	110 J	
	OLDOU2DP01A	OLD-OU2-DP01A_20080319	3/19/2008	15.5	
	OLDOU2DP02A	OLD-OU2-DP02A_20080319	3/19/2008	22.7	
		OLD-OU2-DP02A_20081006	10/6/2008	4.4	
		OLD-OU2-DP02A_20090326	3/26/2009	35	

TABLE 2-24

EXCEEDANCES OF PRGs IN GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRANING CENTER
ORLANDO, FLORIDA

COC[2]	Sample Location	Sample ID	Sample Date	Concentration	PRG[3]
Vinyl Chloride	OLDOU218B	OLD-OU2-18B_20080319	3/19/2008	56 / 56.8	1
		TO02OU2MW18BBL	6/12/2008	50	
		OLD-OU2-18B_20081006	10/6/2008	33.5 I	
		TO02MW18BEQ109	1/21/2009	28	
		OLD-OU2-18B_20090326	3/26/2009	48	
		TO2OU218BEQ209	4/23/2009	33	
	OLDOU227B	OLD-OU2-27B_20080319	3/19/2008	2.32 / 2.91	
	OLDOU228B	OLD-OU2-28B_20080318	3/18/2008	2.7 / 2.33	
	OLDOU231B	OLD-OU2-31B_20080320	3/20/2008	3.05	
		OLD-OU2-31B_20081003	10/3/2008	6.4	
		OLD-OU2-31B_20090327	3/27/2009	4	
	OLDOU237B	OLD-OU2-37B_20081003	10/3/2008	1.5	
		OLD-OU2-37B_20090330	3/30/2009	1	
	OLDOU239B	TO02OU239BEQ109	1/23/2009	1.1	
	OLDOU240B	TO02MW40BEQ109	1/22/2009	18	
		TO2OU240BEQ209	4/23/2009	26	
	OLDOU242B	TO02OU242BEQ109	1/23/2009	30 J	
	OLDOU243B	TO02OU243BEQ109	1/23/2009	51	
	OLDOU245B	TO02MW45BEQ109	1/21/2009	8.6 J	
	OLDOU249A	TO02OU2MW49ABL	6/10/2008	3.5	
	OLDOU249B	TO02OU2MW49BBL	6/10/2008	3.8	
		TO02MW49BEQ109	1/21/2009	3.2 J	
	OLDOU250A	TO02OU2MW50ABL	6/11/2008	1.1	
	OLDOU250B	TO02OU2MW50BBL	6/11/2008	22	
		TO02MW50BEQ109	1/21/2009	2.3	
		TO2OU250BEQ209	4/23/2009	4 J	
	OLDOU251B	TO02OU2MW51BBL	6/12/2008	5.8	
		TO02MW51BEQ109	1/21/2009	1.4	
		TO2OU251BEQ209	4/23/2009	5.4	
	OLDOU252A	TO02OU2MW52ABL	6/10/2008	2	
	OLDOU252B	TO02OU2MW52BBL	6/10/2008	4	
	OLDOU253A	TO02OU2MW53ABL	6/10/2008	2.4	
	OLDOU253B	TO02OU2MW53BBL	6/11/2008	40 J	
		TO02MW53BEQ109	1/21/2009	18 J	
		TO2OU253BEQ209	4/23/2009	10 J	
	OLDOU2DP01A	OLD-OU2-DP01A_20080319	3/19/2008	4.26	
		OLD-OU2-DP01A_20081006	10/6/2008	3.4	
	OLDOU2DP02A	OLD-OU2-DP02A_20090326	3/26/2009	3	

TABLE 2-24

EXCEEDANCES OF PRGs IN GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRANING CENTER
ORLANDO, FLORIDA

COC[2]	Sample Location	Sample ID	Sample Date	Concentration	PRG[3]
INORGANICS					
Manganese	OLDOU227A	OLD-OU2-27A_20080319	3/19/2008	298	50
		OLD-OU2-27A_20081002	10/2/2008	922	
		OLD-OU2-27A_20090327	3/27/2009	388	
Iron	OLDOU218B	OLD-OU2-18B_20081006	10/6/2008	1260	1227
		OLD-OU2-18B_20090326	3/26/2009	2650	
	OLDOU221A	OLD-OU2-21A_20081006	10/6/2008	1310	
	OLDOU221B	OLD-OU2-21B_20090331	3/31/2009	1450	
	OLDOU227A	OLD-OU2-27A_20080319	3/19/2008	7820	
		OLD-OU2-27A_20081002	10/2/2008	8520	
		OLD-OU2-27A_20090327	3/27/2009	5740	
	OLDOU227B	OLD-OU2-27B_20080319	3/19/2008	1230 / 1280	
	OLDOU231B	OLD-OU2-31B_20080320	3/20/2008	1670	
		OLD-OU2-31B_20081002	10/2/2008	2030	
		OLD-OU2-31B_20090327	3/27/2009	1830	
	OLDOU233A	OLD-OU2-33A_20080319	3/19/2008	1380	
		OLD-OU2-33A_20081007	10/7/2008	1100 / 1910	
		OLD-OU2-33A_20090327	3/27/2009	2160	
	OLDOU233B	OLD-OU2-33B_20080319	3/19/2008	1670	
		OLD-OU2-33B_20081007	10/7/2008	1850	
		OLD-OU2-33B_20090327	3/27/2009	1810	
	OLDOU2DP02A	OLD-OU2-DP02A_20080319	3/19/2008	7820	
		OLD-OU2-DP02A_20081006	10/6/2008	3130	
		OLD-OU2-DP02A_20090326	3/26/2009	1950	

Notes

All concentrations in micrograms per liter

[1] Based on data from March 2008 through April 2009

[2] Contaminant of concern, identified in Table 2-23

[3] Preliminary remediation goal, determined in Table 2-23

TABLE 2-25

RISK CHARACTERIZATION OF GROUNDWATER, SOUTHERN AREA[1]
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COPC[2] (µg/L)	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
	Maximum Concentration	EPA RSL[3]	Estimated ILCR	Primary Target Organs	EPA RSL[3]	Estimated HQ
1,4-Dichlorobenzene	11.7	0.43	2.7E-05	Liver	1000	0.01
Benzene	27	0.41	6.6E-05	Blood	44	0.6
Chlorobenzene	39	NA	NA	Liver	91	0.4
Chloroform	11	0.19	5.8E-05	Liver	130	0.08
cis-1,2-Dichloroethene	2400	NA	NA	Blood	3700	0.6
Ethylbenzene	2.5	1.5	1.7E-06	Developmental -Kidney -Liver	1300	0.0
Iron	8520	NA	NA	Gastrointestinal	26000	0.3
Methlyene chloride	160	4.8	3.3E-05	Liver	1100	0.15
Naphthalene	10.7	0.14	7.6E-05	Nasal	6.2	1.7
Tetrachloroethene	57	0.11	5.2E-04	Liver	220	0.26
Trichloroethene	6300	1.7	3.7E-03	None Specified	NA	NA
Vinyl Chloride	56.8	0.0162	3.5E-03	Liver	72	0.8
Manganese	922	NA	NA	Neurological	880	1.0
		Total ILCR	8.0E-03		**HI[4]**	6.1

Target Organ HIs

Blood HI =	1.3
Liver HI =	1.7
Neurological HI =	1.0
Kidney HI =	0.0
Developmental =	0.0
Gastrointestinal =	0.3
Nasal =	1.7

Notes

All concentrations in micrograms per liter (µg/L)

NA = not applicable

[1] Based on data from March 2008 through April 2009

[2] Contaminant of potential concern, identified in Table 2-23

[3] Environmental Protection Agency Regional Screening Value, April 2009
http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

[4] Hazard Index, sum of HQs

TABLE 3-1

CHEMICAL-SPECIFIC ARARs AND TBCs
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
Federal Regulatory Requirements	Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites	Relevant and Appropriate	Risk-based screening levels developed with The Department of Energy's Oak Ridge National Laboratory under an Interagency Agreement as an update of the EPA Region 3 Risk-based Concentration Table, Region 6 Human Health Medium-Specific Screening Levels Table and the Region 9 Preliminary Remediation Goal (PRG) Table. RSLs are calculated using the latest toxicity values, default exposure assumptions and physical and chemical properties. A calculator is provided at the website, where default parameters can be changed to reflect site-specific risks.	EPA RSLs are used to calculate site risk.
	Safe Drinking Water Act Regulations, Maximum Contaminant Levels (MCLs) (40 CFR Parts 141.11-141.16)	Relevant and Appropriate	These regulations set standards of protection for drinking water sources serving at least 25 persons.	MCLs are part of required state cleanup standards.
	Groundwater Protection Strategy	To be considered	EPA policy to protect groundwater for its highest present or potential future beneficial use.	More stringent state regulations would be followed.
	Ambient Water Quality Criteria, Section 304, Clean Water Act	Relevant and Appropriate	Sets criteria for assessing the need for surface water remedial action.	Criteria would be considered for assessing the requirement of remedial action for canal water next to OU 2.
State Regulatory Requirements	FDEP, Contaminant Cleanup Target Levels (CTLs) (Chapter 62-777, F.A.C.), February 2005	Potentially Applicable	Establishes cleanup target levels for groundwater, surface water, and soil.	The CTLs will be used as PRGs for remedial actions.
	FDEP, Surface Water Quality Standards (Chapter 62-302, F.A.C.)	Potentially Applicable	These regulations set the chemical concentration standards for discharges to surface water.	Alternatives involving surface water cleanup and groundwater discharging to surface water would be required to achieve the standards.
	FDEP, Hazardous Waste (Chapter 62-730, F.A.C.)	Potentially Applicable	These regulations define chemical concentration limits that would classify solid waste as hazardous waste and set rules for the management of such waste.	Based on the history of operations at OU 2, the waste would be classified as hazardous waste. These regulations would apply to all alternatives involving Hazardous Waste Management during Remediation.

TABLE 3-2

LOCATION-SPECIFIC ARARs AND TBCs
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
Federal Regulatory Requirements	Conservation Programs on Military Reservations (Sikes Act) of 1960, as Amended	Relevant and Appropriate	This act requires that military installations manage natural resources for multipurpose uses and public access appropriate for those uses consistent with the military department's mission.	NTC Orlando is an inactive military installation. Requirements will be met as appropriate.
State Regulatory Requirements	FDEP, Hazardous Waste (Chapter 62-730, F.A.C.)	Potentially Applicable	These regulations define hazardous waste and set rules for the management of such waste.	Based on the history of operations at OU 2, the landfill waste would be classified as hazardous waste. Landfill cap requirements are to be met to prevent potential exposures to receptors at the location.

TABLE 3-3

ACTION-SPECIFIC ARARs AND TBCs
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
Federal Regulatory Requirements	Resource Conservation and Recovery Act (RCRA) Regulations, Identification and Listing of Hazardous Wastes [40 Code of Federal Regulations (CFR) Part 261]	Potentially Applicable	Defines listed and characteristic hazardous wastes subjected to RCRA. Appendix II contains the toxicity characteristic leaching procedure.	These standards would apply in determining whether or not waste on site is hazardous.
	RCRA Subtitle D, 40 United States Code (U.S.C.) 6901	Relevant and Appropriate	Establishes design and operating criteria for solid waste (non-hazardous) landfills.	Alternatives would involve landfill closure.
	Safe Drinking Water Act Regulations, Underground Injection Control Program (40 CFR Parts 144,146,147, and 1000)	Potentially Applicable	These regulations outline minimum program and performance standards for underground injection programs.	Alternatives may involve injection of biodegradation enhancement chemicals.
	Occupational Safety and Health Act Requirements (20 CFR 1910, 1926, and 1904)	Potentially Applicable	These regulations specify the requirements for safety and health applicable to workers engaged in on-site field activities.	Alternatives may involve well construction, injection of biodegradation enhancements, and sampling of groundwater wells.
	Presumptive Remedy for CERCLA Municipal Landfill Sites, EPA 540-F-93-035, Sept. 1993	To be considered	This directive establishes the procedures for containment as the remedy for CERCLA municipal landfills under Superfund Accelerated Cleanup Model (SACM)	Feasibility Study at OU 2 is conducted assuming that presumptive remedy would be implemented at OU 2.
	Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills, EPA/540/F-96/020, Dec. 1996	To be considered	This directive highlights a step-by-step approach to determining when a specific military landfill is an appropriate site for application of the containment presumptive remedy.	OU 2 is a military landfill and Remedial Investigation at OU 2 is conducted assuming that presumptive remedy would be implemented at OU 2.
	Presumptive Remedies: Policy and Procedures, EPA 540-F-93-047, Sept. 1993	To be considered	Overall guide to the presumptive remedies initiative and its effect on site cleanup.	Feasibility Study at OU 2 is conducted assuming that presumptive remedy would be implemented at OU 2.
State Regulatory Requirements	FDEP, Contaminant Cleanup Target Levels (CTLs) (Chapter 62-777, FAC), February 2005	Potentially Applicable	Establishes cleanup target levels for groundwater, surface water, and soil.	The CTLs will be used as Preliminary Remediation Goals (PRGs) for remedial actions.
	FDEP, Hazardous Waste (Chapter 62-730, FAC)	Potentially Applicable	These regulations define hazardous waste and set rules for the management of such waste.	Based on the history of operations at OU 2, the waste would be classified as hazardous waste. These regulations would apply to all alternatives involving Hazardous Waste Management during Remediation.

TABLE 4-1

REMEDIATION TECHNOLOGIES
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

General Response Action	Remediation Technology	Process Option	Description	Effectiveness	Implementability	Cost	Eliminated/ Retained
No Action	None	Not applicable	No remedial actions taken. Considered as required by CERCLA for baseline comparison.	Not effective	Readily implemented	No cost	**Retained**
Land Use Controls	Institutional Controls	Legal restrictions on land and groundwater use	Property use restrictions to prevent the site from being used for residential purposes and prevent the installation of any structure which would violate the integrity of the in site landfill cap. Property and groundwater use restrictions to prevent exposure to the groundwater and the installation of groundwater wells (other than for use as environmental monitoring wells).	Effective	Readily implemented	Low	**Retained**
Containment	In situ capping	Maintenance of existing soil cover	Maintenance of the existing soil cover to reduce the potential for contaminant migration and exposure to the public and the environment.	Effective	Readily implemented	Low	**Retained**
	Passive treatment	Monitored Natural Attenuation	Collect and analyze groundwater and surface water samples to assess natural attenuation of contaminants.	Effective	Readily implemented	Low	**Retained**
	In situ treatment	Enhanced bioremediation	Nutrient injections to enhance ongoing bioremediation of contaminants.	Effective	Readily implemented	Moderate	**Retained**
Monitoring	Monitoring	Monitoring of LUCs	Annual site inspections to verify continued implementation of Land Use Controls.	Effective	Readily implemented	Low	**Retained**
		Monitoring of soil cover	Annual site inspections to verify 2-foot depth of landfill soil cover.	Effective	Readily implemented	Low	**Retained**
		Monitoring of groundwater and surface water	Collect and analyze groundwater and surface water samples to assess trends in concentrations of and evaluate the potential migration of contaminants.	Effective	Readily implemented	Moderate	**Retained**

TABLE 5-1

ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE N-2: LANDFILL CONTAINMENT, LUCs, AND MONITORING
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	EVALUATION/ACTION TO BE TAKEN
FEDERAL REQUIREMENTS				
Safe Drinking Water Act Regulations, Maximum Contaminant Levels (MCLs)	40 Code of Federal Regulations (CFR) Part 141, Subpart G	Relevant and Appropriate	Establishes enforceable standards for potable water for specific contaminants that have been determined to adversely affect human health.	Would be used as protective levels for groundwater that is a potential drinking water source.
Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites	-	TBC	Risk-based United States Environmental Protection Agency (EPA) screening levels calculated using the latest toxicity values, default exposure assumptions and physical and chemical properties.	Ratio of exposure point concentration (EPC) to RSL was used to estimate site risk.
STATE OF FLORIDA REQUIRMENTS				
Groundwater Classes, Standards and Exemptions	Chapter 62-520, Florida Administrative Code (F.A.C.)	Applicable	This rule designates the groundwater of the state into five classes and establishes minimum “free from” criteria.	Used to establish cleanup goals for groundwater that is a potential source of drinking water. Surficial groundwater at the site is classified as G-II.
Drinking Water Criteria	Chapter 62-550.310, F.A.C.	Relevant and Appropriate	This rule provides primary and secondary drinking water quality criteria.	Any pertinent state primary drinking water standard(s) more stringent than federal MCLs will be used to establish groundwater cleanup goals for this site.
Contaminant Cleanup Target Levels Rule	Chapter 62-777.170, F.A.C.	Relevant and Appropriate	This rule provides guidance for soil, groundwater, and surface water cleanup levels that can be developed on a site-by-site basis.	These target levels for groundwater (Table II) would be used in determining cleanup goals for groundwater.

TABLE 5-2

ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE N-2: LANDFILL CONTAINMENT, LUCs, AND MONITORING
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	EVALUATION/ACTION TO BE TAKEN
FEDERAL REQUIREMENTS				
Resource Conservation and Recovery Act (RCRA)	42 United States Code (U.S.C.) §§ 6901 et seq.	Applicable	Florida has been delegated the authority to administer these RCRA standards through its state hazardous waste management regulations. These provisions have been adopted by the state.	Wastes generated during well purging must be classified as hazardous or non-hazardous. Hazardous waste must be managed according to generator requirements until disposed.
STATE OF FLORIDA REQUIREMENTS				
Florida Hazardous Waste Rules - Definition and Identification	Chapter 62-730.030, Florida Administrative Code (F.A.C.) [40 Code of Federal Regulations (CFR) 261.3]	Applicable	Adopts by reference sections of the federal hazardous waste regulations and establishes minor additions to these regulations concerning the generation, storage, treatment, transportation, and disposal of hazardous wastes.	These regulations would apply to waste such as monitoring well purge water.
Florida Hazardous Waste Rules - Standards Applicable to Generators of Hazardous Waste	Chapter 62-730.160, F.A.C. (40 CFR 262 Subparts A, B, and C)	Applicable	Establishes manifesting and pre-transport requirements for hazardous waste.	These regulations would apply if wastes such as purge water are determined to meet hazardous and need to be stored prior to off-site disposal.
Florida Hazardous Waste - Requirements for Remedial Action	Chapter 62-730.225(4), F.A.C.	Applicable	Requires warning signs at sites suspected or confirmed to be contaminated with hazardous waste.	This requirement will be met.

TABLE 5-3

ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE S-2: LANDFILL CONTAINMENT, LUCs, SOURCE AREA GROUNDWATER CONTROL VIA MNA, AND MONITORING
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	EVALUATION/ACTION TO BE TAKEN
FEDERAL REQUIREMENTS				
Safe Drinking Water Act Regulations, Maximum Contaminant Levels (MCLs)	40 Code of Federal Regulations (CFR) Part 141, Subpart G	Relevant and Appropriate	Establishes enforceable standards for potable water for specific contaminants that have been determined to adversely affect human health.	Would be used as protective levels for groundwater that is a potential drinking water source.
Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites	-	TBC	Risk-based United States Environmental Protection Agency (EPA) screening levels calculated using the latest toxicity values, default exposure assumptions and physical and chemical properties.	The ratio of exposure point concentration (EPC) to EPA RSLs is used to estimate site risk.
STATE OF FLORIDA REQUIRMENTS				
Groundwater Classes, Standards and Exemptions	Chapter 62-520, Florida Administrative Code (F.A.C.)	Applicable	This rule designates the groundwater of the state into five classes and establishes minimum “free from” criteria.	Used to establish cleanup goals for groundwater that is a potential source of drinking water. Surficial groundwater at the site is classified as G-II.
Drinking Water Criteria	Chapter 62-550.310, F.A.C.	Relevant and Appropriate	This rule provides primary and secondary drinking water quality criteria.	Any pertinent state primary drinking water standard(s) more stringent than federal MCLs will be used to establish groundwater cleanup goals for this site.
Contaminant Cleanup Target Levels Rule	Chapter 62-777.170, F.A.C.	Relevant and Appropriate	This rule provides guidance for soil, groundwater, and surface water cleanup levels that can be developed on a site-by-site basis.	These target levels for groundwater (Table II) would be used in determining cleanup goals for groundwater.

TABLE 5-4

ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE S-2: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTROL VIA MNA, LUCs, MONITORING
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	EVALUATION/ACTION TO BE TAKEN
FEDERAL REQUIREMENTS				
Resource Conservation and Recovery Act (RCRA)	42 United States Code (U.S.C.) §§ 6901 et seq.	Applicable	Florida has been delegated the authority to administer these RCRA standards through its state hazardous waste management regulations. These provisions have been adopted by the state.	Wastes generated during well purging must be classified as hazardous or non-hazardous. Hazardous waste must be managed according to generator requirements until disposed.
STATE OF FLORIDA REQUIREMENTS				
Florida Hazardous Waste Rules - Definition and Identification	Chapter 62-730.030, Florida Administrative Code (F.A.C.) [40 Code of Federal Regulations (CFR) 261.3]	Applicable	Adopts by reference sections of the federal hazardous waste regulations and establishes minor additions to these regulations concerning the generation, storage, treatment, transportation, and disposal of hazardous wastes.	These regulations would apply to waste such as monitoring well purge water.
Florida Hazardous Waste Rules - Standards Applicable to Generators of Hazardous Waste	Chapter 62-730.160, F.A.C. (40 CFR 262 Subparts A, B, and C)	Applicable	Establishes manifesting and pre-transport requirements for hazardous waste.	These regulations would apply if wastes such as purge water and drill cuttings are determined to meet hazardous and need to be stored prior to off-site disposal.
Florida Hazardous Waste - Requirements for Remedial Action	Chapter 62-730.225(4), F.A.C.	Applicable	Requires warning signs at sites suspected or confirmed to be contaminated with hazardous waste.	This requirement will be met.

TABLE 5-5

ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE S-3: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTAIMENT VIA A BIOBARRIER, LUCs, AND MONITORING
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	EVALUATION/ACTION TO BE TAKEN
FEDERAL REQUIREMENTS				
Safe Drinking Water Act (SDWA) Regulations, Maximum Contaminant Levels (MCLs)	40 Code of Federal Regulations (CFR) Part 141, Subpart G	Relevant and Appropriate	Establishes enforceable standards for potable water for specific contaminants that have been determined to adversely affect human health.	Would be used as protective levels for groundwater that is a potential drinking water source.
Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites	-	TBC	Risk-based United States Environmental Protection Agency (EPA) screening levels calculated using the latest toxicity values, default exposure assumptions and physical and chemical properties.	The ratio of exposure point concentration (EPC) to EPA RSLs is used to estimate site risk.
STATE OF FLORIDA REQUIRMENTS				
Groundwater Classes, Standards and Exemptions	Chapter 62-520, Florida Administrative Code (F.A.C.)	Applicable	This rule designates the groundwater of the state into five classes and establishes minimum “free from” criteria.	Used to establish cleanup goals for groundwater that is a potential source of drinking water. Surficial groundwater at the site is classified as G-II.
Drinking Water Criteria	Chapter 62-550.310, F.A.C.	Relevant and Appropriate	This rule provides primary and secondary drinking water quality criteria.	Any pertinent state primary drinking water standard(s) more stringent than federal MCLs will be used to establish groundwater cleanup goals for this site.
Contaminant Cleanup Target Levels Rule	Chapter 62-777.170, F.A.C.	Relevant and Appropriate	This rule provides guidance for soil, groundwater, and surface water cleanup levels that can be developed on a site-by-site basis.	These target levels for groundwater (Table II) would be used in determining cleanup goals for groundwater.

TABLE 5-6

ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE S-3: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTROL VIA A BIOBARRIER, LUCs, AND MONITORING
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	EVALUATION/ACTION TO BE TAKEN
FEDERAL REQUIREMENTS				
Resource Conservation and Recovery Act (RCRA)	42 United States Code (U.S.C.) §§ 6901 et seq.	Applicable	Florida has been delegated the authority to administer these RCRA standards through its state hazardous waste management regulations. These provisions have been adopted by the state.	Wastes generated during well installation and well purging must be classified as hazardous or non-hazardous. Hazardous waste must be managed according to generator requirements until disposed.
Solid Waste Disposal Act Regulations, Underground Injection Control (UIC) Regulations	40 Code of Federal Regulations (CFR) Parts 144 Subpart G, 146 Subpart F, and 147.500	Relevant and Appropriate	Establishes minimum program and performance standards for underground injection programs. Technical criteria and standards for siting, operation, and maintenance, are included in Part 146.	UIC regulations are relevant and appropriate for the injection of emiulsified oil substrate (EOS).
STATE OF FLORIDA REQUIREMENTS				
Florida Hazardous Waste Rules - Definition and Identification	Chapter 62-730.030, Florida Administrative Code (F.A.C.) (40 CFR 261.3)	Applicable	Adopts by reference sections of the federal hazardous waste regulations and establishes minor additions to these regulations concerning the generation, storage, treatment, transportation, and disposal of hazardous wastes.	These regulations would apply to waste such as monitoring well purge water and drill cuttings.
Florida Hazardous Waste Rules - Standards Applicable to Generators of Hazardous Waste	Chapter 62-730.160, F.A.C. (40 CFR 262 Subparts A, B, and C)	Applicable	Establishes manifesting and pre-transport requirements for hazardous waste.	These regulations would apply if wastes such as purge water and drill cuttings are determined to meet hazardous and need to be stored prior to off-site disposal.

TABLE 5-6

ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE S-3: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTROL VIA A BIOBARRIER, LUCs, AND MONITORING
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	EVALUATION/ACTION TO BE TAKEN
STATE OF FLORIDA REQUIREMENTS (CONT.)				
Florida Underground Injection Control Regulations	Chapter 62-528.605, .610, .615, .625, and .645, F.A.C.	Applicable	Establishes a state Underground Injection Control Program consistent with federal requirements and establishes standards and criteria for construction, operation, monitoring, plugging, and abandonment for Class V wells.	Injection wells for EOS would meet these requirements.
Florida Water Well Permitting and Construction Requirements	Chapter 62-532.500, F.A.C.	Applicable	Establishes minimum standards for the location, construction, repair, and abandonment of water wells. Permitting requirements and procedures are established.	The substantive requirements for permitting would be met for the construction injection wells.
Florida Hazardous Waste - Requirements for Remedial Action	Chapter 62-730.225(4), F.A.C.	Applicable	Requires warning signs at sites suspected or confirmed to be contaminated with hazardous waste.	This requirement will be met.
Florida Post Active Remediation Monitoring Regulation	Chapter 62-780.750(4)(a) thru (c), F.A.C	Applicable	Specifies minimum number of wells and sampling frequency for conducting groundwater monitoring as part of post active remediation monitoring.	Post-active remediation monitoring will follow the relevant requirements of this rule.
Florida Regulation of Stormwater Discharge	Chapter 6225.025(7), F.A.C.	Applicable	Establishes requirements for stormwater discharges to ensure protection of the surface water of the state.	Erosion and stormwater control best management practices will be implemented during well installation to retain sediment on site.
Florida General Pollutant Emission Limitation Standards	Chapter 62-296.320, F.A.C.	Applicable	Establishes requirements for generation of unconfined emissions of particulate matter from any activity.	Requires reasonable precautions such as application of water or other dust suppressants to control emission from construction activities, such as well installation.

TABLE 6-1

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES FOR THE NORTHERN AREA OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Criteria	Alternative N-1: No Action	Alternative N-2: Landfill Containment, LUCs, and Monitoring
THRESHOLD CRITERIA		
Overall Protection of Human Health and Environment		
Human Health Protection	No reduction in risk.	Maintenance of soil cover and Land Use Controls (LUCs) would eliminate exposure to buried waste. LUCs would also prevent exposure to source area groundwater.
Environmental Protection	Environmental Risk Assessment (ERA) indicates no risk to environment.	ERA indicates no risk to environment.
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)		
Compliance with Chemical-Specific ARARs	There would be no monitoring to determine whether groundwater and surface water concentrations meet Florida Department of Environmental Protection (FDEP) Cleanup Target Level (CTL)-based preliminary remediation goals (PRGs).	Volatile organic compound (VOC) concentrations from groundwater and surface water samples collected during long-term monitoring would be compared to CTL-based PRGs.
Compliance with Action-Specific ARARs	Not applicable.	Will meet ARARs.
Compliance with Location-Specific ARARs	Not applicable.	Will meet ARARs.
Compliance with other criteria	Not applicable.	

TABLE 6-1

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES FOR THE NORTHERN AREA OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Criteria	Alternative N-1: No Action	Alternative N-2: Landfill Containment, LUCs, and Monitoring
BALANCING CRITERIA		
Long-Term Effectiveness and Permanence		
Magnitude of Residential Risk	All carcinogenic risks are already within the United States Environmental Protection Agency's (EPA's) acceptable range of 1×10^{-6} to 1×10^{-4}. All non-carcinogenic hazards are below 1.0 .	All carcinogenic risks are already within the EPA's acceptable range of 1×10^{-6} to 1×10^{-4}. All non-carcinogenic hazards are below 1.0 . Data from long-term monitoring of groundwater and surface water would indicate changes in risk and hazard.
Need for Five-year Review	Not applicable	Required
Need for Long-term Management	Not applicable	Management of potential future releases from landfill material required for >30 years.
Adequacy and Reliability of Controls	Not applicable	Data from long-term monitoring of groundwater and surface water would indicate changes concentrations.
Reduction of Toxicity, Mobility, or Volume through Treatment		
Amount Destroyed or Treated	None	None
Reduction in Toxicity, Mobility, or Volume	None	None. Data from long-term monitoring of groundwater and surface water would indicate changes concentrations.
Degree to which Treatment is Irreversible	No active treatment	No active treatment
Type and Quantity of Residuals Remaining after Treatment	No active treatment	No active treatment
Short-Term Effectiveness		
Community Protection during Implementation	Not applicable	Negligible risks
Worker Protection during Implementation	Not applicable	Low risk from sampling. Moderate risk from drilling if installation of monitoring wells is required.
Environmental Impacts	Not applicable	None
Time until Remedial Action Objectives Achieved	Not applicable	Upon implementation

TABLE 6-1

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES FOR THE NORTHERN AREA OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Criteria	Alternative N-1: No Action	Alternative N-2: Landfill Containment, LUCs, and Monitoring
BALANCING CRITERIA (cont.)		
Implementablity		
Ability to Construct and Operate the Technology	Not applicable	Contractors are available for cover maintenance and long-term monitoring.
Reliability of the Technology	Not applicable	Moderately reliable
Ease of Undertaking Additional Remedial Actions, if necessary	Easily implementable	Easily implementable
Ability to Monitor Effectiveness of Remedy	Not applicable	Not applicable
Administrative Requirements with Regulators	None	Permits may be required if wells are installed.
Availability of Off-Site Treatment, Storage, and Disposal Facilities	None required	None required
Availability of Necessary Equipment and Specialists	None required	Available
Availability of Prospective Technologies	None required	None required
Costs		
Capital Costs	$0	$0
Annual Operations and Maintenance	$0	$306,000
Total Present Worth Project Costs	$0	$530,000

TABLE 6-2

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES FOR THE SOUTHERN AREA OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Criteria	**Alternative S-1:** **No Action**	**Alternative S-2:** **Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring**	**Alternative S-3:** **Landfill Containment, Source Area Groundwater Control via a Biobarrier, LUCs, and Monitoring**
THRESHOLD CRITERIA			
Overall Protection of Human Health and Environment			
Human Health Protection	No reduction in risk.	Maintenance of soil cover and land use controls (LUCs) eliminate exposure to buried waste. LUCs also prevent exposure to on-site groundwater. Monitored natural attenuation (MNA) reduces migration of contamination to off-site groundwater.	Maintenance of soil cover and LUCs eliminate exposure to buried waste. LUCs also prevent exposure to on-site groundwater. Enhanced biodegradation reduces migration of contamination to off-site groundwater.
Environmental Protection	Environmental Risk Assessment (ERA) indicates no risk to environment.	ERA indicates no risk to environment.	ERA indicates no risk to environment.
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)			
Compliance with Chemical-Specific ARARs	There would be no monitoring to determine whether groundwater and surface water concentrations meet Florida Department of Environmental Protection (FDEP) Cleanup Target Level (CTL)-based preliminary remediation goals (PRGs).	Will meet ARARs. VOC concentrations will be reduced below PRGs.	Will meet ARARs. VOC concentrations will be reduced below PRGs.
Compliance with Action-Specific ARARs	Not applicable	Will meet ARARs.	Will meet ARARs.
Compliance with Location-Specific ARARs	Not applicable	Will meet ARARs.	Will meet ARARs.
Compliance with other criteria	Not applicable	None	Permits may be required for installing wells and injecting chemicals.

TABLE 6-2

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES FOR THE SOUTHERN AREA OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Criteria	**Alternative S-1:** **No Action**	**Alternative S-2:** **Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring**	**Alternative S-3:** **Landfill Containment, Source Area Groundwater Control via a Biobarrier, LUCs, and Monitoring**
BALANCING CRITERIA			
Long-Term Effectiveness and Permanence			
Magnitude of Residential Risk	All carcinogenic risks are already below or within the United States Environmental Protection Agency's (EPA's) acceptable range of 1×10^{-6} to 1×10^{-4}. All non-carcinogenic hazards are below 1.0 except for groundwater (2.76).	All carcinogenic risks are already within the EPA's acceptable range of 1 x 10-6 to 1 x 10-4. All non-carcinogenic hazards are below 1.0 except for groundwater (2.44). MNA would reduce contaminant concentrations, reducing risk.	All carcinogenic risks are already within the EPA's acceptable range of 1 x 10-6 to 1 x 10-4. All non-carcinogenic hazards are below 1.0 except for groundwater (2.44). Enhanced biodegradation would reduce contaminant concentrations, reducing risk.
Need for Five-year Review	Not applicable	Required	Required
Need for Long-term Management	Not applicable	Soil cover maintenance and LUCs required as long as the landfill remains. Long-term management likely to continue for >30 years.	Soil cover maintenance and LUCs required as long as the landfill remains. Groundwater contamination would be addressed by enhanced biodegradation. Long-term management may continue for >30 years.
Adequacy and Reliability of Controls	Not applicable	Performance of natural attenuation checked through monitoring.	Treatability testing for enhanced biodegradation indicates reliability. Performance of biobarrier would be checked through monitoring.

TABLE 6-2

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES FOR THE SOUTHERN AREA OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Criteria	Alternative S-1: No Action	Alternative S-2: Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring	Alternative S-3: Landfill Containment, Source Area Groundwater Control via a Biobarrier, LUCs, and Monitoring
BALANCING CRITERIA (cont.)			
Reduction of Toxicity, Mobility, or Volume through Treatment			
Amount Destroyed or Treated	None	Contaminant destruction in groundwater through MNA	Contaminant destruction in groundwater up to 90 percent through enhanced biodegradation chemicals.
Reduction in Toxicity, Mobility, or Volume	None	Toxicity reduced through biodegradation.	Toxicity reduced through biodegradation.
Degree to which Treatment is Irreversible	No active treatment.	Passive treatment only.	Enhanced biodegradation is irreversible.
Type and Quantity of Residuals Remaining after Treatment	No active treatment.	Passive treatment only.	No residuals.
Short-Term Effectiveness			
Community Protection during Implementation	Not applicable	Negligible risks.	Low risk to community.
Worker Protection during Implementation	Not applicable	Low risk from sampling.	Low risk from sampling. Moderate risk from drilling and handling of chemicals.
Environmental Impacts	Not applicable	None	Impacts (from dust emissions, soil erosion, etc.) can be controlled.
Time until Remedial Action Objectives Achieved	Not applicable	Upon implementation.	Upon implementation.

TABLE 6-2

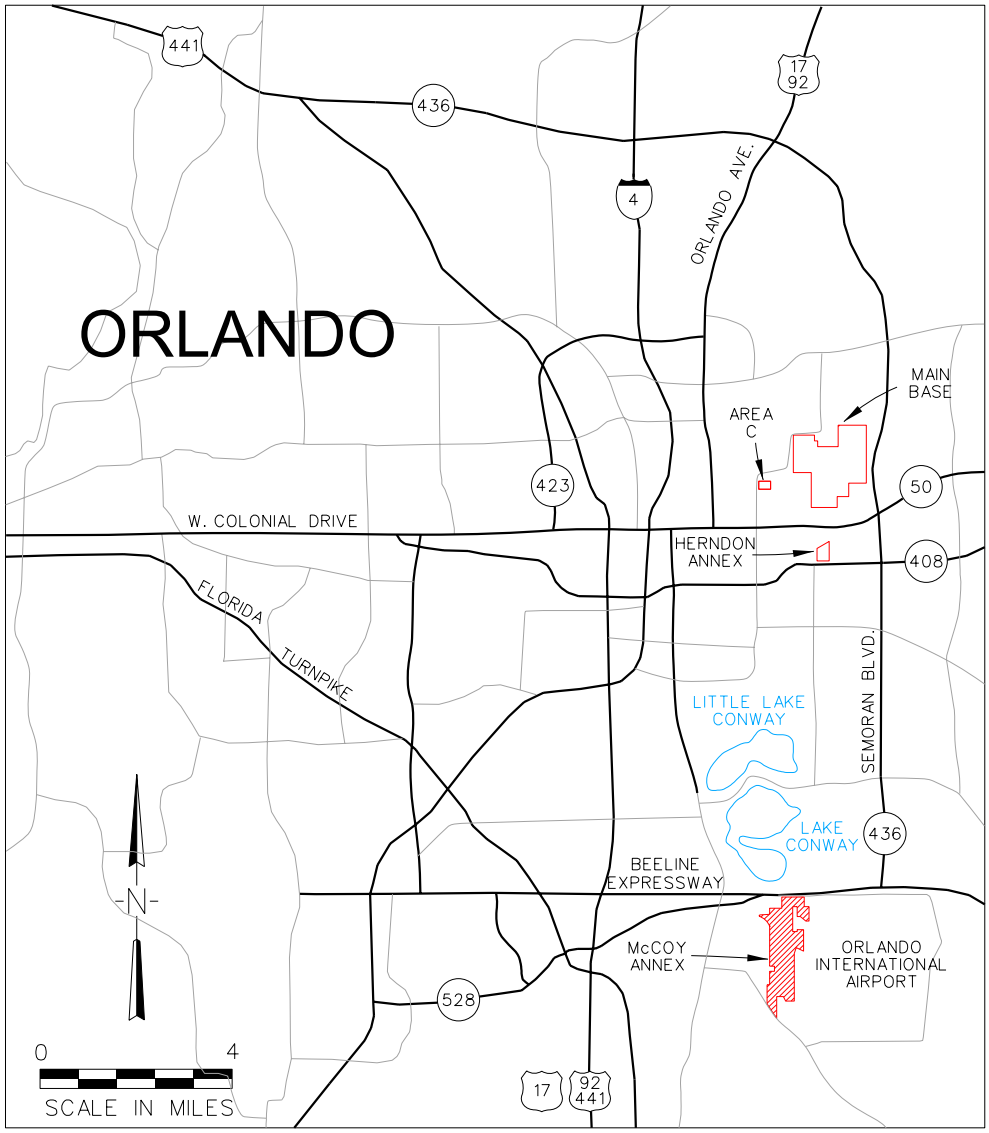
SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES FOR THE SOUTHERN AREA OPERABLE UNIT 2

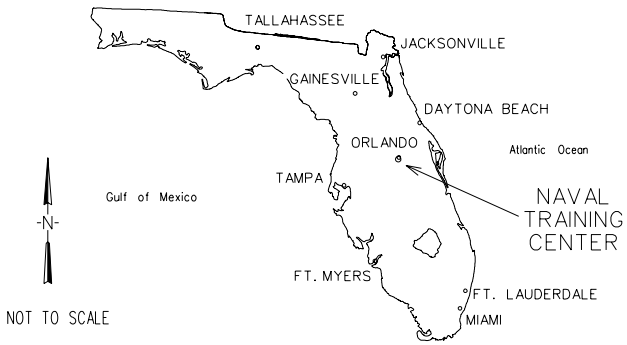
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Criteria	Alternative S-1: No Action	Alternative S-2: Landfill Containment, Source Area Groundwater Control via MNA, LUCs, and Monitoring	Alternative S-3: Landfill Containment, Source Area Groundwater Control via a Biobarrier, LUCs, and Monitoring
BALANCING CRITERIA (cont.)			
Implementablity			
Ability to Construct and Operate the Technology	Not applicable	Contractors are available for cover maintenance and monitoring.	Contractors are available for cover maintenance, monitoring, well installation, and bioenhancement chemical injection.
Reliability of the Technology	Not applicable	Moderately reliable.	Moderately reliable.
Ease of Undertaking Additional Remedial Actions, if necessary	Easily implementable.	Easily implementable.	Easily implementable.
Ability to Monitor Effectiveness of Remedy	Not applicable	Groundwater and surface water data from monitoring would indicate the effectiveness of natural attenuation.	Groundwater and surface water data from monitoring and biobarrier monitoring would indicate the effectiveness of enhanced biodegradation.
Administrative Requirements with Regulators	None	None.	Permits may be required for well installation.
Availability of Off-Site Treatment, Storage, and Disposal Facilities	None required	None required	None required
Availability of Necessary Equipment and Specialists	None required	Available	Available
Availability of Prospective Technologies	None required	Available	Limited availability
Costs			
Capital Costs	$0	$0	$1,180,000
Annual Operations and Maintenance	$0	$521,000	$1,228,000
Total Present Worth Project Costs	$0	$749,000	$4,348,000

FIGURES

K:DGN\NAVY\ORLANDO\SITES\ou2\ou2-fss-02.dgn / 6-17-2009 FOCUSED FEASIBILITY STUDY





DRAWN BY WRW	DATE 6-17-2009	**FACILITY LOCATION MAP OPERABLE UNIT 2**	CONTRACT NO. **N62467-04-D-0055**
CHECKED BY TKG	DATE 6-17-2009		OWNER NO. ----------
REVISED BY ---	DATE ---------	**NAVAL TRAINING CENTER ORLANDO, FLORIDA**	APPROVED BY --- / DATE ---------
SCALE AS NOTED			DRAWING NO. **FIGURE 1-1** / REV. **0**

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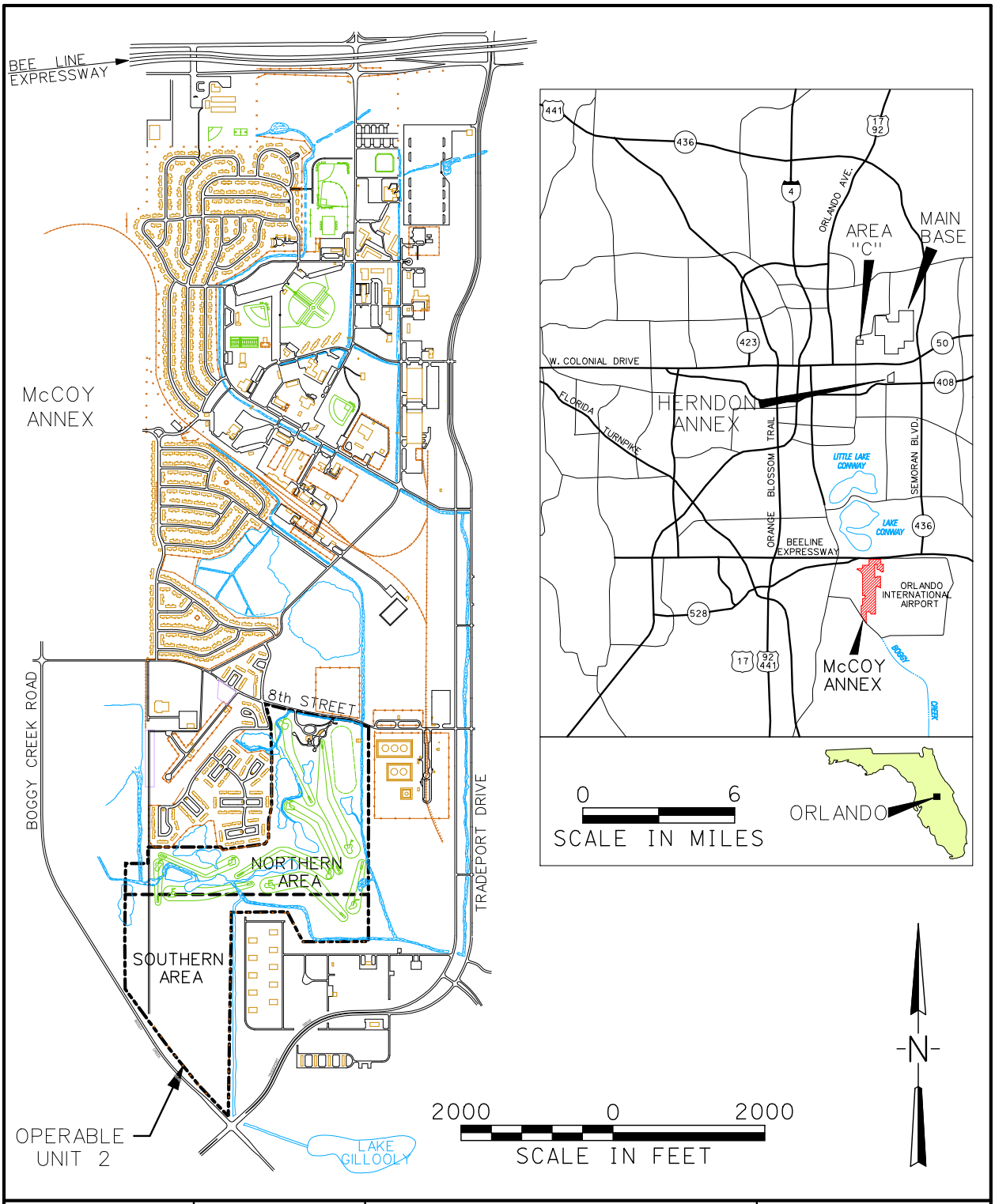

DRAWN BY WRW	DATE 6/11/2010	SITE LOCATION MAP OPERABLE UNIT 2 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 6/11/2010		OWNER NO. --------
REVISED BY WRW	DATE 12/20/2010		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 1-2 / REV. 0

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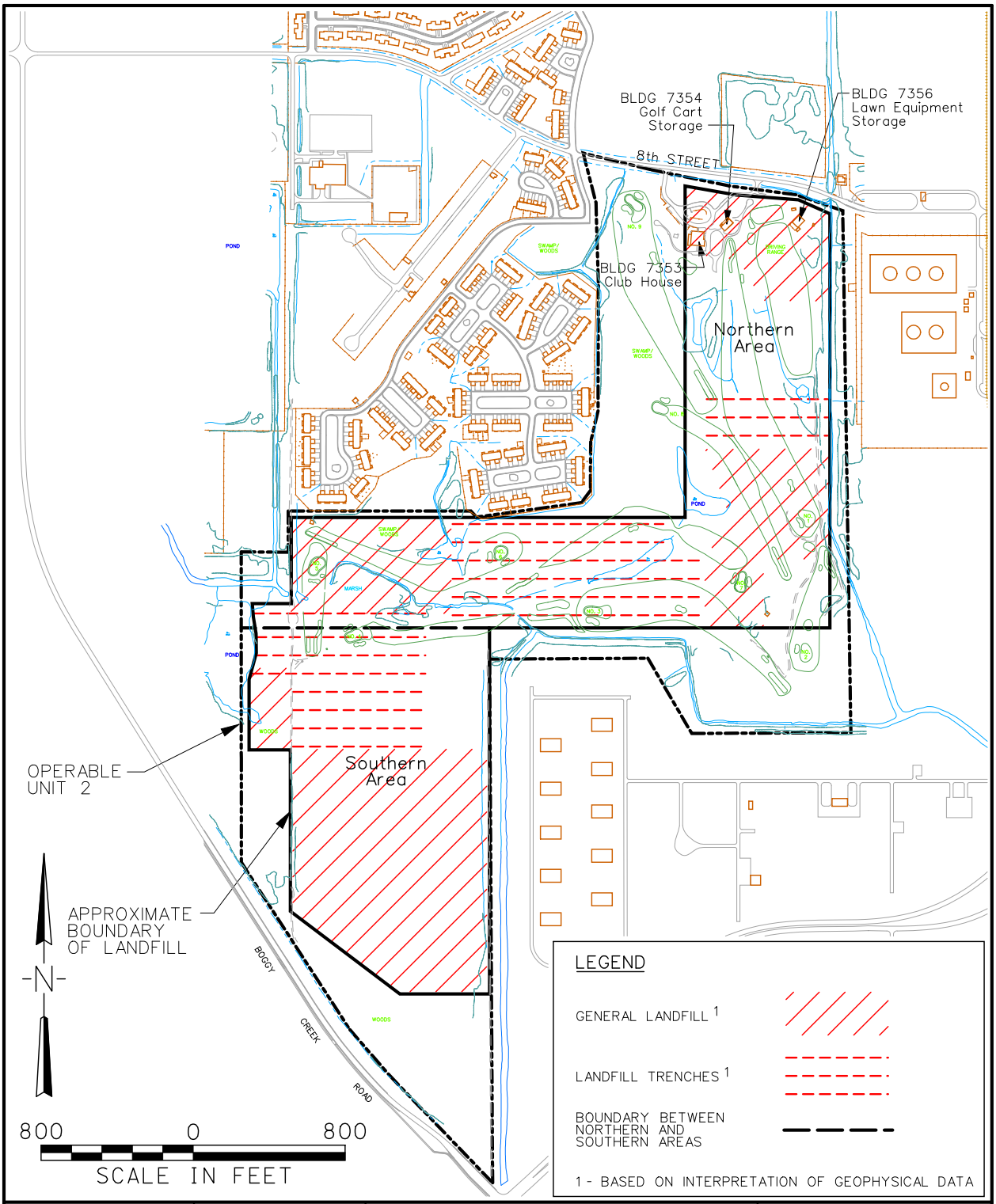

DRAWN BY WRW	DATE 6/11/2010	LANDFILL BOUNDARIES OPERABLE UNIT 2	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 6/11/2010		OWNER NO. ----
REVISED BY WRW	DATE 12-10-2010	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- / DATE ----------
SCALE AS NOTED			DRAWING NO. FIGURE 1-3 / REV. 0

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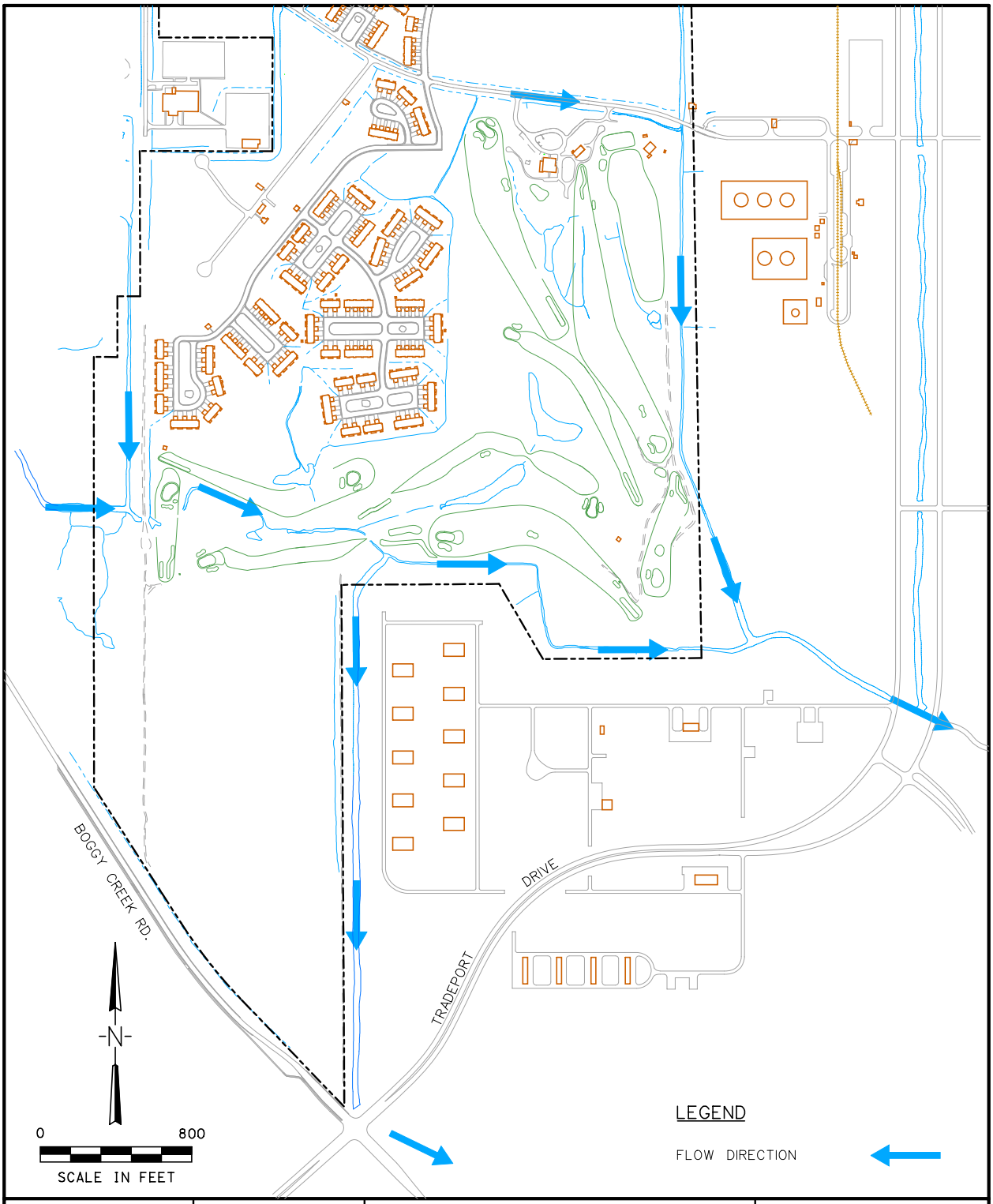

DRAWN BY WRW	DATE 5/18/2010	SURFACE WATER FLOW OPERABLE UNIT 2 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/18/2010		OWNER NO. ----------
REVISED BY ---	DATE ---------		APPROVED BY --- / DATE ---------
SCALE AS NOTED			DRAWING NO. FIGURE 1-4 / REV. 0

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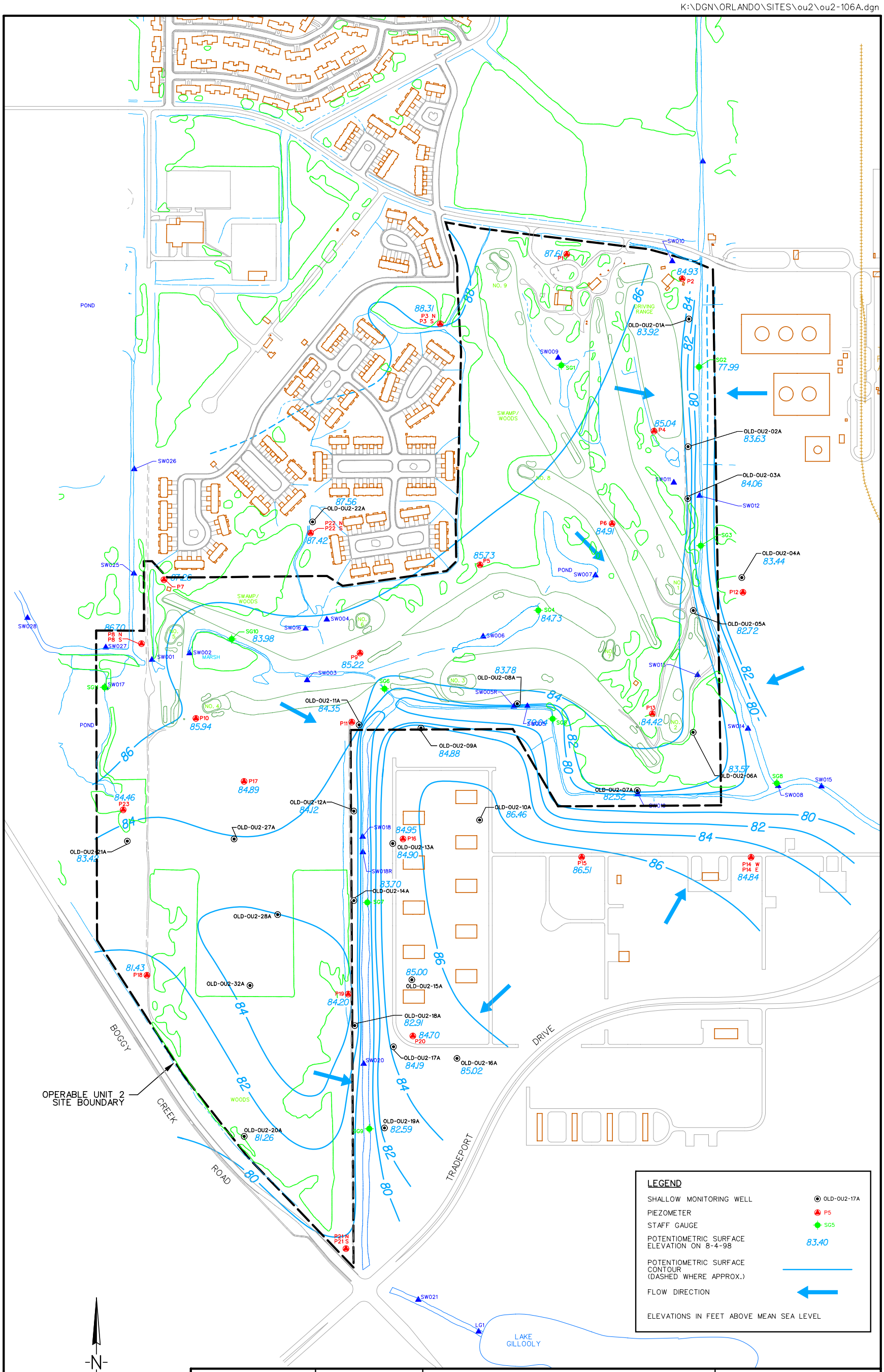

DRAWN BY WRW	DATE 5/18/2010	POTENTIOMETRIC SURFACE SHALLOW SURFICIAL AQUIFER OPERABLE UNIT 2 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/18/2010		OWNER NO. -------
REVISED BY ---	DATE ----		APPROVED BY --- / DATE ----
SCALE AS NOTED			DRAWING NO. FIGURE 1-5 / REV. 0

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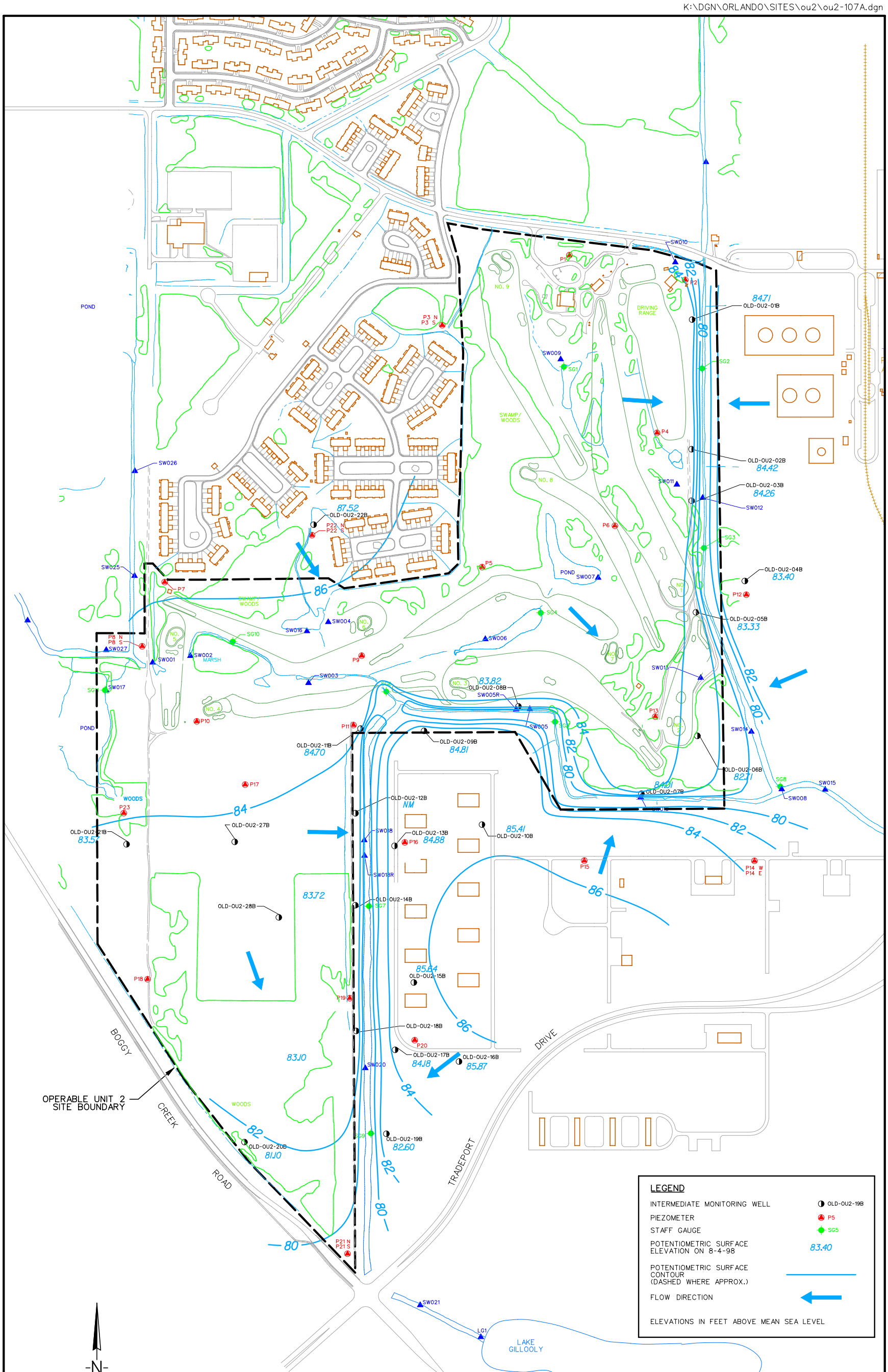

DRAWN BY WRW	DATE 5/18/2010	POTENTIOMETRIC SURFACE INTERMEDIATE SURFICIAL AQUIFER OPERABLE UNIT 2 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/18/2010		OWNER NO. -------
REVISED BY ---	DATE ----		APPROVED BY --- / DATE ----
SCALE AS NOTED			DRAWING NO. FIGURE 1-6 / REV. 0

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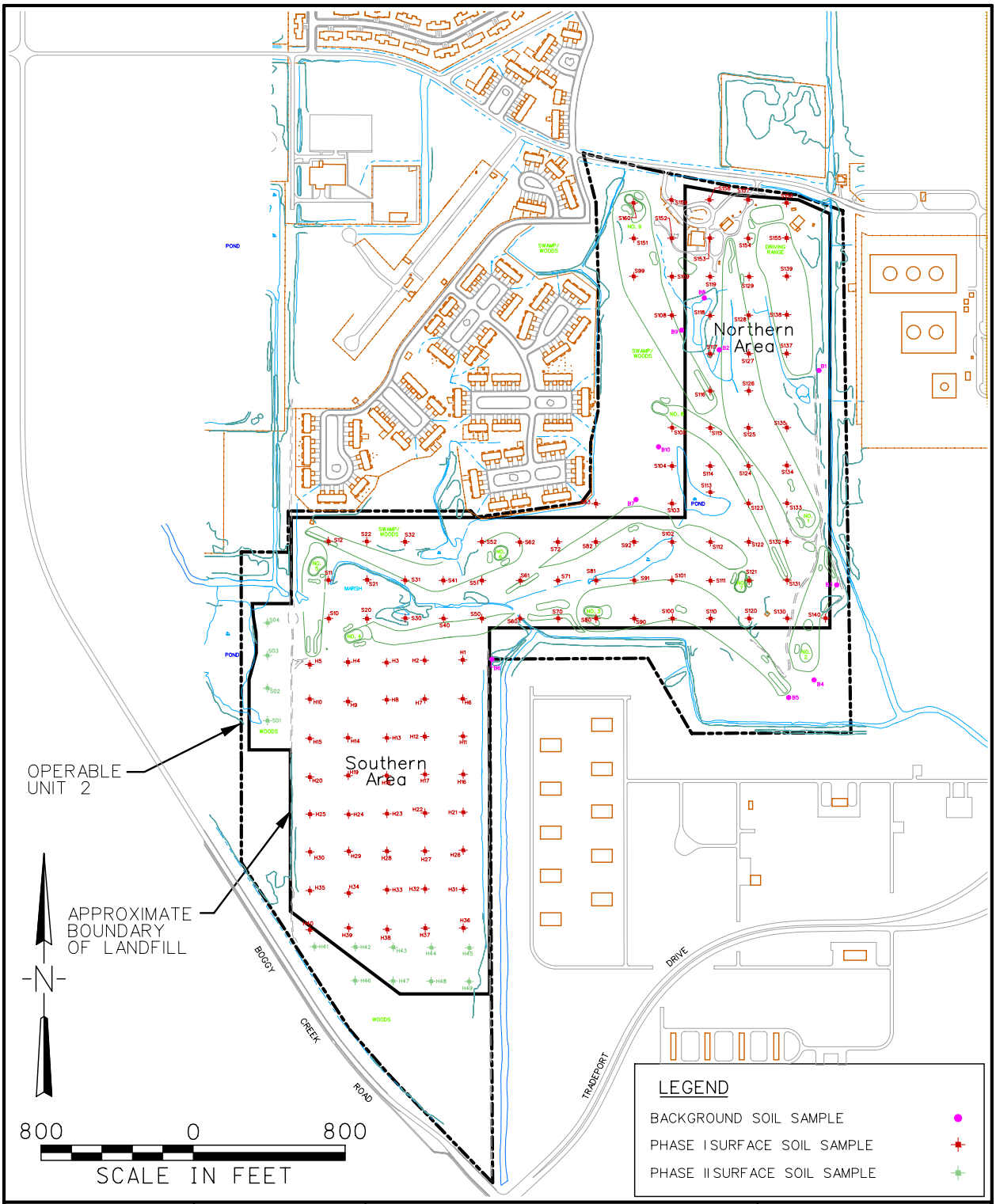
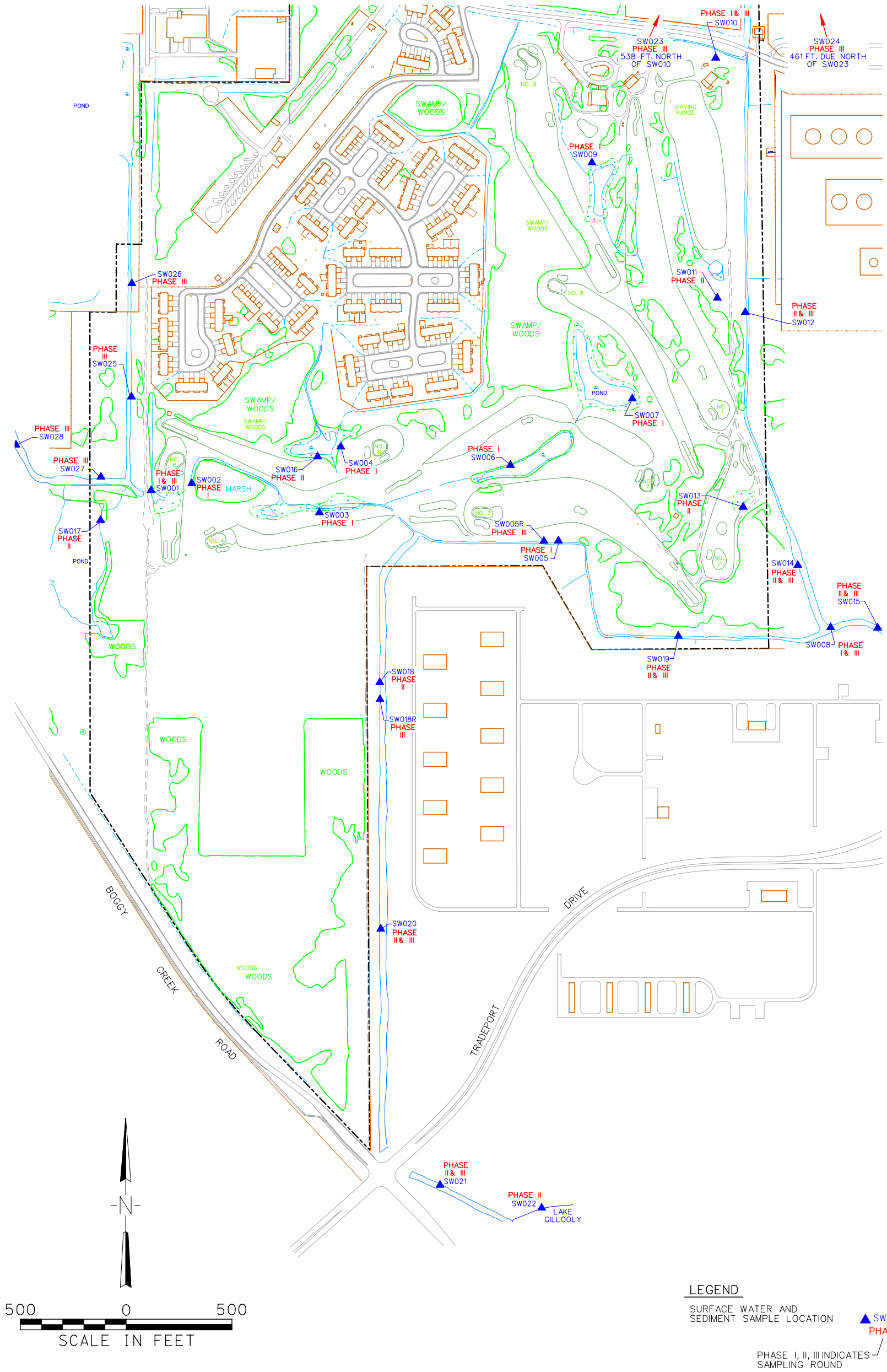


DRAWN BY WRW	DATE 3-11-2010	RI SURFACE SOIL SAMPLE LOCATIONS OPERABLE UNIT 2	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 3-11-2010		OWNER NO. --------
REVISED BY ---	DATE --------	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 1-7 / REV. 0

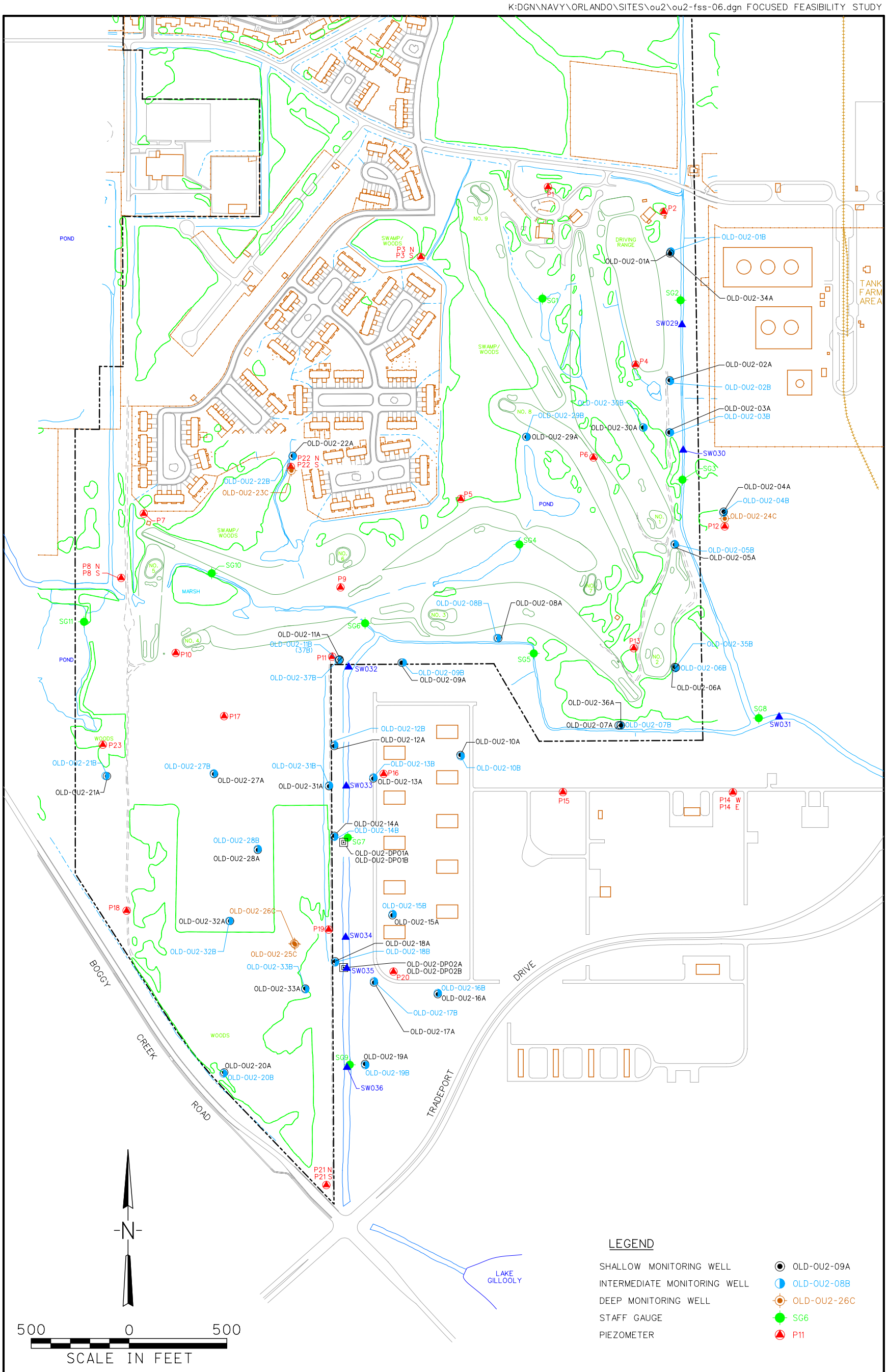


LEGEND

SURFACE WATER AND SEDIMENT SAMPLE LOCATION — SW020 PHASE I

PHASE I, II, III INDICATES SAMPLING ROUND

DRAWN BY WRW	DATE 3-11-2010	RI SURFACE WATER/SEDIMENT SAMPLE LOCATIONS OPERABLE UNIT 2	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 3-11-2010		OWNER NO. ---------
REVISED BY ---	DATE ---------	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- / DATE ---------
SCALE AS NOTED			DRAWING NO. FIGURE 1-8 / REV. 0



DRAWN BY WRW	DATE 3-11-2010	RI GROUNDWATER SAMPLE LOCATIONS OPERABLE UNIT 2 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 3-11-2010		OWNER NO. --------
REVISED BY ---	DATE --------		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 1-9 / REV. 0

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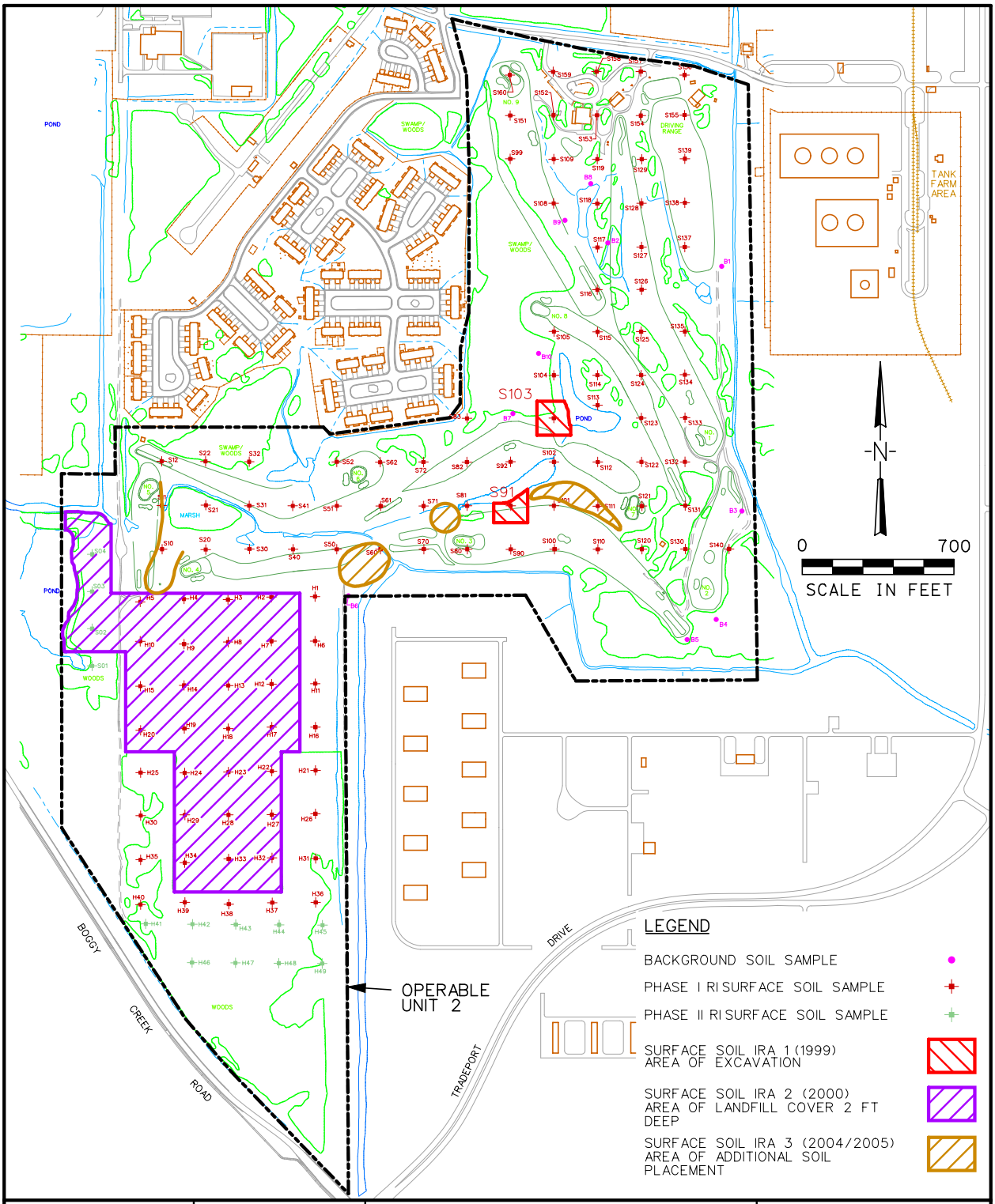

DRAWN BY WRW	DATE 5/19/2010	SURFACE SOIL IRA LOCATIONS OPERABLE UNIT 2	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/19/2010		OWNER NO. -------
REVISED BY ---	DATE ---------		APPROVED BY --- / DATE ---------
SCALE AS NOTED		NAVAL TRAINING CENTER ORLANDO, FLORIDA	DRAWING NO. FIGURE 1-10 / REV. 0

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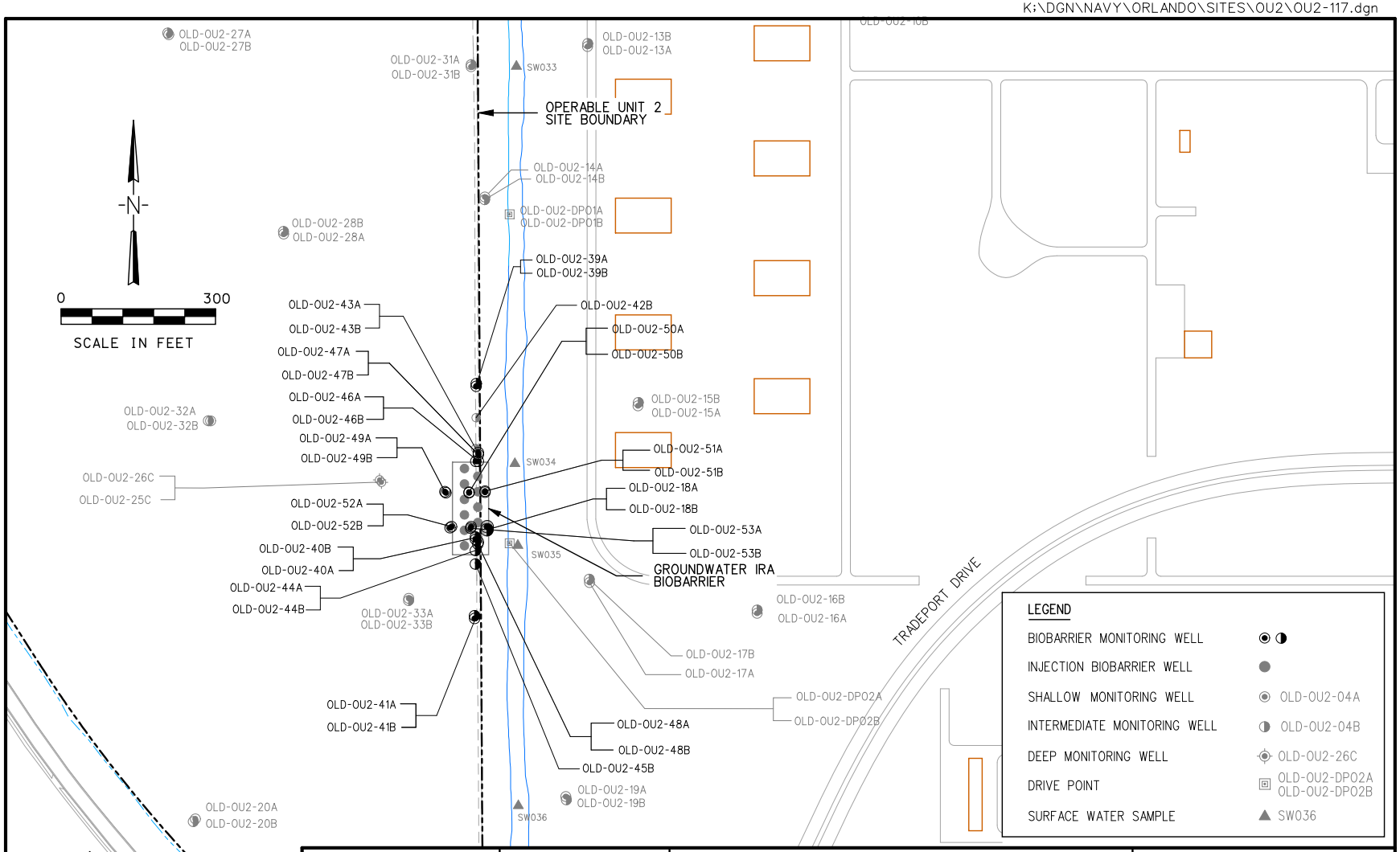

DRAWN BY WRW	DATE 6/11/2010	GROUNDWATER IRA OPERABLE UNIT 2	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 6/11/2010		OWNER NO. --------
REVISED BY WRW	DATE 12/17/2010	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 1-11 / REV. 0

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NBRC-BV.dgn

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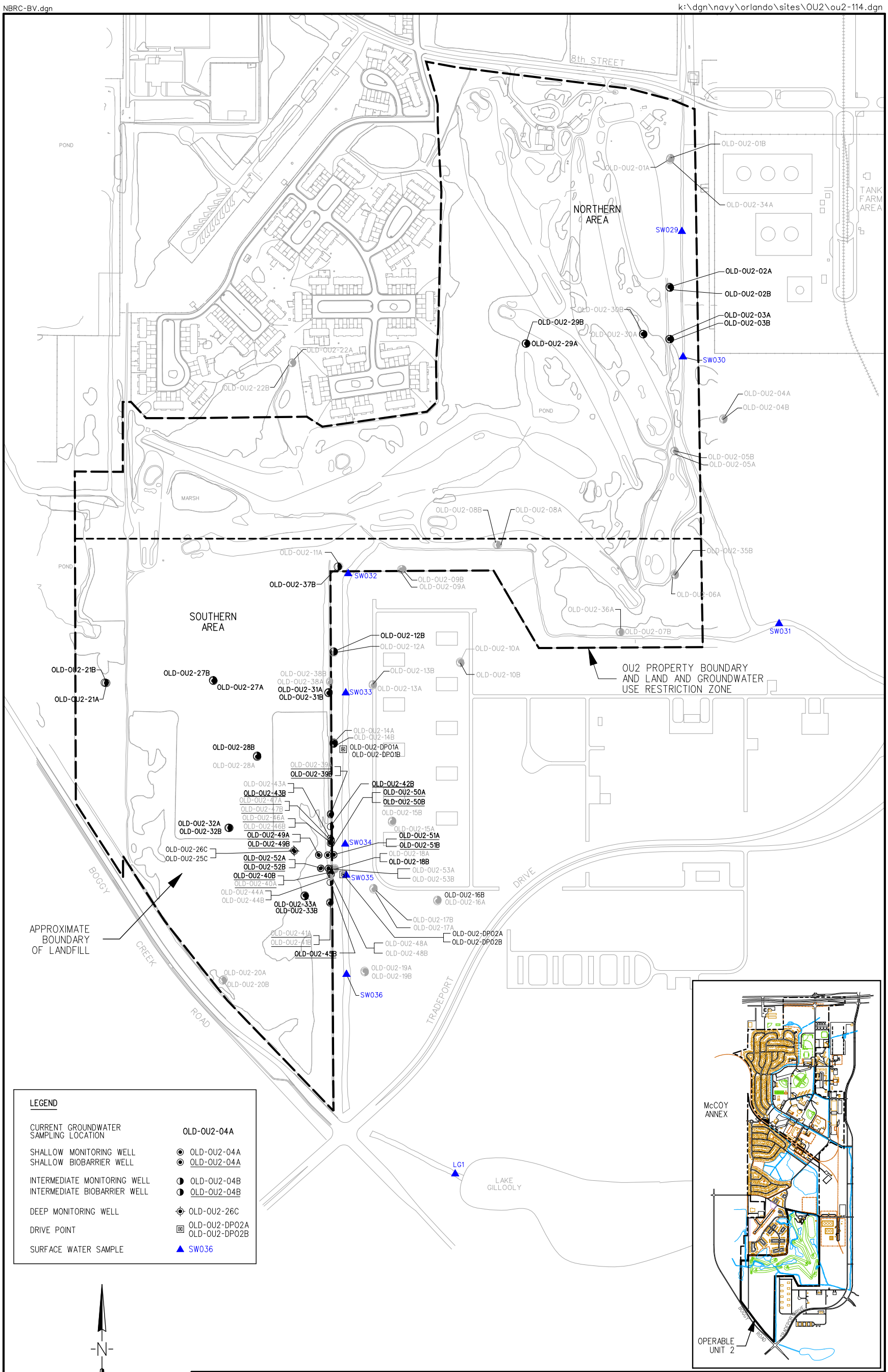

DRAWN BY WRW	DATE 6/11/2010	SURFACE WATER AND GROUNDWATER MONITORING LOCATIONS OPERABLE UNIT 2 - McCOY ANNEX	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 6/11/2010		OWNER NO. ---------
REVISED BY WRW	DATE 12/20/2010	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- / DATE ---------
SCALE AS NOTED			DRAWING NO. FIGURE 2-1 / REV. 0

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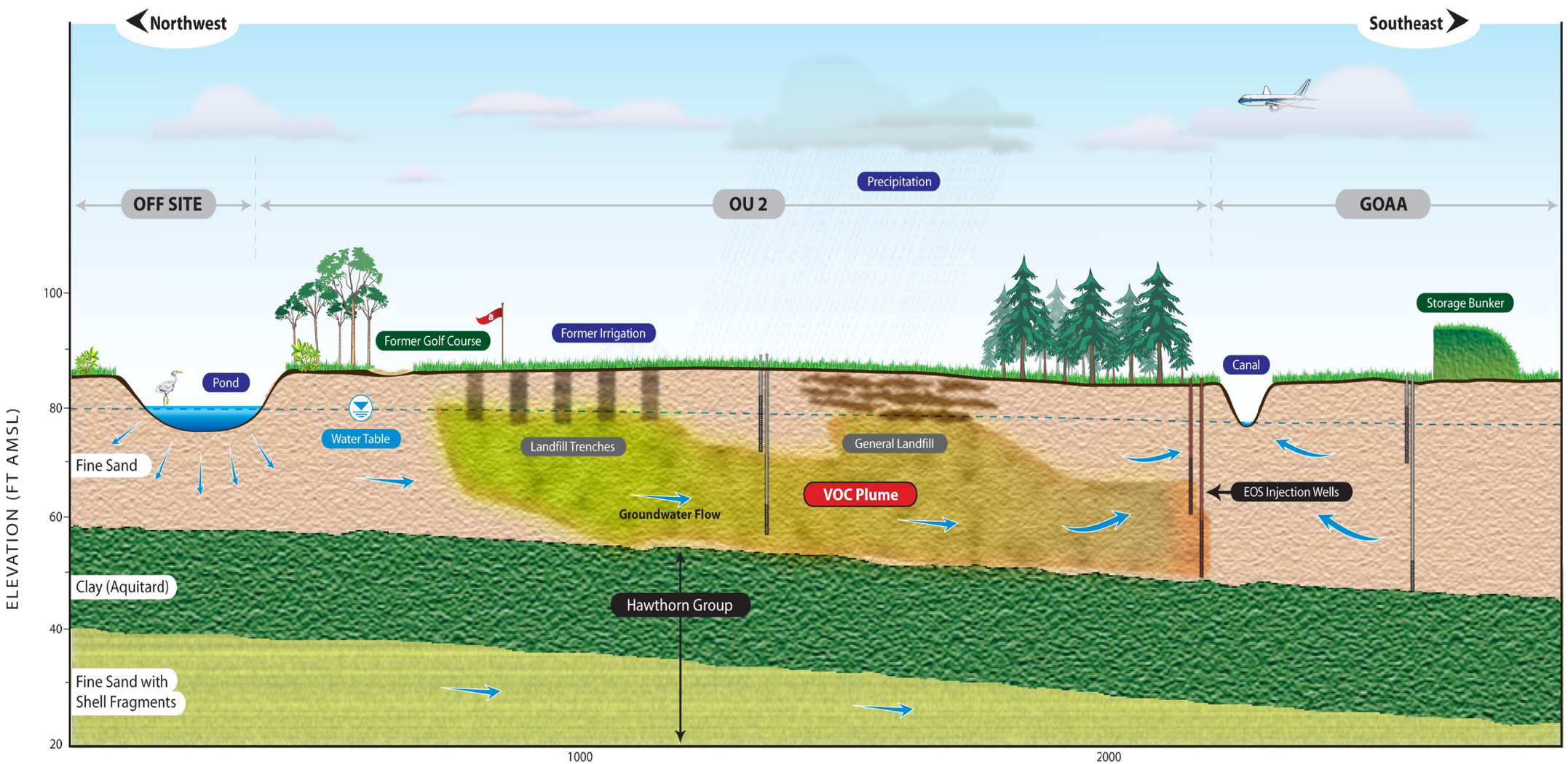

DRAWN BY WRW	DATE 5/20/2010	CONCEPTUAL SITE MODEL OPERABLE UNIT 2 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/20/2010		OWNER NO. ---------
REVISED BY ---	DATE ---------		APPROVED BY --- / DATE ---------
SCALE AS NOTED			DRAWING NO. FIGURE 2-2 / REV. 0

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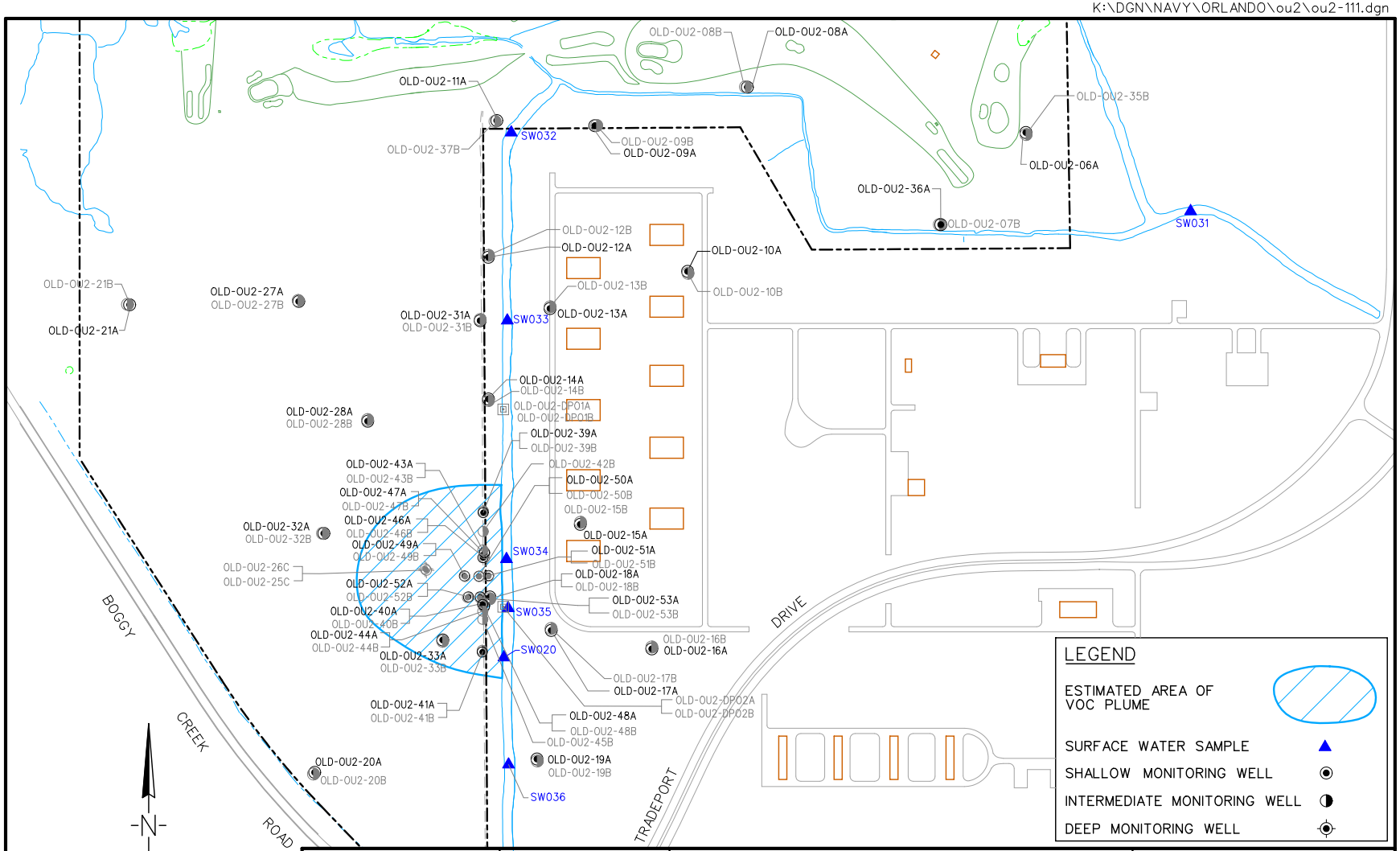

DRAWN BY	DATE
WRW	6/11/2010
CHECKED BY	DATE
TKG	6/11/2010
REVISED BY	DATE
WRW	2/16/2011
SCALE	
AS NOTED	

SOUTHERN AREA
SHALLOW GROUNDWATER PLUME
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO.	
N62467-04-D-0055	
OWNER NO.	

APPROVED BY	DATE
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DRAWING NO.	REV.
FIGURE 3-1	0

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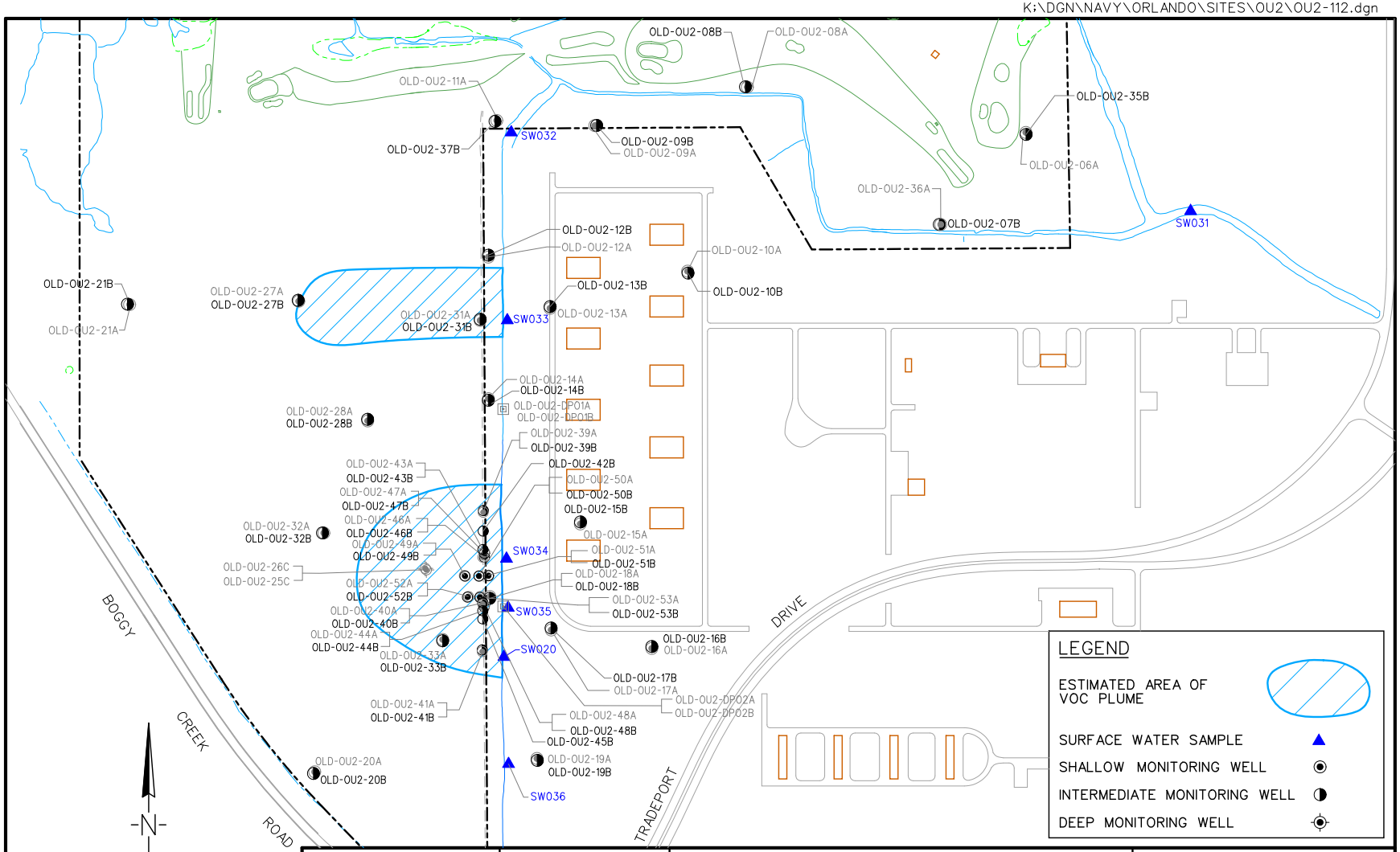

DRAWN BY	DATE
WRW	6/11/2010
CHECKED BY	DATE
TKG	6/11/2010
REVISED BY	DATE
WRW	2/9/2011
SCALE	
AS NOTED	

SOUTHERN AREA
INTERMEDIATE GROUNDWATER PLUME
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO.	
N62467-04-D-0055	
OWNER NO.	

APPROVED BY	DATE
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DRAWING NO.	REV.
FIGURE 3-2	0

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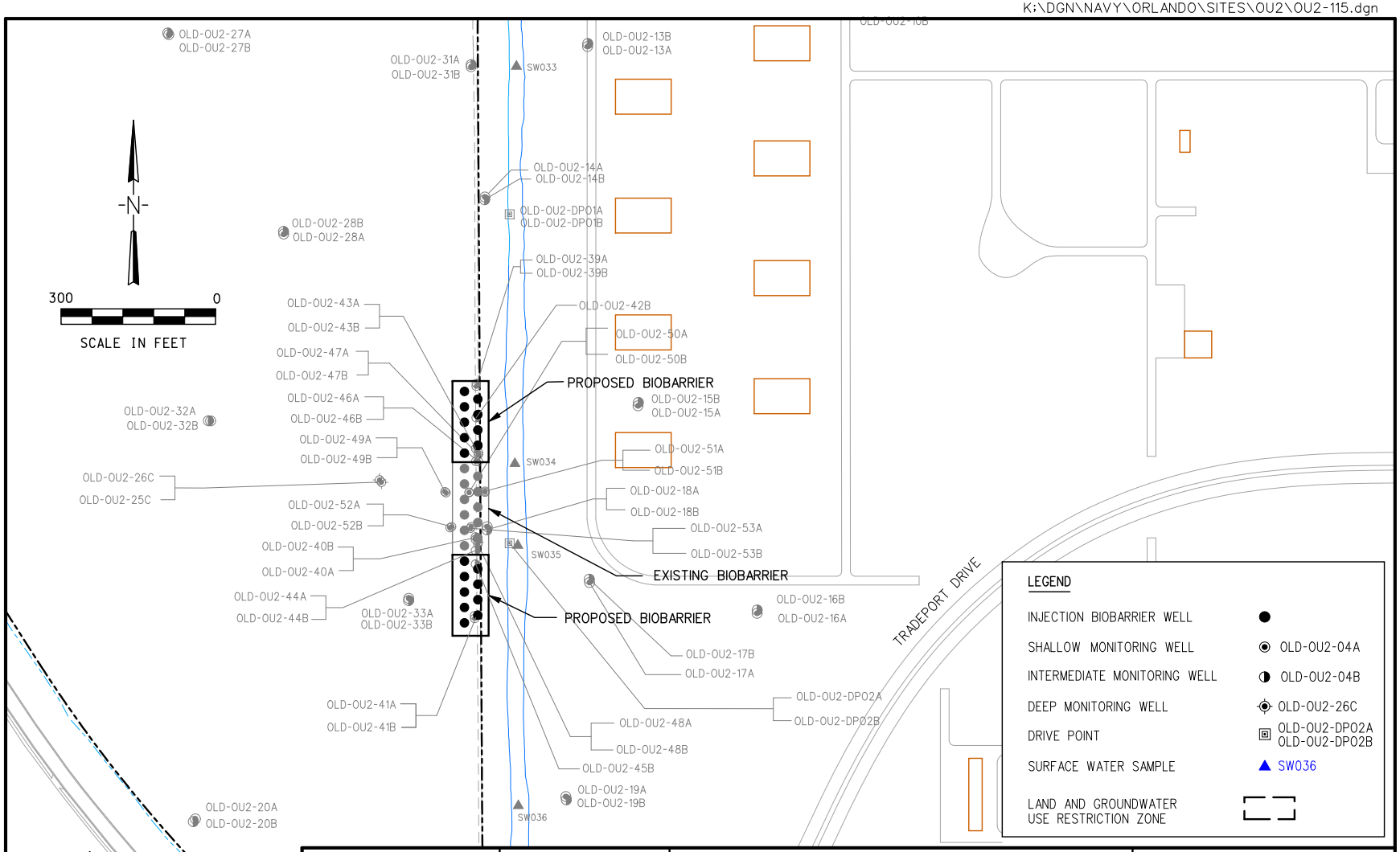

DRAWN BY WRW	DATE 6/11/2010	ALTERNATIVE S-3 PROPOSED TREATMENT AREA OPERABLE UNIT 2	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 6/11/2010		OWNER NO. --------
REVISED BY WRW	DATE 12/17/2010	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 5-1 / REV. 0

NBRC-AH.dgn

APPENDIX A

HHRA RISK RE-EVALUATION DATA SETS

Surface Soil

APPENDIX A
SURFACE SOIL DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2H01	OU2H06	OU2H11	OU2H16	OU2H21	OU2H21	OU2H25	OU2H25	OU2H26	OU2H30	OU2H31	OU2H35	OU2H35	OU2H36	OU2H37	OU2H38	OU2H39	OU2H40	OU2H41	OU2H42	OU2H43	OU2H44
nsample	**NTCSSH0100**	**NTCSSH0600**	**NTCSSH1100**	**NTCSSH1600**	**NTCSSH2100**	**NTCSSH2100-D**	**NTCSSH2500**	**NTCSSH2500-D**	**NTCSSH2600**	**NTCSSH3000**	**NTCSSH3100**	**NTCSSH3500**	**NTCSSH3500-D**	**NTCSSH3600**	**NTCSSH3700**	**NTCSSH3800**	**NTCSSH3900**	**NTCSSH4000**	**NTCSSH4100**	**NTCSSH4200**	**NTCSSH4300**	**NTCSSH4400**
sample_dat	19970629	19970629	19970629	19970629	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19980513	19980513	19980513	19980513
qc_type	NM	NM	NM	NM	NM	FD	NM	FD	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate						NTCSSH2100		NTCSSH2500					NTCSSH3500									
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (µg/kg)																						
1,1,1-TRICHLOROETHANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1 U	1 U	1 UJ	1 U
1,1,2,2-TETRACHLOROETHANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.73 UJ	0.73 U	0.73 UJ	0.74 U
1,1,2-TRICHLOROETHANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.82 U	0.82 U	0.82 UJ	0.84 UJ
1,1-DICHLOROETHANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1 U	1 U	1 UJ	1 U
1,1-DICHLOROETHENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1 U	1 U	1 UJ	1 U
1,2-DICHLOROETHANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.67 U	0.67 U	0.67 UJ	0.68 UJ
1,2-DICHLOROPROPANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1.2 U	1.2 U	1.2 UJ	1.3 UJ
2-BUTANONE	14 U	11 U	11 U	17 U	11 U		11 U	11 U	11 U	11 U	11 U	11 U	11 U	14 UJ	11 U	11 U	11 U	11 U	5.2 U	5.2 U	5.2 UJ	5.2 U
2-HEXANONE	14 U	11 U	11 U	17 U	11 U		11 U	11 U	11 U	11 U	11 U	11 U	11 U	14 UJ	11 U	11 U	11 U	11 U	1.3 U	1.3 U	1.3 UJ	1.4 UJ
4-METHYL-2-PENTANONE	14 U	11 U	11 U	17 U	11 U		11 U	11 U	11 U	11 U	11 U	11 U	11 U	14 UJ	11 U	11 U	11 U	11 U	5.4 U	5.4 U	5.4 UJ	5.6 UJ
ACETONE	14 UR	11 UR	11 UR	17 UR	11 U		11 U	11 UR	11 U	11 U	11 U	1560	33	39.5 J	11 U	11 U	11 U	11 U	5.2 U	5.2 U	5.2 UJ	5.2 U
BENZENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1 U	1 U	1 UJ	1 UJ
BROMODICHLOROMETHANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.78 U	0.78 U	0.78 UJ	0.8 UJ
BROMOFORM	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.56 U	0.56 U	0.56 UJ	0.57 UJ
BROMOMETHANE	14 U	11 U	11 U	17 U	11 U		11 U	11 U	11 U	11 U	11 U	11 U	11 U	14 UJ	11 U	11 U	11 U	11 U	1.2 U	1.2 U	1.2 UJ	1.3 U
CARBON DISULFIDE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 UJ	1.2 U
CARBON TETRACHLORIDE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	2.2 U	2.2 U	2.2 UJ	2.2 UJ
CHLOROBENZENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 UJ	1.2 UJ
CHLORODIBROMOMETHANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.76 U	0.76 U	0.76 UJ	0.78 UJ
CHLOROETHANE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 UJ	1.2 U
CHLOROFORM	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.75 U	0.75 U	0.75 UJ	0.77 U
CHLOROMETHANE	14 U	11 U	11 U	17 U	11 U		11 U	11 U	11 U	11 U	11 U	11 U	11 U	14 UJ	11 U	11 U	11 U	11 U	1.3 U	1.3 U	1.3 UJ	1.4 U
CIS-1,2-DICHLOROETHENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.86 U	0.86 U	0.86 UJ	0.88 U
CIS-1,3-DICHLOROPROPENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1 U	1 U	1 UJ	1 UJ
ETHYLBENZENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 UJ	1.2 UJ
METHYLENE CHLORIDE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	3.6	5.5 U	4.4	5.4 U	0.44 U	3	12.4 J	0.45 U
STYRENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.88 U	0.88 U	0.88 UJ	0.89 UJ
TETRACHLOROETHENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	0.93 U	0.93 U	0.93 UJ	0.94 UJ
TOLUENE	8.7 J	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	6 U	4.8 U	4.8	5.5 U	7.1 UJ	10.4	9 U	3.8	5.4 U	2.7 J	1.5	14.9 J	0.93 UJ
TOTAL XYLENES	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	4.1 U	5.4 U	3.7	5.5 U	7.1 UJ	5.7	4.6 U	2.8	5.4 U	1 U	1 U	4.8 J	1 U
TRANS-1,2-DICHLOROETHENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1.2 U	1.2 U	1.2 UJ	1.3 U
TRANS-1,3-DICHLOROPROPENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 UJ	1.2 UJ
TRICHLOROETHENE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1.4 U	1.4 U	1.4 UJ	1.5 UJ
VINYL CHLORIDE	6.9 U	5.5 U	5.3 U	8.4 U	5.4 U		5.5 U	5.4 U	5.4 U	5.5 U	5.4 U	5.4 U	5.5 U	7.1 UJ	5.5 U	5.5 U	5.4 U	5.4 U	1 U	1 U	1 UJ	1 U
Semivolatile Organics (µg/kg)																						
1,2,4-TRICHLOROBENZENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
1,2-DICHLOROBENZENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
1,3-DICHLOROBENZENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
1,4-DICHLOROBENZENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2,4,5-TRICHLOROPHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2,4,6-TRICHLOROPHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2,4-DICHLOROPHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2,4-DIMETHYLPHENOL	940 U	900 U	880 U	900 U	900 U		900 U	900 U	900 U	900 U	910 U	910 U	900 U	970 U	910 U	920 U	900 U	890 U	860 U	860 U	860 U	880 U
2,4-DINITROPHENOL	940 U	900 U	880 U	900 U	900 U		900 U	900 U	900 U	900 U	910 U	910 U	900 U	970 U	910 U	920 U	900 U	890 U	860 U	860 U	860 U	880 U
2,4-DINITROTOLUENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2,6-DINITROTOLUENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2-CHLORONAPHTHALENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U

APPENDIX A
SURFACE SOIL DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2H01	OU2H06	OU2H11	OU2H16	OU2H21	OU2H21	OU2H25	OU2H25	OU2H26	OU2H30	OU2H31	OU2H35	OU2H35	OU2H36	OU2H37	OU2H38	OU2H39	OU2H40	OU2H41	OU2H42	OU2H43	OU2H44
nsample	**NTCSSH0100**	**NTCSSH0600**	**NTCSSH1100**	**NTCSSH1600**	**NTCSSH2100**	**NTCSSH2100-D**	**NTCSSH2500**	**NTCSSH2500-D**	**NTCSSH2600**	**NTCSSH3000**	**NTCSSH3100**	**NTCSSH3500**	**NTCSSH3500-D**	**NTCSSH3600**	**NTCSSH3700**	**NTCSSH3800**	**NTCSSH3900**	**NTCSSH4000**	**NTCSSH4100**	**NTCSSH4200**	**NTCSSH4300**	**NTCSSH4400**
sample_dat	19970629	19970629	19970629	19970629	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19980513	19980513	19980513	19980513
qc_type	NM	NM	NM	NM	NM	FD	NM	FD	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate						NTCSSH2100		NTCSSH2500					NTCSSH3500									
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2-METHYLNAPHTHALENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2-METHYLPHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2-NITROANILINE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
2-NITROPHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
3&4-METHYLPHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
3,3'-DICHLOROBENZIDINE	940 UJ	900 UJ	880 UJ	900 UJ	900 U		900 U	900 UJ	900 U	900 U	910 U	910 U	900 U	970 U	910 U	920 U	900 U	890 U	860 U	860 U	860 U	880 U
3-NITROANILINE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
4,6-DINITRO-2-METHYLPHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
4-BROMOPHENYL PHENYL ETHER	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
4-CHLORO-3-METHYLPHENOL	940 U	900 U	880 U	900 U	900 U		900 U	900 U	900 U	900 U	910 U	910 U	900 U	970 U	910 U	920 U	900 U	890 U	860 U	860 U	860 U	880 U
4-CHLOROANILINE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
4-CHLOROPHENYL PHENYL ETHER	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
4-NITROANILINE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
4-NITROPHENOL	940 U	900 U	880 U	900 U	900 U		900 U	900 U	900 U	900 U	910 U	910 U	900 U	970 U	910 U	920 U	900 U	890 U	860 U	860 U	860 U	880 U
ACENAPHTHENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
ACENAPHTHYLENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
ANTHRACENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BAP EQUIVALENT-HALFND	94 U	90 U	88 U	90 U	90 U		90 U	90 U	90 U	90 U	91 U	91 U	90 U	97 U	91 U	92 U	90 U	89 U	86 U	86 U	86 U	88 U
BENZO(A)ANTHRACENE	380 UJ	360 UJ	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BENZO(A)PYRENE	94 U	90 U	88 UJ	90 UJ	90 U		90 U	90 UJ	90 U	90 U	91 U	91 U	90 U	97 U	91 U	92 U	90 U	89 U	86 U	86 U	86 U	88 U
BENZO(B)FLUORANTHENE	380 U	360 U	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BENZO(G,H,I)PERYLENE	380 U	360 U	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BENZO(K)FLUORANTHENE	380 U	360 U	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BIS(2-CHLOROETHOXY)METHANE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BIS(2-CHLOROETHYL)ETHER	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BIS(2-CHLOROISOPROPYL)ETHER	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	380 UJ	360 UJ	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
BUTYL BENZYL PHTHALATE	380 UJ	360 UJ	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
CARBAZOLE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
CHRYSENE	380 UJ	360 UJ	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
DI-N-BUTYL PHTHALATE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
DI-N-OCTYL PHTHALATE	380 U	360 U	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
DIBENZO(A,H)ANTHRACENE	94 U	90 U	88 UJ	90 UJ	90 U		90 U	90 UJ	90 U	90 U	91 U	91 U	90 U	97 U	91 U	92 U	90 U	89 U	86 U	86 U	86 U	88 U
DIBENZOFURAN	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
DIETHYL PHTHALATE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
DIMETHYL PHTHALATE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
FLUORANTHENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
FLUORENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
HEXACHLOROBENZENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
HEXACHLOROBUTADIENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
HEXACHLOROCYCLOPENTADIENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
HEXACHLOROETHANE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
INDENO(1,2,3-CD)PYRENE	380 U	360 U	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
ISOPHORONE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
N-NITROSO-DI-N-PROPYLAMINE	19 U	18 U	18 U	18 U	18 U		18 U	18 U	18 U	18 U	18 U	18 U	18 U	19 U	18 U	18 U	18 U	18 U	17 U	17 U	17 U	18 U
N-NITROSODIPHENYLAMINE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
NAPHTHALENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U

location	OU2H01	OU2H06	OU2H11	OU2H16	OU2H21	OU2H21	OU2H25	OU2H25	OU2H26	OU2H30	OU2H31	OU2H35	OU2H35	OU2H36	OU2H37	OU2H38	OU2H39	OU2H40	OU2H41	OU2H42	OU2H43	OU2H44
nsample	**NTCSSH0100**	**NTCSSH0600**	**NTCSSH1100**	**NTCSSH1600**	**NTCSSH2100**	**NTCSSH2100-D**	**NTCSSH2500**	**NTCSSH2500-D**	**NTCSSH2600**	**NTCSSH3000**	**NTCSSH3100**	**NTCSSH3500**	**NTCSSH3500-D**	**NTCSSH3600**	**NTCSSH3700**	**NTCSSH3800**	**NTCSSH3900**	**NTCSSH4000**	**NTCSSH4100**	**NTCSSH4200**	**NTCSSH4300**	**NTCSSH4400**
sample_dat	19970629	19970629	19970629	19970629	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19980513	19980513	19980513	19980513
qc_type	NM	NM	NM	NM	NM	FD	NM	FD	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate						NTCSSH2100		NTCSSH2500					NTCSSH3500									
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
PHENANTHRENE	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
PHENOL	380 U	360 U	350 U	360 U	360 U		360 U	360 U	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
PYRENE	380 UJ	360 UJ	350 UJ	360 UJ	360 U		360 U	360 UJ	360 U	360 U	360 U	360 U	360 U	390 U	360 U	370 U	360 U	360 U	340 U	340 U	340 U	350 U
Pesticides/PCBs (µg/kg)																						
4,4'-DDD	2.5 U	2 U	1.9 U	3 U	2 U	2 U	2 U	1.9 U	1.9 U	1.9 U	2 U	2 U	2 U	15 U	2 U	2 U	1.9 U	1.9 U	3.4 U	3.4 U	3.4 U	3.5 U
4,4'-DDE	1.2 U	0.95 U	0.92 U	1.4 U	0.95 U	0.95 U	0.95 U	0.93 U	0.94 U	0.93 U	0.95 U	0.95 U	0.95 U	7.4 U	0.95 U	0.95 U	0.93 U	0.92 U	3.8	3.4 U	3.4 U	3.5 U
4,4'-DDT	5.5 U	4.4 U	4.2 U	6.7 U	4.4 U	4.4 U	4.4 U	4.3 U	4.3 U	4.3 U	4.4 U	4.4 U	4.4 U	34 U	4.4 U	4.4 U	4.3 U	4.2 U	3.4 U	3.4 U	3.4 U	3.5 U
ALDRIN	4.3 U	3.5 U	3.4 U	5.3 U	3.5 U	3.4 U	3.5 U	3.4 U	3.4 U	3.4 U	3.5 U	3.4 U	3.4 U	27 U	3.5 U	3.5 U	3.4 U	3.4 U	1.7 U	1.7 U	1.7 U	1.8 U
ALPHA-BHC	0.96 U	0.77 U	0.74 U	1.2 U	0.77 U	0.76 U	0.77 U	0.75 U	0.76 U	0.75 U	0.77 U	0.76 U	0.76 U	6 U	0.77 U	0.77 U	0.75 U	0.74 U	1.7 U	1.7 U	1.7 U	1.8 U
ALPHA-CHLORDANE	1 U	0.8 U	0.78 U	1.2 U	0.8 U	0.8 U	0.81 U	0.79 U	0.79 U	0.79 U	0.8 U	0.8 U	0.8 U	6.3 U	0.8 U	0.8 U	0.79 U	0.78 U	3.4 U	3.4 U	3.4 U	3.5 U
AROCLOR-1016							19 U					19 U	19 U						34 U	34 U	34 U	35 U
AROCLOR-1221							7 U					6.9 U	6.9 U						34 U	34 U	34 U	35 U
AROCLOR-1232							15 U					15 U	15 U						34 U	34 U	34 U	35 U
AROCLOR-1242							11 U					10 U	10 U						34 U	34 U	34 U	35 U
AROCLOR-1248							8.1 U					8 U	8 U						34 U	34 U	34 U	35 U
AROCLOR-1254							12 U					12 U	12 U						34 U	34 U	34 U	35 U
AROCLOR-1260							17 U					17 U	17 U						34 U	34 U	34 U	35 U
BETA-BHC	1.4 U	1.1 U	1.1 U	1.7 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	8.6 U	1.1 U	1.1 U	1.1 U	1.1 U	1.7 U	1.7 U	1.7 U	1.8 U
DELTA-BHC	1.7 U	1.4 U	1.3 U	2 U	1.4 U	1.3 U	1.4 U	1.3 U	1.3 U	1.3 U	1.4 U	1.3 U	1.3 U	10 U	1.4 U	1.4 U	1.3 U	1.3 U	1.7 U	1.7 U	1.7 U	1.8 U
DIELDRIN	1.2 U	0.95 U	0.92 U	1.4 U	0.95 U	0.95 U	0.95 U	0.93 U	0.94 U	0.93 U	0.95 U	0.95 U	0.95 U	7.4 U	0.95 U	0.95 U	0.93 U	0.92 U	3.4 U	3.4 U	3.4 U	3.5 U
ENDOSULFAN I	1.2 U	0.98 U	0.96 U	1.5 U	0.98 U	0.98 U	0.99 U	0.97 U	0.97 U	0.97 U	0.99 U	0.98 U	0.98 U	7.7 U	0.98 U	0.98 U	0.97 U	0.96 U	1.7 U	1.7 U	1.7 U	1.8 U
ENDOSULFAN II	1.6 U	1.2 U	1.2 U	1.9 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	9.7 U	1.2 U	1.2 U	1.2 U	1.2 U	3.4 U	3.4 U	3.4 U	3.5 U
ENDOSULFAN SULFATE	5 U	4 U	3.9 U	6.1 U	4 U	4 U	4 U	3.9 U	4 U	3.9 U	4 U	4 U	4 U	31 U	4 U	4 U	3.9 U	3.9 U	3.4 U	3.4 U	3.4 U	3.5 U
ENDRIN	2 U	1.6 U	1.5 U	2.4 U	1.6 U	1.6 U	1.6 U	1.5 U	1.6 U	1.5 U	1.6 U	1.6 U	1.6 U	12 U	1.6 U	1.6 U	1.5 U	1.5 U	3.4 U	3.4 U	3.4 U	3.5 U
ENDRIN ALDEHYDE	1.8 U	1.5 U	1.4 U	2.2 U	1.5 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	11 U	1.5 U	1.5 U	1.4 U	1.4 U	3.4 U	3.4 U	3.4 U	3.5 U
ENDRIN KETONE	9.1 U	7.3 U	7.1 U	11 U	7.3 U	7.3 U	7.3 U	7.2 U	7.2 U	7.2 U	7.3 U	7.3 U	7.3 U	57 U	7.3 U	7.3 U	7.2 U	7.1 U	3.4 U	3.4 U	3.4 U	3.5 U
GAMMA-BHC (LINDANE)	1 U	0.8 U	0.78 U	1.2 U	0.8 U	0.8 U	0.81 U	0.79 U	0.79 U	0.79 U	0.8 U	0.8 U	0.8 U	6.3 U	0.8 U	0.8 U	0.79 U	0.78 U	1.7 U	1.7 U	1.7 U	1.8 U
GAMMA-CHLORDANE	1.1 U	0.91 U	0.88 U	1.4 U	0.91 U	0.91 U	0.92 U	0.9 U	0.9 U	0.9 U	0.92 U	0.91 U	0.91 U	7.2 U	0.91 U	0.91 U	0.9 U	0.88 U	3.4 U	3.4 U	3.4 U	3.5 U
HEPTACHLOR	1.2 U	0.95 U	0.92 U	1.4 U	0.95 U	0.95 U	0.95 U	0.93 U	0.94 U	0.93 U	2.7	0.95 U	0.95 U	7.4 U	0.95 U	0.95 U	0.93 U	0.92 U	1.7 U	1.7 U	1.7 U	1.8 U
HEPTACHLOR EPOXIDE	1.2 U	0.98 U	0.96 U	1.5 U	0.98 U	0.98 U	0.99 U	0.97 U	0.97 U	0.97 U	0.99 U	0.98 U	0.98 U	7.7 U	0.98 U	0.98 U	0.97 U	0.96 U	1.7 U	1.7 U	1.7 U	1.8 U
METHOXYCHLOR	8.2 U	6.6 U	6.4 U	10 U	6.6 U	6.6 U	6.6 U	6.4 U	6.5 U	6.5 U	6.6 U	6.6 U	6.6 U	51 U	6.6 U	6.6 U	6.4 U	6.4 U	17 U	17 U	17 U	18 U
TOXAPHENE	91 U	73 U	71 U	110 U	73 U	73 U	73 U	72 U	72 U	72 U	73 U	73 U	73 U	570 U	73 U	73 U	72 U	71 U	170 U	170 U	170 U	180 U
Inorganics (mg/kg)																						
ALUMINUM	2880	614	200	378	585		1380	899	300	1490	1290	998	956	1500	1390	548	230	58.4	282	510	567	2020
ANTIMONY	0.37 U	0.3 U	0.29 U	0.45 U	0.3 U		0.3 U	0.29 U	0.3 U	0.29 U	0.3 U	0.3 U	0.3 U	0.39 U	0.3 U	0.3 U	0.29 U	0.29 U	0.33 U	0.33 U	0.33 U	0.34 U
ARSENIC	0.62 U	0.5 U	0.48 U	0.75 U	0.49 U		0.5 U	0.48 U	0.49 U	0.49 U	0.5 U	0.49 U	0.49 U	0.64 U	0.54	0.5 U	0.48 U	0.48 U	0.25 U	0.25 U	0.25 U	0.25 U
BARIUM	8.6 U	1.7 U	1.1 U	1.7 U	2 U		1.8 U	1.2 U	1.2 U	6.1 U	2 U	3.4 U	3.8 U	6.6 U	1.4 U	2.7 U	1.1 U	1.1 U	2.7	3.1	3.7	4
BERYLLIUM	0.06 U	0.02 U	0.01 U	0.02 U	0.04 U		0.04 U	0.01 U	0.03 U	0.07 U	0.07 U	0.03 U	0.03 U	0.08 U	0.07 U	0.02 U	0.02 U	0.02 U	0.13 U	0.18 U	0.14 U	0.19 U
CADMIUM	0.07 U	0.06 U	0.05 U	0.08 U	0.06 U		0.06 U	0.05 U	0.06 U	0.08	0.06 U	0.06 U	0.06 U	0.07 U	0.06 U	0.06 U	0.05 U	0.05 U	0.26 U	0.05 U	0.19 U	0.36 U
CALCIUM	947	218	20.9 U	91 U	121		166	103	58.4	906	45.7 U	208	192	286	53.5 U	213	58.4	78.2	300 J	300 J	288 J	309 J
CHROMIUM	3.4	0.93	0.49	0.94	0.7		1.2	0.75	0.54	1.8	1.5	1.3	1.2	1.8	2	1	0.73	0.21	0.63 U	0.59 U	0.8 U	2.5 U
COBALT	0.23 U	0.19 U	0.18 U	0.28 U	0.19 U		0.19 U	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U	0.24 U	0.19 U	0.19 U	0.18 U	0.18 U	0.14 U	0.14 U	0.14 U	0.15 U
COPPER	11.9	0.3	0.29 U	1.2	0.42		0.3 U	0.29 U	0.3 U	0.93	0.3 U	0.3 U	0.3 U	4.4	0.3 U	0.3 U	0.29 U	0.29 U	1.7	2.1	1.8	1.9
CYANIDE	1.1 UR	1.1 UR	1.1 UR	1.1 UR	1.1 UR		1.1 UR	1.1 UR	1.1 UR	1.1 UR	1.1 UR	1.1 UR	1.1 UR	1.2 UR	1.1 UR	1.1 UR	1.1 UR	1.1 UR				
IRON	381	105	60.1	474	209		116	92.2	102	406	574	92.5	84	600	718	101	23.1	19.7	80.8	237	200	550
LEAD	6.9	2.3	2.4	2.8	2.8		2.8	1.7 U	1.8 U	3.8	3.3	3	3	12.3	1.8 U	2.6	1.4 U	1.1 U	3.5	11.4	3.5	3.1
MAGNESIUM	57.1	9 U	3.8 U	10.2	14.5 U		21.3 U	13.2 U	9.5 U	46.1	20.9 U	21.1 U	20.5 U	73	22.9 U	14.3 U	6.4 U	7.5 U	58	58	51.3	65

APPENDIX A
SURFACE SOIL DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2H01	OU2H06	OU2H11	OU2H16	OU2H21	OU2H21	OU2H25	OU2H25	OU2H26	OU2H30	OU2H31	OU2H35	OU2H35	OU2H36	OU2H37	OU2H38	OU2H39	OU2H40	OU2H41	OU2H42	OU2H43	OU2H44
nsample	**NTCSSH0100**	**NTCSSH0600**	**NTCSSH1100**	**NTCSSH1600**	**NTCSSH2100**	**NTCSSH2100-D**	**NTCSSH2500**	**NTCSSH2500-D**	**NTCSSH2600**	**NTCSSH3000**	**NTCSSH3100**	**NTCSSH3500**	**NTCSSH3500-D**	**NTCSSH3600**	**NTCSSH3700**	**NTCSSH3800**	**NTCSSH3900**	**NTCSSH4000**	**NTCSSH4100**	**NTCSSH4200**	**NTCSSH4300**	**NTCSSH4400**
sample_dat	19970629	19970629	19970629	19970629	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19970628	19980513	19980513	19980513	19980513
qc_type	NM	NM	NM	NM	NM	FD	NM	FD	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate						NTCSSH2100		NTCSSH2500					NTCSSH3500									
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	2.3	0.58	0.28 U	2	0.61		0.77	0.47 U	0.31 U	3	0.57	0.53	0.46 U	1.1	0.86	0.5 U	0.35 U	0.4 U	1.5	0.68 U	0.54 U	1.1
MERCURY	0.11 U	0.09 U	0.09 U	0.14 U	0.09 U		0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.12 U	0.09 U	0.09 U	0.09 U	0.09 U	0.04 U	0.04 U	0.04 U	0.04 U
NICKEL	1	0.22 U	0.21 U	0.33 U	0.24		0.36	0.47	0.35	0.58	0.29	0.26	0.22 U	0.93	0.33	0.34	0.22 U	0.21 U	0.7 U	0.47 U	0.69 U	0.8 U
POTASSIUM	27.3	10.8 U	10.5 U	16.5 U	10.8 U		10.9 U	10.6 U	10.8 U	19.6	11.2	10.8 U	10.8 U	44.4	10.8 U	10.8 U	10.6 U	10.6 U	27.1 U	32.7 U	25.3 U	26.4 U
SELENIUM	0.51 U	0.41 U	0.39 U	0.62 U	0.41 U		0.41 U	0.4 U	0.41 U	0.4 U	0.41 U	0.4 U	0.41 U	0.56	0.41 U	0.41 U	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U
SILVER	0.28 U	0.22 U	0.21 U	0.33 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	0.29 U	0.22 U	0.22 U	0.22 U	0.21 U	0.12 U	0.12 U	0.12 U	0.13 U
SODIUM	114 U	91 U	88 U	138 U	90.6 U		91.3 U	88.9 U	90.4 U	89.2 U	91.4 U	90.3 U	90.5 U	118 U	90.8 U	91 U	88.9 U	88.4 U	160 U	160 U	160 U	170 U
THALLIUM	0.55 U	0.44 U	0.43 U	0.67 U	0.44 U		0.44 U	0.43 U	0.44 U	0.43 U	0.44 U	0.44 U	0.44 U	0.57 U	0.45	0.44 U	0.43 U	0.43 U	0.27 U	0.27 U	0.27 U	0.27 U
VANADIUM	2.6	0.43	0.22	0.33	0.62 U		0.67 U	0.67 U	0.37 U	1.7 U	1 U	0.72 U	0.72 U	2.3 U	1.8 U	0.7 U	0.29 U	0.18 U	0.34	0.42	0.45	0.16 U
ZINC	6.2	0.97 U	0.8 U	11.9	2.7 U		0.56 U	0.42 U	0.74 U	6.8	1.3 U	0.84 U	0.97 U	3.4 U	0.76 U	0.66 U	0.75 U	2.1 U	4.7	3.7	3.9	7.1
Herbicides (µg/kg)																						
2,4,5-T	1.8 U	1.4 U	1.4 U	2.1 U	1.4 U		1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.8 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2,4,5-TP (SILVEX)	2.1 U	1.7 U	1.6 U	2.5 U	1.7 U		1.7 U	1.6 U	1.6 U	1.6 U	1.7 U	1.7 U	1.7 U	2.2 U	1.7 U	1.7 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
2,4-D	9.6 U	7.7 U	7.4 U	12 U	7.7 U		7.7 U	7.5 U	7.6 U	7.6 U	7.7 U	7.7 U	7.7 U	10 U	7.7 U	7.7 U	7.5 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U
2,4-DB	5.5 U	4.4 U	4.2 U	6.6 U	4.4 U		4.4 U	4.3 U	4.4 U	4.3 U	4.4 U	4.4 U	4.4 U	5.7 U	4.4 U	4.4 U	4.3 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
DALAPON	11 U	8.8 U	8.4 U	13 U	8.8 U		8.8 U	8.6 U	8.7 U	8.6 U	8.8 U	8.8 U	8.8 U	11 U	8.8 U	8.8 U	8.6 U	8.5 U	8.4 U	8.4 U	8.4 U	8.4 U
DICAMBA	5.5 U	4.4 U	4.2 U	6.6 U	4.4 U		4.4 U	4.3 U	4.4 U	4.3 U	4.4 U	4.4 U	4.4 U	5.7 U	4.4 U	4.4 U	4.3 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
DICHLOROPROP	27 U	22 U	21 U	33 U	22 U		22 U	22 U	22 U	22 U	22 U	22 U	22 U	29 U	22 U	22 U	21 U	21 U	21 U	21 U	21 U	21 U
DINOSEB	5.5 U	4.4 U	4.2 U	6.6 U	4.4 U		4.4 U	4.3 U	4.4 U	4.3 U	4.4 U	4.4 U	4.4 U	5.7 U	4.4 U	4.4 U	4.3 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
MCPA	2700 U	2200 U	2100 U	3300 U	2200 U		2200 U	2200 U	2200 U	2200 U	2200 U	2200 U	2200 U	2900 U	2200 U	2200 U	2100 U	2100 U	2100 U	2100 U	2100 U	2100 U
MCPP	1400 U	1100 U	1000 U	1600 U	1100 U		1100 U	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U	1400 U	1100 U	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U	1000 U
PENTACHLOROPHENOL	2.7 U	2.2 U	2.1 U	3.3 U	2.2 U		2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.9 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Miscellaneous Parameters (mg/kg)																						
CATION EXCHANGE CAPACITY																	750					
CYANIDE																			1 UJ	1 UJ	1 UJ	1 UJ
DIESEL RANGE ORGANICS	11.1	9 U	24.3	9 U	9 U		8.2 U	7.26 J	9 U	9 U	14.2	43.1	11.5	36.2	9.1 U	11.9	12.9	8.9 U				
GASOLINE RANGE ORGANICS	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.128	0.11 U	0.12 U	0.11 U	0.11 U	0.11 U	0.11 U				
TOTAL ORGANIC CARBON																	29600					
Petroleum Hydrocarbons (mg/kg)																						
TOTAL PETROLEUM HYDROCARBONS																			23.8	33.6	39.8	32.6
Radiological (pCi/g)																						
ACTINIUM-228																				0.6	0.4	0.5
BISMUTH-214																			0.4			
CESIUM-137																						0.2
GROSS ALPHA	1.03	0.625	0.171	0.229 J	0.271 J		0.282 J		0.28 J	1.4	0.542 J	0.286 J		0.386	0.438	0.417	0.153	0.111	0 U	8.1	10.4	0 U
GROSS BETA	0.421	0.226	-0.068 U	0.052 U	-0.081 U		0.054 U		0.219	0.527	0.444	0.215		0.581	0.211	0.257	0.048 U	0.469	6.1	6.4	4.5	3.9
LEAD-210																						2.3
LEAD-212																					0.2	
LEAD-214																			0.6	1.3	0.8	1
THALLIUM-208																						

APPENDIX A
SURFACE SOIL DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2H45	OU2H45	OU2H46	OU2H47	OU2H48	OU2H49	OU2H49	OU2S01	OU2S010	OU2S010	OU2S010	OU2S011	OU2S012	OU2S020	OU2S021	OU2S022	OU2S030	OU2S031	OU2S032	OU2S040	OU2S041	OU2S050
nsample	**NTCSSH4500**	**NTCSSH4500-D**	**NTCSSH4600**	**NTCSSH4700**	**NTCSSH4800**	**NTCSSH4900**	**NTCSSH4900-D**	**NTCSSS0100**	**NTCSSS1000**	**NTCSSS1000-D**	**NTCSSS10000**	**NTCSSS1100**	**NTCSSS1200**	**NTCSSS2000**	**NTCSSS2100**	**NTCSSS2200**	**NTCSSS3000**	**NTCSSS3100**	**NTCSSS3200**	**NTCSSS4000**	**NTCSSS4100**	**NTCSSS5000**
sample_dat	19980513	19980513	19980513	19980513	19980513	19980513	19980513	19980512	19970628	19970628	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970628
qc_type	NM	FD	NM	NM	NM	NM	FD	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate		NTCSSH4500					NTCSSH4900			NTCSSS1000												
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (µg/kg)																						
1,1,1-TRICHLOROETHANE	1 UJ	1 UJ	1 UJ	1 U	1.1 U	0.99 U	1 U	1.1 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
1,1,2,2-TETRACHLOROETHANE	0.74 UJ	0.75 UJ	0.75 UJ	0.74 UJ	0.82 UJ	0.72 UJ	0.72 U	0.82 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 UJ	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
1,1,2-TRICHLOROETHANE	0.84 UJ	0.85 UJ	0.85 UJ	0.83 UJ	0.93 U	0.81 U	0.82 U	0.92 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
1,1-DICHLOROETHANE	1 UJ	1.1 UJ	1.1 UJ	1 U	1.2 U	1 U	1 U	1.2 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
1,1-DICHLOROETHENE	1 UJ	1.1 UJ	1.1 UJ	1 U	1.2 U	1 U	1 U	1.2 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
1,2-DICHLOROETHANE	0.68 UJ	0.69 UJ	0.69 UJ	0.68 UJ	0.75 U	0.66 U	0.66 U	0.75 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
1,2-DICHLOROPROPANE	1.3 UJ	1.3 UJ	1.3 UJ	1.2 UJ	1.4 U	1.2 U	1.2 U	1.4 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
2-BUTANONE	5.2 UJ	5.3 UJ	5.3 UJ	5.2 U	5.8 U	5 U	5.1 U	5.8 U	12 UJ	12 UJ		12 U	12 UR	11 U	11 U	11 UR	12 UJ	11 U	700 UJ	11 U	12 U	12 U
2-HEXANONE	1.4 UJ	1.4 UJ	1.4 UJ	1.4 UJ	1.5 U	1.3 U	1.3 U	1.5 UJ	12 UJ	12 UJ		12 U	12 U	11 U	11 U	11 U	12 UJ	11 U	700 UJ	11 U	12 U	12 U
4-METHYL-2-PENTANONE	5.6 UJ	5.6 UJ	5.6 UJ	5.5 UJ	6.1 U	5.4 U	5.4 U	6.1 UJ	12 UJ	12 UJ		12 U	12 U	11 U	11 U	11 U	12 UJ	11 U	700 UJ	11 U	12 U	12 U
ACETONE	5.2 UJ	5.3 UJ	5.3 UJ	5.2 U	5.8 U	5 U	5.1 U	5.8 U	12 UJ	12 UJ		12 UR	12 UR	11 U	11 UR	11 UR	12 UJ	11 UR	18500 J	11 U	12 UR	12 U
BENZENE	1 UJ	1.1 UJ	1.1 UJ	1 UJ	1.2 U	1 U	1 U	1.2 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
BROMODICHLOROMETHANE	0.8 UJ	0.8 UJ	0.8 UJ	0.79 UJ	0.88 U	0.77 U	0.78 U	0.87 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
BROMOFORM	0.57 UJ	0.57 UJ	0.57 UJ	0.56 UJ	0.63 UJ	0.54 UJ	0.55 U	0.62 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
BROMOMETHANE	1.3 UJ	1.3 UJ	1.3 UJ	1.2 UJ	1.4 U	1.2 U	1.2 U	1.4 UJ	12 UJ	12 UJ		12 U	12 U	11 U	11 U	11 U	12 UJ	11 U	700 UJ	11 U	12 U	12 U
CARBON DISULFIDE	1.2 UJ	1.2 UJ	1.2 UJ	1.1 U	1.3 U	1.1 U	1.1 U	1.3 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
CARBON TETRACHLORIDE	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.4 U	2.1 U	2.1 U	2.4 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
CHLOROBENZENE	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.1 U	1.3 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
CHLORODIBROMOMETHANE	0.78 UJ	0.78 UJ	0.78 UJ	0.77 UJ	0.86 UJ	0.75 UJ	0.75 U	0.85 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
CHLOROETHANE	1.2 UJ	1.2 UJ	1.2 UJ	1.1 U	1.3 U	1.1 U	1.1 U	1.3 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
CHLOROFORM	0.77 UJ	0.77 UJ	0.77 UJ	0.76 U	0.85 U	0.74 U	0.74 U	0.84 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
CHLOROMETHANE	1.4 UJ	1.4 UJ	1.4 UJ	1.4 U	1.5 U	1.3 U	1.3 U	1.5 U	12 UJ	12 UJ		12 U	12 U	11 U	11 U	11 U	12 UJ	11 U	700 UJ	11 U	12 U	12 U
CIS-1,2-DICHLOROETHENE	0.88 UJ	0.89 UJ	0.89 UJ	0.87 U	0.97 U	0.85 U	0.86 U	0.97 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
CIS-1,3-DICHLOROPROPENE	1 UJ	1 UJ	1 UJ	1 UJ	1.1 U	0.98 U	0.99 U	1.1 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
ETHYLBENZENE	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.1 U	1.3 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
METHYLENE CHLORIDE	0.45 UJ	0.46 UJ	16.3 J	15.5	14.3 J	4.6 J	2.3	0.49 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
STYRENE	0.89 UJ	0.9 UJ	0.9 UJ	0.88 UJ	0.99 UJ	0.86 UJ	0.87 U	0.98 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
TETRACHLOROETHENE	0.94 UJ	0.95 UJ	0.95 UJ	0.94 UJ	1 UJ	0.91 UJ	0.92 U	1 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
TOLUENE	0.93 UJ	0.94 UJ	3.7 J	8.6	5.4 J	0.9 U	0.91 U	1 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	7.4	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
TOTAL XYLENES	1 UJ	1 UJ	1 UJ	1 UJ	1.1 UJ	0.99 UJ	1 U	1.1 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	7.8	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
TRANS-1,2-DICHLOROETHENE	1.3 UJ	1.3 UJ	1.3 UJ	1.2 U	1.4 U	1.2 U	1.2 U	1.4 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
TRANS-1,3-DICHLOROPROPENE	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.3 U	1.1 U	1.1 U	1.3 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
TRICHLOROETHENE	1.5 UJ	1.5 UJ	1.5 UJ	1.4 UJ	1.6 U	1.4 U	1.4 U	1.6 UJ	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 UJ	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
VINYL CHLORIDE	1 UJ	1 UJ	1 UJ	1 UJ	1.1 U	0.98 U	0.99 U	1.1 U	5.8 UJ	5.8 UJ		5.8 U	6 U	5.7 U	5.7 U	5.6 U	6.2 UJ	5.6 U	350 UJ	5.7 U	5.8 U	5.8 U
Semivolatile Organics (µg/kg)																						
1,2,4-TRICHLOROBENZENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
1,2-DICHLOROBENZENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
1,3-DICHLOROBENZENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
1,4-DICHLOROBENZENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2,4,5-TRICHLOROPHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2,4,6-TRICHLOROPHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2,4-DICHLOROPHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2,4-DIMETHYLPHENOL	880 U	880 U	880 U	860 U	970 U	840 U	850 U	1900 U	950 U	950 U		1000 U	1000 U	960 U	960 U	950 U	1000 U	940 U	930 U	950 U	980 U	980 U
2,4-DINITROPHENOL	880 U	880 U	880 U	860 U	970 U	840 U	850 U	1900 U	950 U	950 U		1000 U	1000 U	960 U	960 U	950 U	1000 U	940 U	930 U	950 U	980 U	980 U
2,4-DINITROTOLUENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2,6-DINITROTOLUENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2-CHLORONAPHTHALENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U

location	OU2H45	OU2H45	OU2H46	OU2H47	OU2H48	OU2H49	OU2H49	OU2S01	OU2S010	OU2S010	OU2S010	OU2S011	OU2S012	OU2S020	OU2S021	OU2S022	OU2S030	OU2S031	OU2S032	OU2S040	OU2S041	OU2S050
nsample	**NTCSSH4500**	**NTCSSH4500-D**	**NTCSSH4600**	**NTCSSH4700**	**NTCSSH4800**	**NTCSSH4900**	**NTCSSH4900-D**	**NTCSSS0100**	**NTCSSS1000**	**NTCSSS1000-D**	**NTCSSS10000**	**NTCSSS1100**	**NTCSSS1200**	**NTCSSS2000**	**NTCSSS2100**	**NTCSSS2200**	**NTCSSS3000**	**NTCSSS3100**	**NTCSSS3200**	**NTCSSS4000**	**NTCSSS4100**	**NTCSSS5000**
sample_dat	19980513	19980513	19980513	19980513	19980513	19980513	19980513	19980512	19970628	19970628	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970628
qc_type	NM	FD	NM	NM	NM	NM	FD	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate		NTCSSH4500					NTCSSH4900			NTCSSS1000												
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2-METHYLNAPHTHALENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2-METHYLPHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2-NITROANILINE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
2-NITROPHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
3&4-METHYLPHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
3,3'-DICHLOROBENZIDINE	880 U	880 U	880 U	860 U	970 U	840 U	850 U	1900 U	950 U	950 U		1000 U	1000 UJ	960 U	960 U	950 UJ	1000 U	940 U	930 UJ	950 U	980 U	980 UJ
3-NITROANILINE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
4,6-DINITRO-2-METHYLPHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
4-BROMOPHENYL PHENYL ETHER	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
4-CHLORO-3-METHYLPHENOL	880 U	880 U	880 U	860 U	970 U	840 U	850 U	1900 U	950 U	950 U		1000 U	1000 U	960 U	960 U	950 U	1000 U	940 U	930 U	950 U	980 U	980 U
4-CHLOROANILINE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
4-CHLOROPHENYL PHENYL ETHER	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
4-NITROANILINE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
4-NITROPHENOL	880 U	880 U	880 U	860 U	970 U	840 U	850 U	1900 U	950 U	950 U		1000 U	1000 U	960 U	960 U	950 U	1000 U	940 U	930 U	950 U	980 U	980 U
ACENAPHTHENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
ACENAPHTHYLENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
ANTHRACENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
BAP EQUIVALENT-HALFND	88 U	96 U	88 U	86 U	97 U	84 U	85 U	190 U	95 U	95 U		100 U	100 U	96 U	96 U	95 U	100 U	94 U	93 U	95 U	250	98 U
BENZO(A)ANTHRACENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 UJ	380 U	380 U	380 UJ	420 U	370 U	370 UJ	380 U	390 U	390 UJ
BENZO(A)PYRENE	88 U	96 U	88 U	86 U	97 U	84 U	85 U	190 U	95 U	95 U		100 U	100 U	96 U	96 U	95 U	100 U	94 U	93 UJ	95 U	142	98 U
BENZO(B)FLUORANTHENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 UJ	380 U	390 U	390 U
BENZO(G,H,I)PERYLENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 UJ	380 U	390 U	390 U
BENZO(K)FLUORANTHENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 UJ	380 U	390 U	390 U
BIS(2-CHLOROETHOXY)METHANE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
BIS(2-CHLOROETHYL)ETHER	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
BIS(2-CHLOROISOPROPYL)ETHER	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 UJ	380 U	380 U	380 UJ	420 U	370 U	370 UJ	380 U	390 U	390 UJ
BUTYL BENZYL PHTHALATE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 UJ	380 U	380 U	380 UJ	420 U	370 U	370 UJ	380 U	390 U	390 UJ
CARBAZOLE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
CHRYSENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 UJ	380 U	380 U	380 UJ	420 U	370 U	370 UJ	380 U	390 U	390 UJ
DI-N-BUTYL PHTHALATE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
DI-N-OCTYL PHTHALATE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 UJ	380 U	390 U	390 U
DIBENZO(A,H)ANTHRACENE	88 U	96 U	88 U	86 U	97 U	84 U	85 U	190 U	95 U	95 U		100 U	100 U	96 U	96 U	95 U	100 U	94 U	93 UJ	95 U	96 U	98 U
DIBENZOFURAN	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
DIETHYL PHTHALATE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
DIMETHYL PHTHALATE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
FLUORANTHENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	191 J	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
FLUORENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 UJ	380 U	390 U	390 U
HEXACHLOROBENZENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
HEXACHLOROBUTADIENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
HEXACHLOROCYCLOPENTADIENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
HEXACHLOROETHANE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
INDENO(1,2,3-CD)PYRENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 UJ	380 U	390 U	390 U
ISOPHORONE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
N-NITROSO-DI-N-PROPYLAMINE	18 U	19 U	18 U	17 U	19 U	17 U	17 U	38 U	19 U	19 U		20 U	20 U	19 U	19 U	19 U	21 U	19 U	19 U	19 U	19 U	20 U
N-NITROSODIPHENYLAMINE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
NAPHTHALENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U

location	OU2H45	OU2H45	OU2H46	OU2H47	OU2H48	OU2H49	OU2H49	OU2S01	OU2S010	OU2S010	OU2S010	OU2S011	OU2S012	OU2S020	OU2S021	OU2S022	OU2S030	OU2S031	OU2S032	OU2S040	OU2S041	OU2S050
nsample	**NTCSSH4500**	**NTCSSH4500-D**	**NTCSSH4600**	**NTCSSH4700**	**NTCSSH4800**	**NTCSSH4900**	**NTCSSH4900-D**	**NTCSSS0100**	**NTCSSS1000**	**NTCSSS1000-D**	**NTCSSS10000**	**NTCSSS1100**	**NTCSSS1200**	**NTCSSS2000**	**NTCSSS2100**	**NTCSSS2200**	**NTCSSS3000**	**NTCSSS3100**	**NTCSSS3200**	**NTCSSS4000**	**NTCSSS4100**	**NTCSSS5000**
sample_dat	19980513	19980513	19980513	19980513	19980513	19980513	19980513	19980512	19970628	19970628	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970628
qc_type	NM	FD	NM	NM	NM	NM	FD	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate		NTCSSH4500					NTCSSH4900			NTCSSS1000												
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
PHENANTHRENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
PHENOL	350 U	350 U	350 U	350 U	390 U	340 U	340 U	770 U	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 U	380 U	390 U	390 U
PYRENE	350 U	350 U	350 U	350 U	390 U	340 U	340 U	145 J	380 U	380 U		410 U	400 U	380 U	380 U	380 U	420 U	370 U	370 UJ	380 U	390 U	390 UJ
Pesticides/PCBs (µg/kg)																						
4,4'-DDD	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	2.1 U	2.1 U	2 U	2.1 U	2.2 U	2 U	2 U	1.9 U	5.3	2 U	1.9 U	2 U	2 U	2.1 U
4,4'-DDE	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	1 U	1 U	2.4	1 U	1 U	5.2	0.98 U	4.4	41	0.97 U	0.93 U	2.9	0.99 U	3.5
4,4'-DDT	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	4.7 U	4.6 U	7.8	4.6 U	4.8 U	4.5 U	4.5 U	4.3 U	4.9 U	4.5 U	4.3 U	4.5 U	4.6 U	4.6 U
ALDRIN	1.8 U	3.5 U	1.8 U	1.7 U	1.9 U	1.7 U	1.7 U	1.9 U	3.7 U	3.6 U	3.5 U	3.7 U	3.8 U	3.6 U	3.6 U	3.4 U	3.9 U	3.6 U	3.4 U	3.6 U	3.6 U	3.7 U
ALPHA-BHC	1.8 U	3.5 U	1.8 U	1.7 U	1.9 U	1.7 U	1.7 U	1.9 U	0.82 U	0.8 U	0.78 U	0.81 U	0.84 U	0.79 U	0.79 U	0.75 U	0.86 U	0.78 U	0.75 U	0.79 U	0.8 U	0.81 U
ALPHA-CHLORDANE	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	0.86 U	0.84 U	1.7	0.85 U	0.88 U	0.83 U	0.83 U	0.79 U	0.9 U	0.82 U	0.79 U	0.82 U	0.84 U	0.85 U
AROCLOR-1016	70 U	70 U	35 U	34 U	38 U	33 U	34 U	76 U		20 U												
AROCLOR-1221	70 U	70 U	35 U	34 U	38 U	33 U	34 U	76 U		7.3 U												
AROCLOR-1232	70 U	70 U	35 U	34 U	38 U	33 U	34 U	76 U		16 U												
AROCLOR-1242	70 U	70 U	35 U	34 U	38 U	33 U	34 U	76 U		11 U												
AROCLOR-1248	70 U	70 U	35 U	34 U	38 U	33 U	34 U	76 U		8.4 U												
AROCLOR-1254	70 U	70 U	35 U	34 U	38 U	33 U	34 U	76 U		13 U												
AROCLOR-1260	70 U	70 U	35 U	34 U	38 U	33 U	34 U	76 U		18 U												
BETA-BHC	1.8 U	3.5 U	1.8 U	1.7 U	1.9 U	1.7 U	1.7 U	1.9 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U
DELTA-BHC	1.8 U	3.5 U	1.8 U	1.7 U	1.9 U	1.7 U	1.7 U	1.9 U	1.4 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.3 U	1.5 U	1.4 U	1.3 U	1.4 U	1.4 U	1.4 U
DIELDRIN	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	1 U	1 U	0.96 U	1 U	1 U	0.98 U	0.98 U	0.93 U	1.1 U	0.97 U	0.93 U	0.98 U	0.99 U	1 U
ENDOSULFAN I	1.8 U	3.5 U	1.8 U	1.7 U	1.9 U	1.7 U	1.7 U	1.9 U	1 U	1 U	1 U	1 U	1.1 U	1 U	1 U	0.97 U	1.1 U	1 U	0.97 U	1 U	1 U	1 U
ENDOSULFAN II	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	1.3 U	1.3 U	1.3 U	1.3 U	1.4 U	1.3 U	1.3 U	1.2 U	1.4 U	1.3 U	1.2 U	1.3 U	1.3 U	1.3 U
ENDOSULFAN SULFATE	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	4.3 U	4.2 U	4.1 U	4.2 U	4.4 U	4.2 U	4.2 U	3.9 U	4.5 U	4.1 U	3.9 U	4.1 U	4.2 U	4.2 U
ENDRIN	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	1.7 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U	1.5 U	1.8 U	1.6 U	1.5 U	1.6 U	1.6 U	1.6 U
ENDRIN ALDEHYDE	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	1.6 U	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.4 U	1.6 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U
ENDRIN KETONE	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	7.8 U	7.7 U	7.4 U	7.7 U	8 U	7.6 U	7.6 U	7.2 U	8.2 U	7.5 U	7.2 U	7.5 U	7.6 U	7.7 U
GAMMA-BHC (LINDANE)	1.8 U	3.5 U	1.8 U	1.7 U	1.9 U	1.7 U	1.7 U	1.9 U	0.86 U	0.84 U	0.82 U	0.85 U	0.88 U	0.83 U	0.83 U	0.79 U	0.9 U	0.82 U	0.79 U	0.82 U	0.84 U	0.85 U
GAMMA-CHLORDANE	3.5 U	7 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.8 U	0.97 U	0.96 U	1.9	0.96 U	1 U	0.94 U	0.94 U	0.9 U	1 U	0.94 U	0.9 U	0.94 U	0.95 U	0.96 U
HEPTACHLOR	1.8 U	3.5 U	1.8 U	1.7 U	1.9 U	1.7 U	1.7 U	1.9 U	1 U	1 U	0.96 U	1 U	1 U	0.98 U	0.98 U	0.93 U	1.1 U	0.97 U	0.93 U	0.98 U	1.4	1 U
HEPTACHLOR EPOXIDE	1.8 U	3.5 U	1.8 U	1.7 U	1.9 U	1.7 U	1.7 U	1.9 U	1 U	1 U	1 U	1 U	1.1 U	1 U	1 U	0.97 U	1.1 U	1 U	0.97 U	1 U	1 U	1 U
METHOXYCHLOR	18 U	35 U	18 U	17 U	19 U	17 U	17 U	19 U	7 U	6.9 U	6.7 U	6.9 U	7.2 U	6.8 U	6.8 U	6.5 U	7.4 U	6.7 U	6.5 U	6.8 U	6.8 U	6.9 U
TOXAPHENE	180 U	350 U	180 U	170 U	190 U	170 U	170 U	190 U	78 U	77 U	74 U	77 U	80 U	76 U	76 U	72 U	82 U	75 U	72 U	75 U	76 U	77 U
Inorganics (mg/kg)																						
ALUMINUM	863	560	589	832	1810	517	444	2500	2980	2080	3680	3430	1210	3510	2030	2800	4340	2760	1560	3590	1970	3380
ANTIMONY	0.84	0.34 U	0.34 U	0.33 U	0.37 U	0.32 U	0.33 U	0.4	0.32 U	0.31 U	0.29 U	0.31 U	0.33 U	0.31 U	0.31 U	0.31 U	0.33 U	0.3 U	0.3 U	0.31 U	0.31 U	0.32 U
ARSENIC	0.25 U	0.25 U	0.25 U	0.25 U	0.35	0.24 U	0.24 U	0.54	0.98	0.65	0.51	0.52 U	1.3	2.5	3.8	2.1	2.5	2.4	0.61	2.3	3.8	3.2
BARIUM	12	3.8	8	3.4	5	3	3.3	26.7	8 U	5.8 U	14	10	3.8	7.4 U	5.7 U	7.3	13.3	13.7	5	15.9	6.6 U	16.7
BERYLLIUM	0.16 U	0.2 U	0.14 U	0.2 U	0.26 U	0.2 U	0.2 U	0.26 U	0.13 U	0.09 U	0.06 U	0.11 U	0.04 U	0.09 U	0.05 U	0.07 U	0.1 U	0.07 U	0.04 U	0.06 U	0.05 U	0.08 U
CADMIUM	0.3 U	0.07 U	3.5 U	0.3 U	0.11 U	0.11 U	0.08 U	0.22 U	0.06 U	0.06 U	0.05 U	0.07 U	0.06 U	0.06 U	0.06 U	0.23	0.13	0.41 U	0.16	0.06 U	0.06 U	0.06 U
CALCIUM	425 J	322 J	334 J	286 J	338 J	252 J	247 J	2190 J	668	670	1020	773	431	553	472	684	1460	480	536	825	620	942
CHROMIUM	0.96 U	0.71 U	0.82 U	1.1 U	2 U	0.86 U	0.89 U	4.1	3.9	2.6	4.3	3.9	2.4	3.5	2.5	4.8	4.7	3.3	2.5	4.3	2.9	4
COBALT	0.15 U	0.15 U	0.15	0.14 U	0.25	0.14 U	0.14 U	0.22	0.2 U	0.2 U	0.18 U	0.24	0.21 U	0.2 U	0.19 U	0.27	0.26	0.23	0.19 U	0.19 U	0.25	0.21
COPPER	2.8	1	4.6	0.57	0.9	0.72	0.62	5.1	0.78	0.77	1.6	1.2	1.4 U	0.82	1.2	4.5	4.6	1.7	2.1 U	1	1.8	1.4
CYANIDE									1.1 UR	1.1 UR		1.2 UR	1.2 U	1 UR	1.2 UR	1.13 U	1.2 UR	1.1 UR	1.11 U	1.1 UR	1.2 UR	1.2 UR
IRON	233	193	132	252	395	228	196	936	538	467	335	837	694 J	589	878	955 J	1130	1220	1240 J	374	1020	836
LEAD	6.4	4	5	3.4	5	2.5	2.2	12.5	4.3	3.3	6.5	5.6	2.4	3.7	3.9	13.5	6.5	4.7	9.2	4.1	4.6	5
MAGNESIUM	63.2	50.2	68.4	59	82.6	53.3	47.3	212	83.1	75.4	112	84.5	37.1	67	52.4	54.9	127	63.7	39.9	116	59.4	113

location	OU2H45	OU2H45	OU2H46	OU2H47	OU2H48	OU2H49	OU2H49	OU2S01	OU2S010	OU2S010	OU2S010	OU2S011	OU2S012	OU2S020	OU2S021	OU2S022	OU2S030	OU2S031	OU2S032	OU2S040	OU2S041	OU2S050
nsample	**NTCSSH4500**	**NTCSSH4500-D**	**NTCSSH4600**	**NTCSSH4700**	**NTCSSH4800**	**NTCSSH4900**	**NTCSSH4900-D**	**NTCSSS0100**	**NTCSSS1000**	**NTCSSS1000-D**	**NTCSSS10000**	**NTCSSS1100**	**NTCSSS1200**	**NTCSSS2000**	**NTCSSS2100**	**NTCSSS2200**	**NTCSSS3000**	**NTCSSS3100**	**NTCSSS3200**	**NTCSSS4000**	**NTCSSS4100**	**NTCSSS5000**
sample_dat	19980513	19980513	19980513	19980513	19980513	19980513	19980513	19980512	19970628	19970628	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970628
qc_type	NM	FD	NM	NM	NM	NM	FD	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate		NTCSSH4500					NTCSSH4900			NTCSSS1000												
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	0.64 U	0.05 U	0.74 U	0.71 U	1.1 U	0.66 U	0.48 U	11.9	2.3	2.1	2.9	4.1	2.2	4.4	3.5	6.9	7.6	2.5	4.2	2.7	4.3	4.7
MERCURY	0.04 U	0.04 U	0.04 U	0.04 U	0.05 U	0.04 U	0.04 U	0.05 U	0.1	0.09 U	0.09 U	0.1 U	0.1 U	0.09 U	0.1 U	0.1 U	0.1 U	0.09 U	0.09 U	0.09 U	0.1 U	0.1 U
NICKEL	1.6 U	0.74 U	2.4 U	1.3 U	1.6 U	0.77 U	0.67 U	1.2 U	0.96	0.68	0.91	1.7	0.57	1.4	1.2	1.4	1.9	2.3	0.88	0.77	0.96	1.1
POTASSIUM	41.2 U	21.9 U	39.8 U	19.3 U	24.9 U	17.9 U	15.2 U	93.4	40.4	33.5	39.6	47.2	28.7	30.4	37.2	54.8	44.4	53.9	26.1	63	51.9	52.4
SELENIUM	0.31	0.31 U	0.31 U	0.3	0.54	0.29 U	0.3 U	0.56	0.43 U	0.43 U	0.39 U	0.43 U	0.45 U	0.43 U	0.42 U	0.42 U	0.46 U	0.42 U	0.42 U	0.42 U	0.43 U	0.43 U
SILVER	0.13 U	0.13 U	0.13 U	0.12 U	0.14 U	0.12 U	0.12 U	0.14 U	0.23 U	0.23 U	0.21 U	0.23 U	0.24 U	0.23 U	0.23 U	0.23 U	0.25 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
SODIUM	170 U	170 U	170 U	170 U	190 U	160 U	160 U	180 U	96.7 U	95.2 U	87.9 U	95.9 U	99.5 U	95 U	94.3 U	93.5 U	102 U	93 U	92.8 U	94.1 U	95 U	96.5 U
THALLIUM	0.27 U	0.28 U	0.28 U	0.27 U	0.3 U	0.26 U	0.26 U	0.3 U	0.47 U	0.46 U	0.43 U	0.46 U	0.48 U	0.46 U	0.46 U	0.45 U	0.5 U	0.45 U	0.45 U	0.46 U	0.46 U	0.47 U
VANADIUM	0.16 U	0.85	0.64	0.63	1.6	0.6	0.53	0.17 U	2.2	1.7 U	2.3	4.8	1.9	3.5	2.8	3	4.7	4.2	2.2	3.1	2.6	4.3
ZINC	4.3	3.9	4.6	2.9	3.9	3.3	3.5	33.8	3.8 U	3.1 U	5.8	6.1	3.3 U	4.2 U	5.7	16.5	8.9	5.8	12.8	1.8 U	5.3	9.6
Herbicides (µg/kg)																						
2,4,5-T	1.4 U	1.4 U	1.4 U	1.4 U	1.5 U	1.3 U	1.3 U	1.5 U	1.5 U	1.5 U	1.4 U	1.5 U	1.6 U	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U
2,4,5-TP (SILVEX)	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.5 U	1.5 U	1.7 U	1.8 U	1.7 U	1.6 U	1.8 U	1.8 U	1.7 U	1.7 U	1.7 U	1.9 U	1.7 U	1.7 U	1.7 U	1.7 U	1.8 U
2,4-D	7.4 U	7.4 U	7.4 U	7.4 U	8 U	7 U	7 U	8 U	8.2 U	8 U	7.4 U	8.1 U	8.4 U	8 U	8 U	7.9 U	8.6 U	7.9 U	7.8 U	7.9 U	8 U	8.2 U
2,4-DB	4.2 U	4.2 U	4.2 U	4.2 U	4.6 U	4 U	4 U	4.6 U	4.7 U	4.6 U	4.2 U	4.6 U	4.8 U	4.6 U	4.6 U	4.5 U	4.9 U	4.5 U	4.5 U	4.5 U	4.6 U	4.7 U
DALAPON	8.4 U	8.4 U	8.4 U	8.4 U	9.2 U	8 U	8 U	9.2 U	9.3 U	9.2 U	8.5 U	9.2 U	9.6 U	9.2 U	9.1 U	9 U	9.8 U	9 U	8.9 U	9 U	9.2 U	9.3 U
DICAMBA	4.2 U	4.2 U	4.2 U	4.2 U	4.6 U	4 U	4 U	4.6 U	4.7 U	4.6 U	4.2 U	4.6 U	4.8 U	4.6 U	4.6 U	4.5 U	4.9 U	4.5 U	4.5 U	4.5 U	4.6 U	4.7 U
DICHLOROPROP	21 U	21 U	21 U	21 U	23 U	20 U	20 U	23 U	23 U	23 U	21 U	23 U	24 U	23 U	23 U	22 U	25 U	22 U	22 U	23 U	23 U	23 U
DINOSEB	4.2 U	4.2 U	4.2 U	4.2 U	4.6 U	4 U	4 U	4.6 U	4.7 U	4.6 U	4.2 U	4.6 U	4.8 U	4.6 U	4.6 U	4.5 U	4.9 U	4.5 U	4.5 U	4.5 U	4.6 U	4.7 U
MCPA	2100 U	2100 U	2100 U	2100 U	2300 U	2000 U	2000 U	2300 U	2300 U	2300 U	2100 U	2300 U	2400 U	2300 U	2300 U	2200 U	2500 U	2200 U	2200 U	2300 U	2300 U	2300 U
MCPP	1000 U	1000 U	1000 U	1000 U	1200 U	1000 U	1000 U	1200 U	1200 U	1200 U	1100 U	1200 U	1200 U	1200 U	1100 U	1100 U	1200 U	1100 U	1100 U	1100 U	1200 U	1200 U
PENTACHLOROPHENOL	2.1 U	2.1 U	2.1 U	2.1 U	2.3 U	2 U	2 U	4.7	2.3 U	2.3 U	2.1 U	2.3 U	2.4 U	2.3 U	2.3 U	2.2 U	2.5 U	2.2 U	2.2 U	2.3 U	2.3 U	2.3 U
Miscellaneous Parameters (mg/kg)																						
CATION EXCHANGE CAPACITY		9480				4800	10100							978					1500			1740
CYANIDE	1 U	1 U	1 U	1 U	1.2 U	1 U	1 U	1.2 UJ														
DIESEL RANGE ORGANICS									8.34	9.5 U		9.97 J	12.7	8.16 J	9.6 U	9.5 U	11.5	9.6	9.3 U	9.5 U	9.76	9.8 U
GASOLINE RANGE ORGANICS									0.12 U	0.11 U		0.12 U	0.12 U	0.12 U	0.12 U	0.11 U	0.12 U	0.11 U	0.11 U	0.11 U	0.12 U	0.12 U
TOTAL ORGANIC CARBON		25900				12500	11800							14700					11200			9860
Petroleum Hydrocarbons (mg/kg)																						
TOTAL PETROLEUM HYDROCARBONS	49.6	63.4	50.7	25.2	41.5	30.4	37	65.3														
Radiological (pCi/g)																						
ACTINIUM-228	0.5			0.8				0.7														
BISMUTH-214	0.8	0.5				1.2																
CESIUM-137					0.1																	
GROSS ALPHA	0.5 U	7.5	1.6 U	0 U	8.3	3.8	5.1	5.5	1.61	0.855		2.33	0.785	1.63	0.936	1.1	1.95	2.37	0.669	2.01	1.27	1.81
GROSS BETA	1.2 U	0 U	7	28	6.4	15.3	0.4 U	1.3 U	0.733	0.406		1.11	-0.047 U	0.609	0.478	0.731	0.951	0.674	0.387	0.934	0.558	0.699
LEAD-210																						
LEAD-212	0.2	0.2	0.2	0.2	0.3		0.2	0.4														
LEAD-214	0.8		0.6	0.5	1.1	1.4	0.6															
THALLIUM-208	0.2	0.1					0.2	0.4														

location	OU2S051	OU2S052	OU2S060	OU2S061	OU2S062	OU2S070	OU2S071	OU2S072	OU2S080	OU2S080	OU2S081	OU2S082	OU2S083	OU2S090	OU2S092	OU2S099	OU2S101	OU2S102	OU2S102	OU2S104	OU2S105	OU2S108
nsample	**NTCSSS5100**	**NTCSSS5200**	**NTCSSS6000**	**NTCSSS6100**	**NTCSSS6200**	**NTCSSS7000**	**NTCSSS7100**	**NTCSSS7200**	**NTCSSS8000**	**NTCSSS8000-D**	**NTCSSS8100**	**NTCSSS8200**	**NTCSSS8300**	**NTCSSS9000**	**NTCSSS9200**	**NTCSSS9900**	**NTCSS10100**	**NTCSS10200**	**NTCSS10200-D**	**NTCSS10400**	**NTCSS10500**	**NTCSS10800**
sample_dat	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970628	19970629	19970630	19970701	19970628	19970630	19970701	99990101	19970630	19970630	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate										NTCSSS8000									NTCSS10200			
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (µg/kg)																						
1,1,1-TRICHLOROETHANE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 UJ	5.6 U	5.8 U	5.8 U	5.8 UJ	370 U	5.4 U
1,1,2,2-TETRACHLOROETHANE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
1,1,2-TRICHLOROETHANE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
1,1-DICHLOROETHANE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
1,1-DICHLOROETHENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
1,2-DICHLOROETHANE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 UJ	5.6 U	5.8 U	5.8 U	5.8 UJ	370 U	5.4 U
1,2-DICHLOROPROPANE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
2-BUTANONE	11 U	12 U	11 U	13 U	11 U	11 U	11 U	11 U	10 U	12 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U	12 U	12 U	12 U	740 U	11 UR
2-HEXANONE	11 U	12 U	11 U	13 U	11 U	11 U	11 U	11 U	10 U	12 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U	12 U	12 U	12 U	740 U	11 U
4-METHYL-2-PENTANONE	11 U	12 U	11 U	13 U	11 U	11 U	11 U	11 U	10 U	12 U	11 U	12 U	12 UJ	11 U	11 U	11 U	11 U	12 U	12 U	12 U	740 U	11 U
ACETONE	11 UR	99 J	11 U	13 UR	212 J	11 U	11 UR	11 UR	10 UR	12 UR	11 UR	12 UR	12 U	11 UR	11 UR	11 UR	11 UR	12 UR	12 UR	123 J	17000	11 UR
BENZENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
BROMODICHLOROMETHANE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 UJ	5.6 U	5.8 U	5.8 U	5.8 UJ	370 U	5.4 U
BROMOFORM	5.6 UJ	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
BROMOMETHANE	11 U	12 U	11 U	13 U	11 U	11 U	11 U	11 U	10 U	12 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U	12 U	12 U	12 U	740 U	11 U
CARBON DISULFIDE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 UJ	5.6 U	5.8 U	5.8 U	5.8 UJ	370 U	5.4 UJ
CARBON TETRACHLORIDE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 UJ	5.6 U	5.8 U	5.8 U	5.8 UJ	370 U	5.4 UJ
CHLOROBENZENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
CHLORODIBROMOMETHANE	5.6 UJ	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 UJ	5.6 U	5.8 U	5.8 U	5.8 UJ	370 U	5.4 U
CHLOROETHANE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
CHLOROFORM	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
CHLOROMETHANE	11 U	12 U	11 U	13 U	11 U	11 U	11 U	11 U	10 U	12 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U	12 U	12 U	12 U	740 U	11 U
CIS-1,2-DICHLOROETHENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
CIS-1,3-DICHLOROPROPENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
ETHYLBENZENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
METHYLENE CHLORIDE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
STYRENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
TETRACHLOROETHENE	5.6 U	5.8 U	0.5 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 UJ	5.6 U	3	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
TOLUENE	5.6 U	5.8 U	5.5 U	6.5 U	5.6 U	5.4 U	9.4 J	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
TOTAL XYLENES	5.6 U	5.8 U	6 U	6.5 U	5.6 U	5.4 U	6 J	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
TRANS-1,2-DICHLOROETHENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
TRANS-1,3-DICHLOROPROPENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
TRICHLOROETHENE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
VINYL CHLORIDE	5.6 U	5.8 U	5.6 U	6.5 U	5.6 U	5.4 U	5.5 U	5.6 U	5.2 U	5.9 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.4 U	5.6 U	5.8 U	5.8 U	5.8 U	370 U	5.4 U
Semivolatile Organics (µg/kg)																						
1,2,4-TRICHLOROBENZENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
1,2-DICHLOROBENZENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
1,3-DICHLOROBENZENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
1,4-DICHLOROBENZENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2,4,5-TRICHLOROPHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2,4,6-TRICHLOROPHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2,4-DICHLOROPHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2,4-DIMETHYLPHENOL	3800 U	960 U	940 U	3900 U	3700 UJ	920 U	920 U	3800 UJ	930 U	940 U	930 U	3900 UJ	940 U	900 U	940 U	950 U	910 U	2000 U	940 U	930 U	940 U	960 U
2,4-DINITROPHENOL	3800 U	960 U	940 U	3900 U	3700 UJ	920 U	920 U	3800 UJ	930 U	940 U	930 U	3900 UJ	940 U	900 U	940 U	950 U	910 U	2000 U	940 U	930 U	940 U	960 U
2,4-DINITROTOLUENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2,6-DINITROTOLUENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2-CHLORONAPHTHALENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U

location	OU2S051	OU2S052	OU2S060	OU2S061	OU2S062	OU2S070	OU2S071	OU2S072	OU2S080	OU2S080	OU2S081	OU2S082	OU2S083	OU2S090	OU2S092	OU2S099	OU2S101	OU2S102	OU2S102	OU2S104	OU2S105	OU2S108
nsample	**NTCSSS5100**	**NTCSSS5200**	**NTCSSS6000**	**NTCSSS6100**	**NTCSSS6200**	**NTCSSS7000**	**NTCSSS7100**	**NTCSSS7200**	**NTCSSS8000**	**NTCSSS8000-D**	**NTCSSS8100**	**NTCSSS8200**	**NTCSSS8300**	**NTCSSS9000**	**NTCSSS9200**	**NTCSSS9900**	**NTCSS10100**	**NTCSS10200**	**NTCSS10200-D**	**NTCSS10400**	**NTCSS10500**	**NTCSS10800**
sample_dat	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970628	19970629	19970630	19970701	19970628	19970630	19970701	99990101	19970630	19970630	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate										NTCSSS8000									NTCSS10200			
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2-METHYLNAPHTHALENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2-METHYLPHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2-NITROANILINE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
2-NITROPHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
3&4-METHYLPHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
3,3'-DICHLOROBENZIDINE	3800 U	960 UJ	940 U	3900 U	3700 UJ	920 UJ	920 U	3800 UJ	930 U	940 U	930 U	3900 UJ	940 UJ	900 UJ	940 UJ	950 U	910 U	2000 U	940 UJ	930 U	940 U	960 U
3-NITROANILINE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
4,6-DINITRO-2-METHYLPHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
4-BROMOPHENYL PHENYL ETHER	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
4-CHLORO-3-METHYLPHENOL	3800 U	960 U	940 U	3900 U	3700 UJ	920 U	920 U	3800 UJ	930 U	940 U	930 U	3900 UJ	940 U	900 U	940 U	950 U	910 U	2000 U	940 U	930 U	940 U	960 U
4-CHLOROANILINE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
4-CHLOROPHENYL PHENYL ETHER	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
4-NITROANILINE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
4-NITROPHENOL	3800 U	960 U	940 U	3900 U	3700 UJ	920 U	920 U	3800 UJ	930 U	940 U	930 U	3900 UJ	940 U	900 U	940 U	950 U	910 U	2000 U	940 U	930 U	940 U	960 U
ACENAPHTHENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
ACENAPHTHYLENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
ANTHRACENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
BAP EQUIVALENT-HALFND	650	220	94 U	390 U	1700	230	92 U	910	93 U	94 U	93 U	1600	94 U	90 U	390	95 U	460	1600	600	93 U	94 U	96 U
BENZO(A)ANTHRACENE	1500 U	380 UJ	380 U	1600 U	1050 J	370 UJ	370 U	497 J	370 U	370 U	370 U	900 J	380 UJ	360 UJ	380 UJ	380 U	360 U	1060	465 J	370 U	370 U	380 U
BENZO(A)PYRENE	227	112	94 U	390 U	1030 J	123	92 U	499 J	93 U	94 U	93 U	923 J	94 UJ	90 UJ	286 J	95 UJ	285	982	396	93 UJ	94 UJ	96 UJ
BENZO(B)FLUORANTHENE	1500 U	380 U	380 U	1600 U	1090 J	370 U	370 U	1500 UJ	370 U	370 U	370 U	676 J	380 U	360 UJ	380 UJ	380 U	360 U	829	380 U	370 U	370 U	380 U
BENZO(G,H,I)PERYLENE	1500 U	380 U	380 U	1600 U	1390 J	370 U	370 U	1500 UJ	370 U	370 U	370 U	876 J	380 U	360 UJ	380 UJ	380 U	360 U	851	380	370 U	370 U	380 U
BENZO(K)FLUORANTHENE	1500 U	380 U	380 U	1600 U	586 J	370 U	370 U	1500 UJ	370 U	370 U	370 U	755 J	380 U	360 UJ	380 UJ	380 U	360 U	680	380 U	370 U	370 U	380 U
BIS(2-CHLOROETHOXY)METHANE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
BIS(2-CHLOROETHYL)ETHER	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
BIS(2-CHLOROISOPROPYL)ETHER	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	1500 U	380 UJ	380 U	1600 U	1500 UJ	370 UJ	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 UJ	360 UJ	380 UJ	380 U	360 U	780 U	380 UJ	370 U	370 U	380 U
BUTYL BENZYL PHTHALATE	1500 U	380 UJ	380 U	1600 U	1500 UJ	370 UJ	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 UJ	360 UJ	380 UJ	380 U	360 U	780 U	380 UJ	370 U	370 U	380 U
CARBAZOLE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
CHRYSENE	1500 U	380 UJ	380 U	1600 U	1130 J	370 UJ	370 U	517 J	370 U	370 U	370 U	919 J	380 UJ	360 UJ	380 UJ	380 U	360 U	1080	486 J	370 U	370 U	380 U
DI-N-BUTYL PHTHALATE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
DI-N-OCTYL PHTHALATE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 UJ	380 UJ	380 U	360 U	780 U	380 U	370 U	370 U	380 U
DIBENZO(A,H)ANTHRACENE	380 U	96 U	94 U	390 U	353 J	92 U	92 U	200 J	93 U	94 U	93 U	398 J	94 UJ	90 UJ	94 UJ	95 UJ	119	294	116	93 UJ	94 UJ	96 UJ
DIBENZOFURAN	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
DIETHYL PHTHALATE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
DIMETHYL PHTHALATE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
FLUORANTHENE	1500 U	380 U	380 U	1600 U	1670 J	370 U	370 U	789 J	370 U	370 U	370 U	1620 J	380 UJ	360 U	692	380 UJ	513	1850	852 J	370 U	370 U	380 U
FLUORENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 UJ	380 U	360 U	780 U	380 U	370 U	370 U	380 U
HEXACHLOROBENZENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
HEXACHLOROBUTADIENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
HEXACHLOROCYCLOPENTADIENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
HEXACHLOROETHANE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
INDENO(1,2,3-CD)PYRENE	1500 U	380 U	380 U	1600 U	1170 J	370 U	370 U	1500 UJ	370 U	370 U	370 U	810 J	380 U	360 UJ	380 UJ	380 U	360 U	797	380 U	370 U	370 U	380 U
ISOPHORONE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
N-NITROSO-DI-N-PROPYLAMINE	76 U	19 U	19 U	78 U	74 UJ	18 U	18 U	75 UJ	19 U	19 U	19 U	97 UJ	19 UJ	18 U	19 U	19 U	18 U	39 U	19 U	18 U	19 U	19 U
N-NITROSODIPHENYLAMINE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
NAPHTHALENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U

location	OU2S051	OU2S052	OU2S060	OU2S061	OU2S062	OU2S070	OU2S071	OU2S072	OU2S080	OU2S080	OU2S081	OU2S082	OU2S083	OU2S090	OU2S092	OU2S099	OU2S101	OU2S102	OU2S102	OU2S104	OU2S105	OU2S108
nsample	**NTCSSS5100**	**NTCSSS5200**	**NTCSSS6000**	**NTCSSS6100**	**NTCSSS6200**	**NTCSSS7000**	**NTCSSS7100**	**NTCSSS7200**	**NTCSSS8000**	**NTCSSS8000-D**	**NTCSSS8100**	**NTCSSS8200**	**NTCSSS8300**	**NTCSSS9000**	**NTCSSS9200**	**NTCSSS9900**	**NTCSS10100**	**NTCSS10200**	**NTCSS10200-D**	**NTCSS10400**	**NTCSS10500**	**NTCSS10800**
sample_dat	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970628	19970629	19970630	19970701	19970628	19970630	19970701	99990101	19970630	19970630	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate										NTCSSS8000									NTCSS10200			
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
PHENANTHRENE	1500 U	380 U	380 U	1600 U	571 J	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	1420	456	370 U	370 U	380 U
PHENOL	1500 U	380 U	380 U	1600 U	1500 UJ	370 U	370 U	1500 UJ	370 U	370 U	370 U	1500 UJ	380 U	360 U	380 U	380 U	360 U	780 U	380 U	370 U	370 U	380 U
PYRENE	1500 U	380 U	380 U	1600 U	1240 J	370 UJ	370 U	562 J	370 U	370 U	370 U	1110 J	380 UJ	360 UJ	509 J	380 UJ	383	1370	589 J	370 U	370 U	380 U
Pesticides/PCBs (µg/kg)																						
4,4'-DDD	2 U	2 U	2 U	2.3 U	2.2 U	2 U	2 U	2 U	1.9 U	2.1 U	2 U	2 U	2.1 U	2 U	2 U	2 U	2 U	2.1 U	2 U	2.1 U	2.1 U	1.9 U
4,4'-DDE	13	0.94 U	14	1.1 U	1 U	0.94 U	0.94 U	0.96 U	0.91 U	1 U	0.96 U	0.95 U	1 U	2.2	0.95 U	0.96 U	9.7	1.6	2	1 U	1 U	0.93 U
4,4'-DDT	9.8	4.4 U	9	5.2 U	4.8 U	4.3 U	4.4 U	4.4 U	4.2 U	4.7 U	4.4 U	4.4 U	4.6 U	4.4 U	4.4 U	4.4 U	6.1	4.7 U	4.6 U	4.6 U	4.7 U	4.3 U
ALDRIN	3.6 U	3.4 U	3.6 U	4.1 U	3.8 U	3.4 U	3.4 U	3.5 U	3.3 U	3.7 U	3.5 U	3.5 U	3.6 U	3.5 U	3.5 U	3.5 U	3.5 U	3.7 U	3.6 U	3.6 U	3.7 U	3.4 U
ALPHA-BHC	0.79 U	0.76 U	0.78 U	0.9 U	0.84 U	0.76 U	0.76 U	0.77 U	0.73 U	0.82 U	0.77 U	0.77 U	0.81 U	0.78 U	0.77 U	0.78 U	0.77 U	0.82 U	0.8 U	0.8 U	0.82 U	0.75 U
ALPHA-CHLORDANE	1.3	0.8 U	0.82 U	0.95 U	0.88 U	0.8 U	0.8 U	0.81 U	0.77 U	0.86 U	0.81 U	0.8 U	0.84 U	3.1	0.81 U	0.81 U	1.7	0.86 U	0.84 U	0.84 U	0.86 U	0.79 U
AROCLOR-1016									18 U	21 U								21 U	20 U			
AROCLOR-1221									6.6 U	7.4 U								7.4 U	7.2 U			
AROCLOR-1232									15 U	16 U								16 U	16 U			
AROCLOR-1242									10 U	11 U								11 U	11 U			
AROCLOR-1248									7.7 U	8.6 U								8.6 U	8.4 U			
AROCLOR-1254									12 U	13 U								13 U	12 U			
AROCLOR-1260									16 U	18 U								18 U	18 U			
BETA-BHC	1.1 U	1.1 U	1.1 U	1.3 U	1.2 U	1.1 U	1.1 U	1.1 U	1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U
DELTA-BHC	1.4 U	1.3 U	1.4 U	1.6 U	1.5 U	1.3 U	1.3 U	1.4 U	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.3 U
DIELDRIN	0.98 U	0.94 U	0.97 U	1.1 U	1 U	0.94 U	0.94 U	0.96 U	0.91 U	1 U	0.96 U	0.95 U	1 U	0.96 U	0.95 U	0.96 U	1	1 U	0.99 U	1 U	1 U	0.93 U
ENDOSULFAN I	1 U	0.98 U	1 U	1.2 U	1.1 U	0.98 U	0.98 U	0.99 U	0.94 U	1 U	0.99 U	0.98 U	1 U	1 U	0.99 U	1 U	0.99 U	1 U	1 U	1 U	1.1 U	0.97 U
ENDOSULFAN II	2.2	1.2 U	1.3 U	1.5 U	1.4 U	1.2 U	1.2 U	1.2 U	1.2 U	1.3 U	1.2 U	1.2 U	1.3 U	1.3 U	4.5	1.2 U	1.2 U	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U
ENDOSULFAN SULFATE	4.1 U	4 U	4.1 U	4.7 U	4.4 U	4 U	4 U	4 U	3.8 U	4.3 U	4 U	4 U	4.2 U	4.1 U	4 U	4.1 U	4 U	4.3 U	4.2 U	4.2 U	4.3 U	3.9 U
ENDRIN	1.6 U	1.6 U	1.6 U	1.8 U	1.7 U	1.6 U	1.6 U	1.6 U	1.5 U	1.7 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U	1.7 U	1.5 U
ENDRIN ALDEHYDE	1.5 U	1.4 U	1.5 U	1.7 U	1.6 U	1.4 U	1.4 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.4 U
ENDRIN KETONE	7.5 U	7.3 U	7.5 U	8.6 U	8 U	7.2 U	7.3 U	7.4 U	7 U	7.8 U	7.4 U	7.3 U	7.7 U	7.4 U	7.3 U	7.4 U	7.4 U	7.8 U	7.6 U	7.7 U	7.9 U	7.2 U
GAMMA-BHC (LINDANE)	0.82 U	0.8 U	0.82 U	0.95 U	0.88 U	0.8 U	0.8 U	0.81 U	0.77 U	0.86 U	0.81 U	0.8 U	0.84 U	0.82 U	0.81 U	0.81 U	0.81 U	0.86 U	0.84 U	0.84 U	0.86 U	0.79 U
GAMMA-CHLORDANE	1.3	0.91 U	0.94 U	1.1 U	1 U	0.9 U	0.91 U	0.92 U	0.87 U	0.98 U	0.92 U	0.91 U	0.96 U	3	0.92 U	0.92 U	2.2	0.97 U	0.95 U	0.96 U	0.98 U	0.9 U
HEPTACHLOR	1.1	0.94 U	0.97 U	1.1 U	1 U	0.94 U	1.4	0.96 U	0.91 U	1 U	0.96 U	0.95 U	1 U	0.96 U	0.95 U	0.96 U	1.2	1 U	0.99 U	1 U	1 U	0.93 U
HEPTACHLOR EPOXIDE	1 U	0.98 U	1 U	1.2 U	1.1 U	0.98 U	0.98 U	0.99 U	0.94 U	1 U	0.99 U	0.98 U	1 U	1 U	0.99 U	1 U	0.99 U	1 U	1 U	1 U	1.1 U	0.97 U
METHOXYCHLOR	6.8 U	6.5 U	6.7 U	7.8 U	7.2 U	6.5 U	6.5 U	6.6 U	6.3 U	7 U	6.6 U	6.6 U	6.9 U	6.7 U	6.6 U	6.7 U	6.6 U	7 U	6.8 U	6.9 U	7.1 U	6.4 U
TOXAPHENE	75 U	73 U	75 U	86 U	80 U	72 U	73 U	74 U	70 U	78 U	74 U	73 U	77 U	74 U	73 U	74 U	74 U	78 U	76 U	77 U	79 U	72 U
Inorganics (mg/kg)																						
ALUMINUM	2720	2730	3880	2130	2650	4260	1670	2200	963	1090	2220	2060	2570	3350	938	2530	2040	2070	1360	2890	2680	2410
ANTIMONY	0.31 U	0.31 U	0.31 U	0.35 U	0.3 U	0.3 U	0.3 U	0.3 U	0.28 U	0.32 U	0.3 U	0.32 U	0.31 U	0.3 U	0.3 U	0.29 U	0.3 U	0.31 U	0.31 U	0.31 U	0.32 U	0.29 U
ARSENIC	3.2	4.8	2.1	0.93	3.9	1.3	1.2	1.7	3.3	3.4	0.5 U	1.9	1.8	2.2	0.5 U	2.6	1.3	1.2	0.86	0.52 U	3.2	2.5
BARIUM	9.6	13.7	13.7	5.4 U	10.3	8.6 U	4 U	5.6	3.1 U	3.4 U	12.2	10.6	6.9	12.9	5.7	3	9.6	13.6	8	1.9	2.7	3.6
BERYLLIUM	0.05 U	0.05 U	0.1 U	0.05 U	0.07 U	0.09 U	0.03 U	0.04 U	0.02 U	0.03 U	0.06 U	0.04 U	0.05 U	0.06 U	0.02 U	0.08 U	0.05 U	0.06 U	0.02 U	0.06 U	0.07 U	0.07 U
CADMIUM	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.07	0.06 U	0.06 U	0.06	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.1 U	0.08	0.06 U	0.06 U	0.05 U
CALCIUM	2980	564	868	2450	1370	656	666	3650	796	1160	12700	1680	946 J	1340	593	682 J	1110	860	686	214 J	822 J	518 J
CHROMIUM	3.2	3.1	3.9	2.8	4	4.4	2.1	3	3.5	6.5	3.3	2.9	3.4	4	2.2	3.3	3.8	3.7	2.4	3.1	3.4	3
COBALT	0.19 U	0.2 U	0.19 U	0.22 U	0.19 U	0.25	0.19 U	0.19 U	0.18 U	0.2 U	0.19 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18 U
COPPER	2.5	1.9 U	1.6	2	1.8 U	1.5	1.6	2.4	2.3	3	2.7	3	2.3 U	2.4	2.2 U	1 U	2.3	6.8	5	1.1 U	1.5 U	1.1 U
CYANIDE	1.1 UR	1.15 U	1.1 UR	1.1 UR	1.1 U	1.1 UR	1.1 UR	1.13 U	1.1 UR	1.1 UR	1.1 UR	1.16 U	1.1 UJ	1.1 UR	1.13 U	1.1 UJ	1.1 UR	1.17 U	1.13 U	1.1 UJ	1.1 UJ	1.2 UJ
IRON	869	491 J	770	462	831 J	884	293	396 J	266	342	294	246 J	254 J	291	252 J	486 J	294	616 J	321 J	330 J	323 J	282 J
LEAD	5.3	3.4	4.9	4.9	7.1	5.1	4.4	6.4	3.1	3.5	7.8	5.7	3.5 J	9.5	6.5	1.7 J	9.4	4.9	4.1	2.6 J	2.3 J	1.7 J
MAGNESIUM	99.9	74.4	144	76.6	55.2	95.7	73.7	72.3	51.3	66.3	49.1	113	75.1	165	43.6	59.8	84.1	107	65.9	27.6	62.1	47.2

location	OU2S051	OU2S052	OU2S060	OU2S061	OU2S062	OU2S070	OU2S071	OU2S072	OU2S080	OU2S080	OU2S081	OU2S082	OU2S083	OU2S090	OU2S092	OU2S099	OU2S101	OU2S102	OU2S102	OU2S104	OU2S105	OU2S108
nsample	**NTCSSS5100**	**NTCSSS5200**	**NTCSSS6000**	**NTCSSS6100**	**NTCSSS6200**	**NTCSSS7000**	**NTCSSS7100**	**NTCSSS7200**	**NTCSSS8000**	**NTCSSS8000-D**	**NTCSSS8100**	**NTCSSS8200**	**NTCSSS8300**	**NTCSSS9000**	**NTCSSS9200**	**NTCSSS9900**	**NTCSS10100**	**NTCSS10200**	**NTCSS10200-D**	**NTCSS10400**	**NTCSS10500**	**NTCSS10800**
sample_dat	19970629	19970630	19970628	19970629	19970630	19970628	19970629	19970630	19970628	19970628	19970629	19970630	19970701	19970628	19970630	19970701	99990101	19970630	19970630	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate										NTCSSS8000									NTCSS10200			
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	6.4	4.5	3.9	5.3	8	3.5	2.3	3.7	17.1	21.2	3.2	4.8	3	7.3	3	2.4	3.9	3.5	2.4	1.1	4.6	2.2
MERCURY	0.09 U	0.09 U	0.09 U	0.1 U	0.09 U	0.09 U	0.09 U	0.09 U	0.13	0.1 U	0.09 U	0.1 U	0.1 U	0.09 U	0.09 U	0.09 U	0.09	0.1	0.09 U	0.09 U	0.09 U	0.09 U
NICKEL	1.2	0.94	1.3	0.73	0.8	1.7	0.51	0.73	0.35	0.64	0.56	0.62	0.49	0.71	0.38	0.63	0.95	1	0.6	0.81	0.7	0.72
POTASSIUM	47.8	43.9	61.8	40	41.4	35	43.9	30.3	15.3	18.1	28.2	43.8	49.8	46.7	17.7	42.5	35.4	46.3	30.7	12.8	27.7	43.3
SELENIUM	0.42 U	0.43 U	0.42 U	0.48 U	0.41 U	0.41 U	0.41 U	0.41 U	0.39 U	0.44 U	0.41 U	0.44 U	0.5	0.43	0.41 U	0.4 U	0.41 U	0.42 U	0.48	0.43 U	0.44 U	0.4 U
SILVER	0.23 U	0.23 U	0.23 U	0.26 U	0.22 U	0.22 U	0.22 U	0.22 U	0.47	0.41	0.55	0.34	0.23 U	0.23 U	0.22 U	0.22 U	0.26	0.79	0.83	0.23 U	0.24 U	0.22 U
SODIUM	93.4 U	95.2 U	93.5 U	107 U	92.5 U	91 U	90.5 U	92.3 U	86.8 U	97.1 U	128	99.2 U	95.8 U	93.1 U	91.8 U	90 U	91.5 U	94.6 U	94.9 U	95.2 U	97.6 U	89.2 U
THALLIUM	0.45 U	0.46 U	0.45 U	0.52 U	0.45 U	0.44 U	0.44 U	0.45 U	0.42 U	0.47 U	0.44 U	0.48 U	0.46 U	0.45 U	0.44 U	0.44 U	0.44 U	0.46 U	0.46 U	0.46 U	0.47 U	0.43 U
VANADIUM	3	2.3	4.3	1.9	2.8	5.8	1.1	1.7	1.1 U	1.4 U	1.5	1.6	1.7	2.1	0.62	3.1	1.3	2.1	1.2	1.8	1.9	1.8
ZINC	5.6	3.2 U	3.7 U	6.2	4.5	8.3	4 U	6.5	6.7	6.5	8.7	5.1	3.2 U	9.7	6.9	1.4 U	9	6.4	6.6	0.98 U	2.6 U	1.3 U
Herbicides (µg/kg)																						
2,4,5-T	1.5 U	1.5 U	1.5 U	1.7 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.6 U	1.4 U
2,4,5-TP (SILVEX)	1.7 U	1.7 U	1.7 U	2 U	1.7 U	1.7 U	1.6 U	1.7 U	1.6 U	1.8 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U
2,4-D	7.9 U	8 U	7.9 U	9 U	7.8 U	7.7 U	7.6 U	7.8 U	7.4 U	8.2 U	7.7 U	8.4 U	8 U	7.9 U	7.8 U	7.7 U	7.7 U	8 U	8 U	8 U	8.4 U	7.7 U
2,4-DB	4.5 U	4.6 U	4.5 U	5.2 U	4.5 U	4.4 U	4.4 U	4.5 U	4.2 U	4.7 U	4.4 U	4.8 U	4.6 U	4.5 U	4.4 U	4.4 U	4.4 U	4.6 U	4.6 U	4.6 U	4.8 U	4.4 U
DALAPON	9 U	9.2 U	9 U	10 U	9 U	8.8 U	8.7 U	8.9 U	8.4 U	9.4 U	8.8 U	9.6 U	9.2 UR	9 U	8.9 U	8.8 UR	8.8 U	9.1 U	9.1 U	9.2 UR	9.6 UR	8.8 UR
DICAMBA	4.5 U	4.6 U	4.5 U	5.2 U	4.5 U	4.4 U	4.4 U	4.5 U	4.2 U	4.7 U	4.4 U	4.8 U	4.6 U	4.5 U	4.4 U	4.4 U	4.4 U	4.6 U	4.6 U	4.6 U	4.8 U	4.4 U
DICHLOROPROP	22 U	23 U	23 U	26 U	22 U	22 U	22 U	22 U	21 U	24 U	22 U	24 U	23 U	22 U	22 U	22 U	22 U	23 U	23 U	23 U	24 U	22 U
DINOSEB	4.5 U	4.6 U	4.5 U	5.2 U	4.5 U	4.4 U	4.4 U	4.5 U	4.2 U	4.7 U	4.4 U	4.8 U	4.6 U	4.5 U	4.4 U	4.4 U	4.4 U	4.6 U	4.6 U	4.6 U	4.8 U	4.4 U
MCPA	2200 U	2300 U	2300 U	2600 U	2200 U	2200 U	2200 U	2200 U	2100 U	2400 U	2200 U	2400 U	2300 UR	2200 U	2200 U	2200 UR	2200 U	2300 U	2300 U	2300 UR	2400 UR	2200 UR
MCPP	1100 U	1100 U	1100 U	1300 U	1100 U	1100 U	1100 U	1100 U	1000 U	1200 U	1100 U	1200 U	1200 UR	1100 U	1100 U	1100 UR	1100 U	1100 U	1100 U	1200 UR	1200 UR	1100 UR
PENTACHLOROPHENOL	2.2 U	2.3 U	2.3 U	2.6 U	2.2 U	4.5	2.2 U	2.2 U	2.1 U	2.4 U	2.2 U	2.4 U	2.3 U	2.2 U	2.2 U	2.2 U	2.2 U	2.3 U	2.3 U	2.3 U	2.4 U	2.2 U
Miscellaneous Parameters (mg/kg)																						
CATION EXCHANGE CAPACITY		1750						2250						2390	1040		2540			1640		
CYANIDE																						
DIESEL RANGE ORGANICS	31.6	9.28 J	9.4 U	9.7 U	43.6	10.5	17.7	22	9.3 U	9.4 U	8.74 J	12.9	25.9	8.5 J	9.4 U	9.5 U	9.1 U	24.3	52.5	38.1	9.3 U	9.6 U
GASOLINE RANGE ORGANICS	0.11 U	0.12 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.12 U	0.11 UJ	0.11 U	0.11 U	0.11 UJ	0.11 U	0.12 U	0.11 UJ	0.11 U	0.11 U	0.12 U
TOTAL ORGANIC CARBON		12400						14300						13700	28500		16100			7080 J		
Petroleum Hydrocarbons (mg/kg)																						
TOTAL PETROLEUM HYDROCARBONS																						
Radiological (pCi/g)																						
ACTINIUM-228																						
BISMUTH-214																						
CESIUM-137																						
GROSS ALPHA	1.56	0.825	1.73	1.41	1.75	2.8	1.14	1.19	0.901	0.922	2.16	1.17	1.22	2.13	0.67	1.36	0.17	1.14	0.905	1.6	0.937	0.903
GROSS BETA	0.501	0.669	0.83	0.84	0.852	1.53	0.599	0.804	0.36	0.483	0.549	0.512	0.516	1.13	0.196	0.701 J	0.089 U	0.573	0.479	0.64 J	0.339 J	0.586 J
LEAD-210																						
LEAD-212																						
LEAD-214																						
THALLIUM-208																						

location	OU2S109	OU2S110	OU2S111	OU2S112	OU2S113	OU2S114	OU2S115	OU2S116	OU2S117	OU2S118	OU2S119	OU2S120	OU2S121	OU2S122	OU2S123	OU2S124	OU2S124	OU2S125	OU2S126	OU2S127	OU2S128	OU2S129
nsample	**NTCSS10900**	**NTCSS11000**	**NTCSS11100**	**NTCSS11200**	**NTCSS11300**	**NTCSS11400**	**NTCSS11500**	**NTCSS11600**	**NTCSS11700**	**NTCSS11800**	**NTCSS11900**	**NTCSS12000**	**NTCSS12100**	**NTCSS12200**	**NTCSS12300**	**NTCSS12400**	**NTCSS12400-D**	**NTCSS12500**	**NTCSS12600**	**NTCSS12700**	**NTCSS12800**	**NTCSS12900**
sample_dat	19970701	19970628	99990101	19970630	19970701	19970701	19970701	19970701	19970701	19970701	19970701	19970628	19970629	19970630	19970701	19970701	19970701	19970701	19970701	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate																	NTCSS12400					
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (µg/kg)																						
1,1,1-TRICHLOROETHANE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
1,1,2,2-TETRACHLOROETHANE	6.2 U	5.6 U	5.6 UJ	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 UJ	5.5 UJ	5.7 U	5.9 U	56 U	5.4 U	5.6 UJ	5.6 UJ	5.6 UJ	6 UJ	6.2 U	5.5 UJ	5.6 UJ
1,1,2-TRICHLOROETHANE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
1,1-DICHLOROETHANE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
1,1-DICHLOROETHENE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
1,2-DICHLOROETHANE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
1,2-DICHLOROPROPANE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
2-BUTANONE	12 UR	11 U	11 U	11 U	11 U	2700 U	11 U	2800 U	1400 U	11 U	11 U	11 U	12 U	110 U	11 U	11 U	11 U	11 U	12 U	12 U	11 UJ	11 U
2-HEXANONE	12 U	11 U	11 U	11 U	11 U	2700 U	11 U	2800 U	1400 U	11 U	11 U	11 U	12 U	110 U	11 U	11 U	11 U	11 U	12 U	12 U	11 UJ	11 U
4-METHYL-2-PENTANONE	12 U	11 U	11 U	11 U	11 U	2700 U	11 U	2800 U	1400 U	11 U	11 U	11 U	12 U	110 U	11 U	11 UJ	11 UJ	11 U	12 UJ	12 U	11 UJ	11 U
ACETONE	12 UR	11 UR	11 UR	11 UR	11 UR	26700	11 UR	51400	28200	11 UR	130 J	11 U	12 UR	7620 J	11 UR	11 UR	11 UR	11 UR	12 UR	12 UR	11 UR	11 UR
BENZENE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
BROMODICHLOROMETHANE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
BROMOFORM	6.2 U	5.6 U	5.6 UJ	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 UJ	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
BROMOMETHANE	12 U	11 U	11 U	11 U	11 U	2700 U	11 U	2800 U	1400 U	11 U	11 U	11 U	12 U	110 U	11 U	11 U	11 U	11 U	12 U	12 U	11 UJ	11 U
CARBON DISULFIDE	6.2 UJ	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
CARBON TETRACHLORIDE	6.2 UJ	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
CHLOROBENZENE	6.2 U	5.6 U	5.6 UJ	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
CHLORODIBROMOMETHANE	6.2 U	5.6 U	5.6 UJ	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 UJ	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
CHLOROETHANE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
CHLOROFORM	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
CHLOROMETHANE	12 U	11 U	11 U	11 U	11 U	2700 U	11 U	2800 U	1400 U	11 U	11 U	11 U	12 U	110 U	11 U	11 U	11 U	11 U	12 U	12 U	11 UJ	11 U
CIS-1,2-DICHLOROETHENE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
CIS-1,3-DICHLOROPROPENE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
ETHYLBENZENE	6.2 U	5.6 U	5.6 UJ	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 UJ	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
METHYLENE CHLORIDE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	12.6 J	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
STYRENE	6.2 U	5.6 U	5.6 UJ	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 UJ	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
TETRACHLOROETHENE	6.2 U	5.6 U	5.6 UJ	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 UJ	5.6 UJ	5.6 U	6 UJ	6.2 U	5.5 UJ	5.6 U
TOLUENE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	9.6 J	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
TOTAL XYLENES	6.2 U	5.6 U	5.6 UJ	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 UJ	7.4 J	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
TRANS-1,2-DICHLOROETHENE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
TRANS-1,3-DICHLOROPROPENE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
TRICHLOROETHENE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
VINYL CHLORIDE	6.2 U	5.6 U	5.6 U	5.7 U	5.6 U	1400 U	5.4 U	1400 U	680 U	5.4 U	5.5 U	5.7 U	5.9 U	56 U	5.4 U	5.6 U	5.6 U	5.6 U	6 U	6.2 U	5.5 UJ	5.6 U
Semivolatile Organics (µg/kg)																						
1,2,4-TRICHLOROBENZENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
1,2-DICHLOROBENZENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
1,3-DICHLOROBENZENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
1,4-DICHLOROBENZENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2,4,5-TRICHLOROPHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2,4,6-TRICHLOROPHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2,4-DICHLOROPHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2,4-DIMETHYLPHENOL	960 UJ	960 U	920 U	940 U	930 U	920 U	940 U	920 U	900 U	900 U	910 U	940 U	960 U	930 UJ	900 UJ	920 U	1100 UJ	940 UJ	950 UJ	950 U	920 U	930 U
2,4-DINITROPHENOL	960 UJ	960 U	920 U	940 U	930 U	920 U	940 U	920 U	900 U	900 U	910 U	940 U	960 U	930 UJ	900 UJ	920 U	1100 UJ	940 UJ	950 UJ	950 U	920 U	930 U
2,4-DINITROTOLUENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2,6-DINITROTOLUENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2-CHLORONAPHTHALENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U

location	OU2S109	OU2S110	OU2S111	OU2S112	OU2S113	OU2S114	OU2S115	OU2S116	OU2S117	OU2S118	OU2S119	OU2S120	OU2S121	OU2S122	OU2S123	OU2S124	OU2S124	OU2S125	OU2S126	OU2S127	OU2S128	OU2S129
nsample	**NTCSS10900**	**NTCSS11000**	**NTCSS11100**	**NTCSS11200**	**NTCSS11300**	**NTCSS11400**	**NTCSS11500**	**NTCSS11600**	**NTCSS11700**	**NTCSS11800**	**NTCSS11900**	**NTCSS12000**	**NTCSS12100**	**NTCSS12200**	**NTCSS12300**	**NTCSS12400**	**NTCSS12400-D**	**NTCSS12500**	**NTCSS12600**	**NTCSS12700**	**NTCSS12800**	**NTCSS12900**
sample_dat	19970701	19970628	99990101	19970630	19970701	19970701	19970701	19970701	19970701	19970701	19970701	19970628	19970629	19970630	19970701	19970701	19970701	19970701	19970701	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate																	NTCSS12400					
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2-METHYLNAPHTHALENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2-METHYLPHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2-NITROANILINE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
2-NITROPHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
3&4-METHYLPHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
3,3'-DICHLOROBENZIDINE	960 UJ	960 UJ	920 U	940 U	930 UJ	920 U	940 UJ	920 U	900 U	900 U	910 U	940 UJ	960 U	930 UJ	900 UJ	920 UJ	1100 UJ	940 UJ	950 UJ	950 UJ	920 UJ	930 UJ
3-NITROANILINE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
4,6-DINITRO-2-METHYLPHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
4-BROMOPHENYL PHENYL ETHER	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
4-CHLORO-3-METHYLPHENOL	960 UJ	960 U	920 U	940 U	930 U	920 U	940 U	920 U	900 U	900 U	910 U	940 U	960 U	930 UJ	900 UJ	920 U	1100 UJ	940 UJ	950 UJ	950 U	920 U	930 U
4-CHLOROANILINE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
4-CHLOROPHENYL PHENYL ETHER	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
4-NITROANILINE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
4-NITROPHENOL	960 UJ	960 U	920 U	940 U	930 U	920 U	940 U	920 U	900 U	900 U	910 U	940 U	960 U	930 UJ	900 UJ	920 U	1100 UJ	940 UJ	950 UJ	950 U	920 U	930 U
ACENAPHTHENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
ACENAPHTHYLENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
ANTHRACENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
BAP EQUIVALENT-HALFND	96 U	96 U	92 U	230	93 U	92 U	210	92 U	90 U	90 U	91 U	94 U	96 U	93 U	90 U	92 U	110 U	94 U	200	95 U	92 U	93 U
BENZO(A)ANTHRACENE	390 UJ	380 UJ	370 U	380 U	370 UJ	370 U	380 UJ	370 U	360 U	360 U	360 U	380 UJ	380 U	370 UJ	360 UJ	370 UJ	450 UJ	380 UJ	380 UJ	380 UJ	370 UJ	370 UJ
BENZO(A)PYRENE	96 UJ	96 U	92 U	125	93 UJ	92 UJ	105 J	92 UJ	90 U	90 U	91 U	94 U	96 U	93 UJ	90 U	92 U	110 U	94 U	48 J	95 U	92 UJ	93 U
BENZO(B)FLUORANTHENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 UJ	370 U	370 UJ
BENZO(G,H,I)PERYLENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 UJ	370 U	370 UJ
BENZO(K)FLUORANTHENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 UJ	370 U	370 UJ
BIS(2-CHLOROETHOXY)METHANE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
BIS(2-CHLOROETHYL)ETHER	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
BIS(2-CHLOROISOPROPYL)ETHER	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 UJ	370 U	370 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	390 UJ	380 UJ	370 U	380 U	370 UJ	370 U	380 UJ	370 U	360 U	360 U	360 U	380 UJ	380 U	370 UJ	360 UJ	370 UJ	450 UJ	380 UJ	380 UJ	380 U	370 UJ	370 U
BUTYL BENZYL PHTHALATE	390 UJ	380 UJ	370 U	380 U	370 UJ	370 U	380 UJ	370 U	360 U	360 U	360 U	380 UJ	380 U	370 UJ	360 UJ	370 UJ	450 UJ	380 UJ	380 UJ	380 UJ	370 UJ	370 UJ
CARBAZOLE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
CHRYSENE	390 UJ	380 UJ	370 U	380 U	370 UJ	370 U	380 UJ	370 U	360 U	360 U	360 U	380 UJ	380 U	370 UJ	360 UJ	370 UJ	450 UJ	380 UJ	380 UJ	380 UJ	370 UJ	370 UJ
DI-N-BUTYL PHTHALATE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
DI-N-OCTYL PHTHALATE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 UJ	370 U	370 UJ
DIBENZO(A,H)ANTHRACENE	96 UJ	96 U	92 U	94 U	93 UJ	92 UJ	94 UJ	92 UJ	90 U	90 U	91 U	94 U	96 U	93 UJ	90 U	92 U	110 U	94 U	190 UJ	95 U	92 UJ	93 U
DIBENZOFURAN	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
DIETHYL PHTHALATE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
DIMETHYL PHTHALATE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
FLUORANTHENE	390 UJ	380 U	370 U	427	370 UJ	370 UJ	509 J	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 UJ	370 U	370 UJ
FLUORENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
HEXACHLOROBENZENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
HEXACHLOROBUTADIENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
HEXACHLOROCYCLOPENTADIENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
HEXACHLOROETHANE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
INDENO(1,2,3-CD)PYRENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 UJ	370 U	370 UJ
ISOPHORONE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
N-NITROSO-DI-N-PROPYLAMINE	19 UJ	19 U	18 U	19 U	19 UJ	18 UJ	19 UJ	18 UJ	18 U	18 U	18 U	19 U	19 U	19 UJ	18 U	18 U	22 U	19 U	38 U	19 U	18 U	19 U
N-NITROSODIPHENYLAMINE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
NAPHTHALENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U

location	OU2S109	OU2S110	OU2S111	OU2S112	OU2S113	OU2S114	OU2S115	OU2S116	OU2S117	OU2S118	OU2S119	OU2S120	OU2S121	OU2S122	OU2S123	OU2S124	OU2S124	OU2S125	OU2S126	OU2S127	OU2S128	OU2S129
nsample	**NTCSS10900**	**NTCSS11000**	**NTCSS11100**	**NTCSS11200**	**NTCSS11300**	**NTCSS11400**	**NTCSS11500**	**NTCSS11600**	**NTCSS11700**	**NTCSS11800**	**NTCSS11900**	**NTCSS12000**	**NTCSS12100**	**NTCSS12200**	**NTCSS12300**	**NTCSS12400**	**NTCSS12400-D**	**NTCSS12500**	**NTCSS12600**	**NTCSS12700**	**NTCSS12800**	**NTCSS12900**
sample_dat	19970701	19970628	99990101	19970630	19970701	19970701	19970701	19970701	19970701	19970701	19970701	19970628	19970629	19970630	19970701	19970701	19970701	19970701	19970701	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate																	NTCSS12400					
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
PHENANTHRENE	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
PHENOL	390 UJ	380 U	370 U	380 U	370 U	370 U	380 U	370 U	360 U	360 U	360 U	380 U	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 U	370 U	370 U
PYRENE	390 UJ	380 UJ	370 U	380 U	370 UJ	370 UJ	380 UJ	370 U	360 U	360 U	360 U	380 UJ	380 U	370 UJ	360 UJ	370 U	450 UJ	380 UJ	380 UJ	380 UJ	370 U	370 UJ
Pesticides/PCBs (µg/kg)																						
4,4'-DDD	2.2 U	2 U	2 U	2 U	2 U	1.9 U	2 U	2 U	2 U	1.9 U	2 U	2 U	2.1 U	2.2 U	1.9 U	2 U	2 U	2 U	2.2 U	2.2 U	1.9 U	2 U
4,4'-DDE	1.1 U	0.95 U	4	0.99 U	0.96 U	0.94 U	1.8 J	0.95 U	0.94 U	0.93 U	0.94 U	0.98 U	1 U	3.4	1.3 J	0.96 U	0.96 U	0.96 U	1 U	1 U	0.94 U	4.5 J
4,4'-DDT	5 U	4.4 U	4.5 U	4.6 U	4.4 U	4.3 U	4.4 U	4.4 U	4.3 U	4.3 U	4.3 U	4.5 U	4.7 U	4.9 U	4.3 U	4.4 U	4.4 U	4.4 U	4.8 U	4.9 U	9.1 J	4.4 U
ALDRIN	4 U	3.5 U	3.5 U	3.6 U	3.5 U	3.4 U	3.5 U	3.5 U	3.4 U	3.4 U	3.4 U	3.6 U	3.7 U	3.9 U	3.4 U	3.5 U	3.5 U	3.5 U	3.8 U	3.9 U	3.4 U	3.5 U
ALPHA-BHC	0.87 U	0.77 U	0.78 U	0.8 U	0.78 U	0.76 U	0.77 U	0.77 U	0.76 U	0.75 U	0.76 U	0.79 U	0.82 U	0.86 U	0.75 U	0.78 U	0.77 U	0.78 U	0.84 U	0.85 U	0.76 U	0.78 U
ALPHA-CHLORDANE	0.92 U	0.8 U	0.82 U	0.84 U	0.81 U	0.79 U	0.81 U	0.81 U	0.8 U	0.79 U	0.8 U	0.82 U	0.86 U	0.9 U	0.79 U	0.82 U	0.81 U	0.81 U	0.88 U	0.9 U	0.79 U	0.82 U
AROCLOR-1016																20 U	20 U					
AROCLOR-1221																7 U	7 U					
AROCLOR-1232																16 U	15 U					
AROCLOR-1242																11 U	11 U					
AROCLOR-1248																8.2 U	8.1 U					
AROCLOR-1254																12 U	12 U					
AROCLOR-1260																17 U	17 U					
BETA-BHC	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U
DELTA-BHC	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.3 U	1.4 U	1.4 U	1.3 U	1.3 U	1.3 U	1.4 U	1.4 U	1.5 U	1.3 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.3 U	1.4 U
DIELDRIN	1.1 U	0.95 U	0.97 U	0.99 U	0.96 U	0.94 U	0.95 U	0.95 U	0.94 U	0.93 U	0.94 U	0.98 U	1 U	1.1 U	0.93 U	0.96 U	0.96 U	0.96 U	1 U	1 U	0.94 U	0.96 U
ENDOSULFAN I	1.1 U	0.99 U	1 U	1 U	1 U	0.97 U	0.99 U	0.99 U	0.98 U	0.97 U	0.98 U	1 U	1 U	1.1 U	0.97 U	1 U	0.99 U	1 U	1.1 U	1.1 U	0.97 U	1 U
ENDOSULFAN II	1.4 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.4 U	1.2 U	1.3 U	1.2 U	1.2 U	1.4 U	1.4 U	1.2 U	1.3 U
ENDOSULFAN SULFATE	4.6 U	4 U	4.1 U	4.2 U	4.1 U	4 U	4 U	4 U	4 U	3.9 U	4 U	4.1 U	4.3 U	4.5 U	3.9 U	4.1 U	4 U	4.1 U	4.4 U	4.5 U	4 U	4.1 U
ENDRIN	1.8 U	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	1.6 U	1.6 U	1.6 U	1.5 U	1.6 U	1.6 U	1.7 U	1.8 U	1.5 U	1.6 U	1.6 U	1.6 U	1.7 U	1.8 U	1.6 U	1.6 U
ENDRIN ALDEHYDE	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.6 U	1.6 U	1.4 U	1.5 U	1.5 U	1.5 U	1.6 U	1.6 U	1.4 U	1.5 U
ENDRIN KETONE	8.3 U	7.3 U	7.4 U	7.6 U	7.4 U	7.2 U	7.3 U	7.3 U	7.2 U	7.2 U	7.2 U	7.5 U	7.8 U	8.2 U	7.2 U	7.4 U	7.4 U	7.4 U	8 U	8.1 U	7.2 U	7.4 U
GAMMA-BHC (LINDANE)	0.92 U	0.8 U	0.82 U	0.84 U	0.81 U	0.79 U	0.81 U	0.81 U	0.8 U	0.79 U	0.8 U	0.82 U	0.86 U	0.9 U	0.79 U	0.82 U	0.81 U	0.81 U	0.88 U	0.9 U	0.79 U	0.82 U
GAMMA-CHLORDANE	1 U	0.92 U	0.93 U	0.95 U	0.92 U	0.9 U	1.9 J	0.92 U	0.9 U	0.9 U	0.9 U	0.94 U	0.98 U	1 U	0.9 U	0.93 U	0.92 U	0.92 U	1 U	1 U	0.9 U	0.93 U
HEPTACHLOR	1.1 U	0.95 U	0.97 U	0.99 U	0.96 U	0.94 U	0.95 U	0.95 U	0.94 U	0.93 U	0.94 U	0.98 U	1 U	1.2	0.93 U	0.96 U	0.96 U	0.96 U	1 U	1 U	0.94 U	0.96 U
HEPTACHLOR EPOXIDE	1.1 U	0.99 U	1 U	1 U	1 U	0.97 U	0.99 U	0.99 U	0.98 U	0.97 U	0.98 U	1 U	1 U	1.1 U	0.97 U	1 U	0.99 U	1 U	1.1 U	1.1 U	0.97 U	1 U
METHOXYCHLOR	7.5 U	6.6 U	6.7 U	6.8 U	6.7 U	6.5 U	6.6 U	6.6 U	6.5 U	6.4 U	6.5 U	6.8 U	7 U	7.4 U	6.4 U	6.7 U	6.6 U	6.7 U	7.2 U	7.3 U	6.5 U	6.7 U
TOXAPHENE	83 U	73 U	74 U	76 U	74 U	72 U	73 U	73 U	72 U	72 U	72 U	75 U	78 U	82 U	72 U	74 U	74 U	74 U	80 U	81 U	72 U	74 U
Inorganics (mg/kg)																						
ALUMINUM	980	4980	3050	1630	1780	2900	2410	1690	1120	1340	1540	3340	1360	928	1850	3400	3020	2740	1110	741	524	821
ANTIMONY	0.34 U	0.3 U	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.3 U	0.3 U	0.29 U	0.3 U	0.31 U	0.32 U	0.3 U	0.29 U	0.3 U	0.3 U	0.3 U	0.32 U	0.33 U	0.3 U	0.3 U
ARSENIC	0.56 U	3.2	1.5	2.8	0.51 U	1.2	3.8	1.6	0.49 U	0.48 U	0.86	1.1	2.1	2.5	1.6	2.4	2	1.8	2.5	1.5	1.5	0.76
BARIUM	3	21.5	17.8	5.5	3	6.2	7.5	3.8	2.7	3.3	3.2	4 U	3.8 U	2.4	6.4	6.2	4.5	7.6	3.8	2.8	3.5	3.6
BERYLLIUM	0.04 U	0.07 U	0.09 U	0.02 U	0.04 U	0.09 U	0.07 U	0.04 U	0.06 U	0.04 U	0.05 U	0.16 U	0.02 U	0.01 U	0.04 U	0.1 U	0.09 U	0.11 U	0.07 U	0.05 U	0.03 U	0.03 U
CADMIUM	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.05 U	0.05 U	0.06 U	0.06 U	0.05 U	0.06 U	0.06 U	0.06 U	0.09	0.05 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
CALCIUM	718 J	1850	760	858	372 J	3140 J	4440 J	980 J	3110 J	2490 J	852 J	879	1470	841	792 J	1430 J	1560 J	4130 J	16000 J	1040 J	8250 J	939 J
CHROMIUM	3.5	6.4	5.5	2.6	3.3	3.6	3.3	2.5	1.6	2.2	2.4	3.9	2.5	1.5	2.9	4.3	3.9	3.6	1.9	1.2 U	1.2 U	1.2 U
COBALT	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.18 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U	0.2 U	0.21 U	0.19 U	0.19 U
COPPER	1.6 U	1.9	3.5	2.7	1.1 U	1.9 U	2 U	1.2 U	1.5 U	1.3 U	1.4 U	1.3	2	3	2 U	1.5 U	1.2 U	2.2 U	1.9 U	2.5 U	1.6 U	1.7 U
CYANIDE	1.2 UJ	1.2 UR	1.1 UR	1.13 U	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UR	1.2 UR	1.12 U	1.1 UJ	1.1 UJ	1.4 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ
IRON	313 J	398	492	132 J	167 J	361 J	277 J	164 J	201 J	265 J	322 J	1040	165	114 J	187 J	383 J	291 J	344 J	306 J	252 J	137 J	176 J
LEAD	2.5 J	5.2	7	6.6	2.8 J	4.5 J	6.5 J	2.8 J	4.6 J	1.8 J	1.8 J	5.1	3.7	3.3	3.8 J	5.4 J	4.7 J	6 J	3.8 J	3.4 J	2.2 J	3 J
MAGNESIUM	59.8	188	81	63.9	25.8 U	87.7	87.6	42.3	46.8	60.7	69.7	89	116	48	72.6	71.5	61	95.5	332	75.6	97.9	70.6

location	OU2S109	OU2S110	OU2S111	OU2S112	OU2S113	OU2S114	OU2S115	OU2S116	OU2S117	OU2S118	OU2S119	OU2S120	OU2S121	OU2S122	OU2S123	OU2S124	OU2S124	OU2S125	OU2S126	OU2S127	OU2S128	OU2S129
nsample	**NTCSS10900**	**NTCSS11000**	**NTCSS11100**	**NTCSS11200**	**NTCSS11300**	**NTCSS11400**	**NTCSS11500**	**NTCSS11600**	**NTCSS11700**	**NTCSS11800**	**NTCSS11900**	**NTCSS12000**	**NTCSS12100**	**NTCSS12200**	**NTCSS12300**	**NTCSS12400**	**NTCSS12400-D**	**NTCSS12500**	**NTCSS12600**	**NTCSS12700**	**NTCSS12800**	**NTCSS12900**
sample_dat	19970701	19970628	99990101	19970630	19970701	19970701	19970701	19970701	19970701	19970701	19970701	19970628	19970629	19970630	19970701	19970701	19970701	19970701	19970701	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate																	NTCSS12400					
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	3.5	7.1	3.3	4	0.6	2.4	5.1	2.7	4.2	1.7	3	2.7	14.3	2.7	1.6	2.7	3.2	3.9	10.2	2.8	3.9	3.3
MERCURY	0.1 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.1 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.1 U	0.1 U	0.09 U	0.09 U
NICKEL	0.25 U	0.93	0.96	0.34	0.23 U	0.63	0.61	0.47	0.34	0.41	0.44	0.93	0.36	0.22 U	0.31	0.63	0.67	0.73	0.54	0.25 U	0.22 U	0.22 U
POTASSIUM	25.3	66.9	41.3	43	11.1 U	30.5	35.6	29.4	17.7	18.9	28.2	29.1	33.4	27.7	37.9	47.2	34.6	28.6	40.7	25.2	40.7	29.5
SELENIUM	0.53	0.41 U	0.41 U	0.42 U	0.42 U	0.47	0.45	0.41 U	0.4 U	0.4 U	0.41 U	0.42 U	0.44 U	0.41 U	0.4 U	0.41 U	0.41 U	0.42 U	0.45	0.45 U	0.41 U	0.41 U
SILVER	0.25 U	0.22 U	0.22 U	0.37	0.23 U	0.24	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.24 U	0.24	0.22 U	0.22 U	0.22 U	0.23 U	0.24 U	0.25 U	0.22 U	0.22 U
SODIUM	104 U	91.7 U	92.1 U	94.2 U	92.8 U	89.7 U	89.6 U	92.1 U	90.3 U	88.8 U	90.9 U	93.8 U	97.2 U	92.3 U	89.6 U	91.9 U	92.2 U	93 U	99.2 U	101 U	90.7 U	92.5 U
THALLIUM	0.5 U	0.44 U	0.45 U	0.46 U	0.45 U	0.43 U	0.43 U	0.45 U	0.44 U	0.43 U	0.44 U	0.45 U	0.47 U	0.45 U	0.43 U	0.45 U	0.45 U	0.45 U	0.48 U	0.49 U	0.44 U	0.45 U
VANADIUM	0.87	2.8	2.5	0.59	1.2	1.8	2	1.2	0.93	1.8	1.5	3.3	0.68	0.18 U	1	2.2	2	3.3	1.6	0.61	0.5	0.51
ZINC	2.5 U	4.2 U	3.4 U	3.3 U	0.67 U	2.5 U	3.6 U	2.7 U	1.8 U	1.2 U	2.2 U	6.8	5.4	8.2	2.8 U	1.9 U	1.7 U	4.5	4.1 U	2.7 U	1.6 U	2.1 U
Herbicides (µg/kg)																						
2,4,5-T	1.6 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.5 U	1.4 U	1.4 U	1.5 U	1.6 U	1.6 U	1.4 U	1.4 U
2,4,5-TP (SILVEX)	1.9 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.8 U	1.9 U	1.7 U	1.7 U
2,4-D	8.8 U	7.7 U	7.8 U	7.9 U	8 U	7.7 U	7.7 U	7.7 U	7.7 U	7.4 U	7.7 U	7.9 U	8.2 U	7.8 U	8 U	7.7 U	7.8 U	8 U	8.4 U	8.8 U	7.7 U	7.7 U
2,4-DB	5 U	4.4 U	4.5 U	4.5 U	4.6 U	4.4 U	4.4 U	4.4 U	4.4 U	4.2 U	4.4 U	4.5 U	4.7 U	4.5 U	4.6 U	4.4 U	4.5 U	4.6 U	4.8 U	5 U	4.4 U	4.4 U
DALAPON	10 UR	8.8 U	8.9 U	9.1 U	9.2 UR	8.8 UR	8.8 UR	8.8 UR	8.8 UR	8.4 UR	8.8 UR	9 U	9.4 U	8.9 U	9.2 UR	8.8 UR	8.9 UR	9.2 UR	9.6 UR	10 UR	8.8 UR	8.8 UR
DICAMBA	5 U	4.4 U	4.5 U	4.5 U	4.6 U	4.4 U	4.4 U	4.4 U	4.4 U	4.2 U	4.4 U	4.5 U	4.7 U	4.5 U	4.6 U	4.4 U	4.5 U	4.6 U	4.8 U	5 U	4.4 U	4.4 U
DICHLOROPROP	25 U	22 U	22 U	23 U	23 U	22 U	22 U	22 U	22 U	21 U	22 U	23 U	23 U	22 U	23 U	22 U	22 U	23 U	24 U	25 U	22 U	22 U
DINOSEB	5 U	4.4 U	4.5 U	4.5 U	4.6 U	4.4 U	4.4 U	4.4 U	4.4 U	4.2 U	4.4 U	4.5 U	4.7 U	4.5 U	4.6 U	4.4 U	4.5 U	4.6 U	4.8 U	5 U	4.4 U	4.4 U
MCPA	2500 UR	2200 U	2200 U	2300 U	2300 UR	2200 UR	2200 UR	2200 UR	2200 UR	2100 UR	2200 UR	2300 U	2300 U	2200 U	2300 UR	2200 UR	2200 UR	2300 UR	2400 UR	2500 UR	2200 UR	2200 UR
MCPP	1200 UR	1100 U	1100 U	1100 U	1200 UR	1100 UR	1100 UR	1100 UR	1100 UR	1000 UR	1100 UR	1100 U	1200 U	1100 U	1200 UR	1100 UR	1100 UR	1200 UR	1200 UR	1200 UR	1100 UR	1100 UR
PENTACHLOROPHENOL	2.5 U	2.2 U	2.2 U	2.3 U	2.3 U	2.2 U	2.2 U	2.2 U	2.2 U	2.1 U	2.2 U	2.3 U	2.3 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.4 U	2.5 U	2.2 U	2.2 U
Miscellaneous Parameters (mg/kg)																						
CATION EXCHANGE CAPACITY											1550		2230		1810			2080		2010		
CYANIDE																						
DIESEL RANGE ORGANICS	9.6 U	9.6 U	10.1	9.4 U	9.3 U	9.2 U	9.4 U	9.2 U	9 U	9 U	9.1 U	23	9.6 U	9.3 U	9 U	9.2 U	11 U	10.5	10.4	9.5 U	9.2 U	9.3 U
GASOLINE RANGE ORGANICS	0.12 U	0.12 U	0.11 U	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.12 U	0.11 U	0.11 U	0.11 U	0.14 U	0.11 U	0.11 U	0.11 U	0.11 UJ	0.11 UJ
TOTAL ORGANIC CARBON											21600		30000		8200			12000		16700		
Petroleum Hydrocarbons (mg/kg)																						
TOTAL PETROLEUM HYDROCARBONS																						
Radiological (pCi/g)																						
ACTINIUM-228																						
BISMUTH-214																						
CESIUM-137																						
GROSS ALPHA	0.584	2.65	2.8	1.19	0.808	0.912	1.61	0.632	0.641	1.16	0.556	1.13	0.687	0.579	0.7	1	1.35	1.69	0.554	0.664	0.548	0.639
GROSS BETA	0.335 J	1.31	1.31	0.394	0.482	0.794	0.796	0.429	0.364	0.631	0.469	0.819	0.315	0.265	0.403	0.38	0.698	1.22	-0.562 U	0.599	0.339	0.558
LEAD-210																						
LEAD-212																						
LEAD-214																						
THALLIUM-208																						

location	OU2S130	OU2S131	OU2S132	OU2S133	OU2S134	OU2S135	OU2S137	OU2S137	OU2S138	OU2S139	OU2S140	OU2S151	OU2S151	OU2S152	OU2S153	OU2S154	OU2S155	OU2S156	OU2S157	OU2S158	OU2S159	OU2S160
nsample	**NTCSS13000**	**NTCSS13100**	**NTCSS13200**	**NTCSS13300**	**NTCSS13400**	**NTCSS13500**	**NTCSS13700**	**NTCSS13700-D**	**NTCSS13800**	**NTCSS13900**	**NTCSS14000**	**NTCSS15100**	**NTCSS15100-D**	**NTCSS15200**	**NTCSS15300**	**NTCSS15400**	**NTCSS15500**	**NTCSS15600**	**NTCSS15700**	**NTCSS15800**	**NTCSS15900**	**NTCSS16000**
sample_dat	19970628	19970629	19970630	19970701	19970630	19970630	19970630	19970630	19970630	19970630	19970628	19970701	19970701	19970701	19970701	19970701	19970630	19970630	19970701	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate								NTCSS13700					NTCSS15100									
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (µg/kg)																						
1,1,1-TRICHLOROETHANE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 UJ	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 UJ
1,1,2,2-TETRACHLOROETHANE	6 U	5.6 UJ	5.8 UJ	5.8 U	5.6 U	5.6 U	5.4 UJ	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 UJ	5.8 U	5.6 UJ	5.6 U	5.8 UJ	5.6 U	5.6 U	5.5 U	5.4 UJ	5.5 U
1,1,2-TRICHLOROETHANE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
1,1-DICHLOROETHANE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
1,1-DICHLOROETHENE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
1,2-DICHLOROETHANE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 UJ	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 UJ
1,2-DICHLOROPROPANE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
2-BUTANONE	12 U	11 U	12 U	12 U	11 U	11 UR	11 UR	11 UR	11 UR	11 UR	11 U	11 U	12 U	12 UR	11 U	11 U	12 U	11 U	11 U	11 U	11 UR	11 U
2-HEXANONE	12 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U
4-METHYL-2-PENTANONE	12 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	12 UJ	12 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U
ACETONE	12 U	11 UR	12 UR	12 UJ	11 UR	11 UR	11 UR	11 UR	11 UR	11 UR	11 UR	11 UR	12 UR	12 UR	11 UR	11 UR	12 UR	11 UR	11 UR	11 UR	11 UR	11 UR
BENZENE	6 U	5.6 U	5.8 U	5.8 UR	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
BROMODICHLOROMETHANE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 UJ	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 UJ
BROMOFORM	6 U	5.6 UJ	5.8 UJ	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 UJ	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
BROMOMETHANE	12 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U
CARBON DISULFIDE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 UJ	6 U	5.8 UJ	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 UJ	5.5 UJ
CARBON TETRACHLORIDE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 UJ	6 U	5.8 UJ	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 UJ	5.5 UJ
CHLOROBENZENE	6 U	5.6 UJ	5.8 UJ	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
CHLORODIBROMOMETHANE	6 U	5.6 UJ	5.8 UJ	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 UJ	6 U	5.8 U	5.6 UJ	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 UJ
CHLOROETHANE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
CHLOROFORM	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
CHLOROMETHANE	12 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U
CIS-1,2-DICHLOROETHENE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
CIS-1,3-DICHLOROPROPENE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
ETHYLBENZENE	6 U	5.6 UJ	5.8 UJ	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 UJ	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
METHYLENE CHLORIDE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
STYRENE	6 U	5.6 UJ	5.8 UJ	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 UJ	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
TETRACHLOROETHENE	6 U	5.6 UJ	5.8 UJ	5.8 UJ	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 UJ	5.8 U	5.6 UJ	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
TOLUENE	5.8 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
TOTAL XYLENES	6 U	5.6 UJ	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 UJ	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
TRANS-1,2-DICHLOROETHENE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
TRANS-1,3-DICHLOROPROPENE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
TRICHLOROETHENE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
VINYL CHLORIDE	6 U	5.6 U	5.8 U	5.8 U	5.6 U	5.6 U	5.4 U	5.5 U	5.6 U	5.5 U	5.4 U	5.6 U	6 U	5.8 U	5.6 U	5.6 U	5.8 U	5.6 U	5.6 U	5.5 U	5.4 U	5.5 U
Semivolatile Organics (µg/kg)																						
1,2,4-TRICHLOROBENZENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
1,2-DICHLOROBENZENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
1,3-DICHLOROBENZENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
1,4-DICHLOROBENZENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2,4,5-TRICHLOROPHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2,4,6-TRICHLOROPHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2,4-DICHLOROPHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2,4-DIMETHYLPHENOL	920 U	970 U	970 UJ	920 U	940 UJ	930 U	910 U	910 UJ	920 U	920 U	900 U	930 U	920 U	1100 UJ	900 U	950 U	1200 U	940 U	930 U	920 U	920 U	950 U
2,4-DINITROPHENOL	920 U	970 U	970 UJ	920 U	940 UJ	930 U	910 U	910 UJ	920 U	920 U	900 U	930 U	920 U	1100 UJ	900 U	950 U	1200 U	940 U	930 U	920 U	920 U	950 U
2,4-DINITROTOLUENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2,6-DINITROTOLUENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2-CHLORONAPHTHALENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U

location	OU2S130	OU2S131	OU2S132	OU2S133	OU2S134	OU2S135	OU2S137	OU2S137	OU2S138	OU2S139	OU2S140	OU2S151	OU2S151	OU2S152	OU2S153	OU2S154	OU2S155	OU2S156	OU2S157	OU2S158	OU2S159	OU2S160
nsample	**NTCSS13000**	**NTCSS13100**	**NTCSS13200**	**NTCSS13300**	**NTCSS13400**	**NTCSS13500**	**NTCSS13700**	**NTCSS13700-D**	**NTCSS13800**	**NTCSS13900**	**NTCSS14000**	**NTCSS15100**	**NTCSS15100-D**	**NTCSS15200**	**NTCSS15300**	**NTCSS15400**	**NTCSS15500**	**NTCSS15600**	**NTCSS15700**	**NTCSS15800**	**NTCSS15900**	**NTCSS16000**
sample_dat	19970628	19970629	19970630	19970701	19970630	19970630	19970630	19970630	19970630	19970630	19970628	19970701	19970701	19970701	19970701	19970701	19970630	19970630	19970701	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate								NTCSS13700					NTCSS15100									
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2-METHYLNAPHTHALENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2-METHYLPHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2-NITROANILINE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
2-NITROPHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
3&4-METHYLPHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
3,3'-DICHLOROBENZIDINE	920 UJ	970 U	970 UJ	920 UJ	940 UJ	930 UJ	910 UJ	910 UJ	920 UJ	920 UJ	900 UJ	930 U	920 U	1100 UJ	900 U	950 UJ	1200 UJ	940 UJ	930 UJ	920 U	920 U	950 U
3-NITROANILINE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
4,6-DINITRO-2-METHYLPHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 UJ	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
4-BROMOPHENYL PHENYL ETHER	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 UJ	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
4-CHLORO-3-METHYLPHENOL	920 U	970 U	970 UJ	920 U	940 UJ	930 U	910 U	910 UJ	920 U	920 U	900 U	930 U	920 U	1100 UJ	900 U	950 U	1200 U	940 U	930 U	920 U	920 U	950 U
4-CHLOROANILINE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
4-CHLOROPHENYL PHENYL ETHER	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
4-NITROANILINE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
4-NITROPHENOL	920 U	970 U	970 UJ	920 U	940 UJ	930 U	910 U	910 UJ	920 U	920 U	900 U	930 U	920 U	1100 UJ	900 U	950 U	1200 U	940 U	930 U	920 U	920 U	950 U
ACENAPHTHENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
ACENAPHTHYLENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
ANTHRACENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 UJ	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
BAP EQUIVALENT-HALFND	92 U	97 U	97 U	92 U	94 U	93 U	91 U	91 U	92 U	92 U	90 U	93 U	92 U	110 U	90 U	95 U	120 U	94 U	93 U	92 U	92 U	95 U
BENZO(A)ANTHRACENE	370 UJ	390 U	390 UJ	370 UJ	380 UJ	370 UJ	360 UJ	360 UJ	370 UJ	370 UJ	360 UJ	370 U	370 U	440 UJ	360 U	380 UJ	470 UJ	380 UJ	370 UJ	370 U	370 U	380 U
BENZO(A)PYRENE	92 U	97 U	97 UJ	92 UJ	94 UJ	93 U	91 U	91 UJ	92 U	92 U	90 U	93 UJ	92 UJ	110 UJ	90 U	95 U	120 UJ	94 UJ	93 UJ	92 UJ	92 UJ	95 UJ
BENZO(B)FLUORANTHENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
BENZO(G,H,I)PERYLENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
BENZO(K)FLUORANTHENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
BIS(2-CHLOROETHOXY)METHANE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
BIS(2-CHLOROETHYL)ETHER	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
BIS(2-CHLOROISOPROPYL)ETHER	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	370 UJ	390 U	390 UJ	370 UJ	380 UJ	370 UJ	360 UJ	360 UJ	370 UJ	370 UJ	360 UJ	370 U	370 U	440 UJ	360 U	380 UJ	470 UJ	380 UJ	370 UJ	370 U	370 U	380 U
BUTYL BENZYL PHTHALATE	370 UJ	390 U	390 UJ	370 UJ	380 UJ	370 UJ	360 UJ	360 UJ	370 UJ	370 UJ	360 UJ	370 U	370 U	440 UJ	360 U	380 UJ	470 UJ	380 UJ	370 UJ	370 U	370 U	380 U
CARBAZOLE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
CHRYSENE	370 UJ	390 U	390 UJ	370 UJ	380 UJ	370 UJ	360 UJ	360 UJ	370 UJ	370 U	360 UJ	370 U	370 U	440 UJ	360 U	380 UJ	470 UJ	380 UJ	370 UJ	370 U	370 U	380 U
DI-N-BUTYL PHTHALATE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
DI-N-OCTYL PHTHALATE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
DIBENZO(A,H)ANTHRACENE	92 U	97 U	97 UJ	92 UJ	94 UJ	93 U	91 UJ	91 UJ	92 U	92 U	90 U	93 UJ	92 UJ	110 UJ	90 U	95 U	120 UJ	94 UJ	93 UJ	92 U	92 UJ	95 UJ
DIBENZOFURAN	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
DIETHYL PHTHALATE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
DIMETHYL PHTHALATE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
FLUORANTHENE	370 U	390 U	390 UJ	370 UJ	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 UJ	360 U	370 UJ	370 U	440 UJ	360 U	380 UJ	470 UJ	380 UJ	370 UJ	370 U	370 U	380 UJ
FLUORENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
HEXACHLOROBENZENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 UJ	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
HEXACHLOROBUTADIENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
HEXACHLOROCYCLOPENTADIENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
HEXACHLOROETHANE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
INDENO(1,2,3-CD)PYRENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
ISOPHORONE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
N-NITROSO-DI-N-PROPYLAMINE	18 U	19 U	19 UJ	18 UJ	19 UJ	19 U	18 U	18 UJ	18 U	18 U	18 U	19 U	18 U	22 UJ	18 U	19 U	24 U	19 U	19 UJ	18 UJ	18 UJ	19 U
N-NITROSODIPHENYLAMINE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 UJ	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
NAPHTHALENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U

location	OU2S130	OU2S131	OU2S132	OU2S133	OU2S134	OU2S135	OU2S137	OU2S137	OU2S138	OU2S139	OU2S140	OU2S151	OU2S151	OU2S152	OU2S153	OU2S154	OU2S155	OU2S156	OU2S157	OU2S158	OU2S159	OU2S160
nsample	**NTCSS13000**	**NTCSS13100**	**NTCSS13200**	**NTCSS13300**	**NTCSS13400**	**NTCSS13500**	**NTCSS13700**	**NTCSS13700-D**	**NTCSS13800**	**NTCSS13900**	**NTCSS14000**	**NTCSS15100**	**NTCSS15100-D**	**NTCSS15200**	**NTCSS15300**	**NTCSS15400**	**NTCSS15500**	**NTCSS15600**	**NTCSS15700**	**NTCSS15800**	**NTCSS15900**	**NTCSS16000**
sample_dat	19970628	19970629	19970630	19970701	19970630	19970630	19970630	19970630	19970630	19970630	19970628	19970701	19970701	19970701	19970701	19970701	19970630	19970630	19970701	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate								NTCSS13700					NTCSS15100									
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
PHENANTHRENE	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 UJ	360 U	370 U	370 U	440 UJ	360 U	380 U	470 UJ	380 UJ	370 U	370 U	370 U	380 U
PHENOL	370 U	390 U	390 UJ	370 U	380 UJ	370 U	360 U	360 UJ	370 U	370 U	360 U	370 U	370 U	440 UJ	360 U	380 U	470 U	380 U	370 U	370 U	370 U	380 U
PYRENE	370 UJ	390 U	390 UJ	370 UJ	380 UJ	370 U	360 UJ	360 UJ	370 UJ	370 UJ	360 UJ	370 UJ	370 U	440 UJ	360 U	380 UJ	470 UJ	380 UJ	370 UJ	370 U	370 UJ	380 UJ
Pesticides/PCBs (µg/kg)																						
4,4'-DDD	2.1 U	2 U	2 U	2.1 U	2.1 U	2 U	2 U	2 U	2 U	2 U	1.9 U	2 U	2.2 U	2.1 U	2 U	2 U	2.1 U	2 U	2 U	2 U	1.9 U	2 U
4,4'-DDE	1 U	0.98 U	0.98 U	1 U	1 U	0.97 U	0.94 U	0.95 U	0.96 U	0.95 U	0.93 U	0.95 U	1 U	1 U	2.1 J	0.97 U	1 U	3	3.1 J	0.95 U	0.93 U	0.95 U
4,4'-DDT	4.8 U	4.5 U	4.5 U	4.6 U	4.6 U	4.5 U	4.4 U	4.4 U	4.4 U	4.4 U	4.3 U	4.4 U	4.8 U	4.6 U	4.4 U	4.5 U	4.6 U	4.4 U	4.5 U	4.4 U	4.3 U	4.4 U
ALDRIN	3.8 U	3.6 U	3.6 U	3.6 U	3.7 U	3.5 U	3.4 U	3.4 U	3.5 U	3.4 U	3.4 U	3.4 U	3.8 U	3.7 U	3.5 U	3.5 U	3.6 U	3.5 U	3.5 U	3.5 U	3.4 U	3.5 U
ALPHA-BHC	0.83 U	0.79 U	0.79 U	0.8 U	0.81 U	0.78 U	0.76 U	0.76 U	0.77 U	0.76 U	0.75 U	0.76 U	0.84 U	0.81 U	0.78 U	0.78 U	0.8 U	0.77 U	0.78 U	0.77 U	0.75 U	0.77 U
ALPHA-CHLORDANE	0.87 U	0.83 U	0.83 U	0.84 U	0.85 U	0.82 U	0.8 U	0.8 U	0.81 U	0.8 U	0.78 U	0.8 U	0.88 U	0.85 U	0.81 U	0.82 U	0.84 U	0.81 U	0.82 U	0.8 U	0.79 U	0.81 U
AROCLOR-1016							19 U	19 U														
AROCLOR-1221							6.9 U	6.9 U														
AROCLOR-1232							15 U	15 U														
AROCLOR-1242							10 U	10 U														
AROCLOR-1248							8 U	8 U														
AROCLOR-1254							12 U	12 U														
AROCLOR-1260							17 U	17 U														
BETA-BHC	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
DELTA-BHC	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.3 U	1.3 U	1.4 U	1.3 U	1.3 U	1.3 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
DIELDRIN	1 U	0.98 U	0.98 U	1 U	1 U	0.97 U	0.94 U	0.95 U	0.96 U	0.95 U	0.93 U	0.95 U	1 U	1 U	0.96 U	0.97 U	3	0.96 U	0.97 U	0.95 U	0.93 U	0.95 U
ENDOSULFAN I	1.1 U	1 U	1 U	1 U	1 U	1 U	0.98 U	0.98 U	0.99 U	0.98 U	0.96 U	0.98 U	1.1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.99 U	0.97 U	0.99 U
ENDOSULFAN II	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.4 U	1.3 U	1.2 U	1.3 U	1.3 U	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U
ENDOSULFAN SULFATE	4.4 U	4.1 U	4.2 U	4.2 U	4.3 U	4.1 U	4 U	4 U	4 U	4 U	3.9 U	4 U	4.4 U	4.2 U	4.1 U	4.1 U	4.2 U	4 U	4.1 U	4 U	3.9 U	4 U
ENDRIN	1.7 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	1.6 U	1.7 U	1.7 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	1.6 U
ENDRIN ALDEHYDE	1.6 U	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.6 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.4 U	1.5 U
ENDRIN KETONE	7.9 U	7.5 U	7.6 U	7.7 U	7.8 U	7.5 U	7.3 U	7.3 U	7.4 U	7.3 U	7.1 U	7.3 U	8 U	7.7 U	7.4 U	7.4 U	7.7 U	7.4 U	7.5 U	7.3 U	7.2 U	7.3 U
GAMMA-BHC (LINDANE)	0.87 U	0.83 U	0.83 U	0.84 U	0.85 U	0.82 U	0.8 U	0.8 U	0.81 U	0.8 U	0.78 U	0.8 U	0.88 U	0.85 U	0.81 U	0.82 U	0.84 U	0.81 U	0.82 U	0.8 U	0.79 U	0.81 U
GAMMA-CHLORDANE	0.99 U	0.94 U	0.94 U	0.96 U	0.97 U	0.93 U	0.91 U	0.91 U	0.92 U	0.91 U	0.89 U	0.91 U	1 U	0.97 U	0.92 U	0.93 U	0.96 U	0.92 U	0.93 U	0.92 U	0.9 U	0.92 U
HEPTACHLOR	1 U	1.6	0.98 U	1 U	1 U	1.1 J	0.94 U	3	0.96 U	0.95 U	0.93 U	0.95 U	1 U	1 U	0.96 U	0.97 U	1 U	0.96 U	0.97 U	0.95 U	0.93 U	0.95 U
HEPTACHLOR EPOXIDE	1.1 U	1 U	1 U	1 U	1 U	1 U	0.98 U	0.98 U	0.99 U	0.98 U	0.96 U	0.98 U	1.1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.99 U	0.97 U	0.99 U
METHOXYCHLOR	7.1 U	6.8 U	6.8 U	6.9 U	7 U	6.7 U	6.5 U	6.6 U	6.6 U	6.6 U	6.4 U	6.6 U	7.2 U	7 U	6.7 U	6.7 U	6.9 U	6.6 U	6.7 U	6.6 U	6.4 U	6.6 U
TOXAPHENE	79 U	75 U	76 U	77 U	78 U	75 U	73 U	73 U	74 U	73 U	71 U	73 U	80 U	77 U	74 U	74 U	77 U	74 U	75 U	73 U	72 U	73 U
Inorganics (mg/kg)																						
ALUMINUM	3540	1840	1680	1700	1400	1650	1830	1450	815	3180	1690	4980	5090	1230	2170	2450	1240	2700	3110	2930	1760	1280
ANTIMONY	0.32 U	0.31 U	0.31 U	0.31 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.29 U	0.3 U	0.33 U	0.32 U	0.3 U	0.31 U	0.31 U	0.3 U	0.3 U	0.3 U	0.29 U	0.3 U
ARSENIC	1.2	0.89	2.5	4.8	1.3	1.2	0.92	0.58	0.5 U	1.4	1.2	2.5	3.3	0.53 U	0.73	1.9	0.78	0.84	1.4	0.49 U	0.49 U	2
BARIUM	10.5	3.2 U	6	3.6	2	3.2	2.9	2.4	2.4	4.2	6 U	18.7	14.8	3.6	6.3	4.7	4.2	6.5	8.7	5.4	10.5	4.6
BERYLLIUM	0.11 U	0.09 U	0.05 U	0.04 U	0.03 U	0.04 U	0.03 U	0.04 U	0.03 U	0.11 U	0.02 U	0.11 U	0.12 U	0.04 U	0.09 U	0.06 U	0.13 U	0.12 U	0.1 U	0.05 U	0.03 U	0.08 U
CADMIUM	0.06 U	0.06 U	0.07	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.05 U	0.06 U	0.06 U	0.06 U	0.14 U	0.06 U	0.06 U	0.06 U	0.14 U	0.06 U	0.05 U	0.06 U
CALCIUM	964	1720	794	731 J	811	452	730	1680	864	583	450	610 J	545 J	1790 J	12500 J	1060 J	4300	1230	3270 J	1840 J	1640 J	666 J
CHROMIUM	3.9	2.2	2.4	2.8	1.4	1.8	2.3	2	1.4	4.2	2.1	6	5.8	2.5	3.6	3.6	2.3	3.5	4.8	2.8	1.9	5.7
COBALT	0.2 U	0.19 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.22	0.2 U	0.19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U
COPPER	1.3	1.4	4.1	2 U	1.5 U	1 U	1.4 U	0.64 U	1.4 U	1.5 U	0.86	0.93 U	1.1 U	2.5	3	5	2 U	2 U	3.3	2.3	2.6	3
CYANIDE	1.1 UR	1.2 UR	1.16 U	1.1 UJ	1.12 U	1.11 U	1.09 U	1.08 U	1.1 U	1.1 U	1.1 UR	1.1 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.1 UJ	1.41 U	1.13 U	1.1 U	1.1 UJ	1.1 UJ	1.1 UJ
IRON	972	637	349 J	207 J	219 J	258 J	622 J	576 J	298 J	925 J	431	584 J	734 J	312 J	458 J	362 J	552 J	500 J	645 J	246 J	299 J	297 J
LEAD	4.7	3.4	4.2	3.9 J	2.5	2.6	2.4	1.7	2.3	1.6	1.7 U	3 J	3.7 J	11.6 J	3.7 J	2.2 J	5.3	7.3	7.1 J	4.4 J	5.7 J	4.2 J
MAGNESIUM	122	49.1	64.4	47.9	71	42.5	63.7	59.2	55.9	63.2	60.6	79	83	58.5	143	68	86.7	75.5	86.6	64.5	36.5	50

location	OU2S130	OU2S131	OU2S132	OU2S133	OU2S134	OU2S135	OU2S137	OU2S137	OU2S138	OU2S139	OU2S140	OU2S151	OU2S151	OU2S152	OU2S153	OU2S154	OU2S155	OU2S156	OU2S157	OU2S158	OU2S159	OU2S160
nsample	**NTCSS13000**	**NTCSS13100**	**NTCSS13200**	**NTCSS13300**	**NTCSS13400**	**NTCSS13500**	**NTCSS13700**	**NTCSS13700-D**	**NTCSS13800**	**NTCSS13900**	**NTCSS14000**	**NTCSS15100**	**NTCSS15100-D**	**NTCSS15200**	**NTCSS15300**	**NTCSS15400**	**NTCSS15500**	**NTCSS15600**	**NTCSS15700**	**NTCSS15800**	**NTCSS15900**	**NTCSS16000**
sample_dat	19970628	19970629	19970630	19970701	19970630	19970630	19970630	19970630	19970630	19970630	19970628	19970701	19970701	19970701	19970701	19970701	19970630	19970630	19970701	19970701	19970701	19970701
qc_type	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
duplicate								NTCSS13700					NTCSS15100									
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	4	2.8	3.5	5.9	2.8	1	1.4	1.7	2	1	4.1	1.8	2.4	5	5.5	5.2	3.8	5.1	8.9	2.6	2.7	35.5
MERCURY	0.1 U	0.09 U	0.12	0.1 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.1 U	0.09 U	0.22	0.09 U	0.09 U	0.09 U	0.13	0.09 U	0.09 U	0.09 U
NICKEL	1	0.48	0.42	0.43	0.22 U	0.47	0.54	0.28	0.26	0.93	5.4	1.2	1.4	0.34	0.65	0.68	0.47	0.96	1.1	0.67	0.28	0.38
POTASSIUM	46.1	27.8	38.8	32.5	30.1	31	28.9	17.1	16.4	23.9	21.6	71.8	77.2	26.6	33.8	33.1	24.7	30.3	43	28.8	15.3	34.6
SELENIUM	0.44 U	0.42 U	0.43 U	0.43 U	0.41 U	0.42 U	0.4 U	0.41 U	0.41 U	0.41 U	0.4 U	0.41 U	0.45 U	0.43 U	0.47	0.42 U	0.43 U	0.41 U	0.54	0.41 U	0.4 U	0.41 U
SILVER	0.24 U	0.23 U	0.53	0.23 U	0.22 U	0.23 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.24 U	0.24 U	2.4	0.23 U	0.23 U	0.22 U	1.9	0.22 U	0.22 U	0.22 U
SODIUM	99.2 U	93.4 U	95.2 U	96 U	92.2 U	92.8 U	90.3 U	90.5 U	91.9 U	90.7 U	89.7 U	91.9 U	99.5 U	96.9 U	91.9 U	93.4 U	95.3 U	91.8 U	92.5 U	90.8 U	89.2 U	90.8 U
THALLIUM	0.48 U	0.45 U	0.46 U	0.47 U	0.45 U	0.45 U	0.44 U	0.44 U	0.45 U	0.44 U	0.43 U	0.45 U	0.48 U	0.47 U	0.45 U	0.45 U	0.46 U	0.44 U	0.45 U	0.44 U	0.43 U	0.44 U
VANADIUM	3.4	1.7	1.3	1.1	0.62	1.6	2.2	2	1.3	5.7	2.2	6.3	6.6	0.81	2.2	2.2	2.7	3.4	2.7	1.1	0.73	0.68
ZINC	1.8 U	6.3	7.7	5.8	1.9 U	2.1 U	1.4 U	1 U	2 U	1.2 U	1.4 U	1 U	1.3 U	3.8 U	9.1	2.5 U	4.9	7.7	9.6	2.2 U	2.6 U	4.7
Herbicides (µg/kg)																						
2,4,5-T	1.6 U	1.5 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.6 U	1.5 U	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2,4,5-TP (SILVEX)	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U	1.6 U	1.6 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.6 U	1.7 U
2,4-D	8.4 U	7.9 U	8 U	8 U	7.8 U	7.8 U	7.6 U	7.7 U	7.7 U	7.6 U	7.6 U	7.7 U	8.4 U	8 U	7.7 U	8 U	8 U	7.8 U	7.7 U	7.7 U	7.4 U	7.7 U
2,4-DB	4.8 U	4.5 U	4.6 U	4.6 U	4.5 U	4.5 U	4.3 U	4.4 U	4.4 U	4.4 U	4.3 U	4.4 U	4.8 U	4.6 U	4.4 U	4.6 U	4.6 U	4.4 U	4.4 U	4.4 U	4.2 U	4.4 U
DALAPON	9.6 U	9 U	9.2 U	9.2 UR	8.9 U	9 U	8.7 U	8.8 U	8.8 U	8.7 U	8.7 U	8.8 UR	9.6 UR	9.2 UR	8.8 UR	9.2 UR	9.2 U	8.9 U	8.8 UR	8.8 UR	8.4 UR	8.8 UR
DICAMBA	4.8 U	4.5 U	4.6 U	4.6 U	4.5 U	4.5 U	4.3 U	4.4 U	4.4 U	4.4 U	4.3 U	4.4 U	4.8 U	4.6 U	4.4 U	4.6 U	4.6 U	4.4 U	4.4 U	4.4 U	4.2 U	4.4 U
DICHLOROPROP	24 U	22 U	23 U	23 U	22 U	22 U	22 U	22 U	22 U	22 U	22 U	22 U	24 U	23 U	22 U	23 U	23 U	22 U	22 U	22 U	21 U	22 U
DINOSEB	4.8 U	4.5 U	4.6 U	4.6 U	4.5 U	4.5 U	4.3 U	4.4 U	4.4 U	4.4 U	4.3 U	4.4 U	4.8 U	4.6 U	4.4 U	4.6 U	4.6 U	4.4 U	4.4 U	4.4 U	4.2 U	4.4 U
MCPA	2400 U	2200 U	2300 U	2300 UR	2200 U	2200 U	2200 U	2200 U	2200 U	2200 U	2200 U	2200 UR	2400 UR	2300 UR	2200 UR	2300 UR	2300 U	2200 U	2200 UR	2200 UR	2100 UR	2200 UR
MCPP	1200 U	1100 U	1100 U	1200 UR	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U	1100 UR	1200 UR	1200 UR	1100 UR	1200 UR	1100 U	1100 U	1100 UR	1100 UR	1000 UR	1100 UR
PENTACHLOROPHENOL	2.4 U	2.2 U	2.3 U	2.3 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.4 U	2.3 U	2.2 U	2.3 U	2.3 U	2.2 U	2.2 U	2.2 U	2.1 U	2.2 U
Miscellaneous Parameters (mg/kg)																						
CATION EXCHANGE CAPACITY										1470								2180		3520		2660
CYANIDE																						
DIESEL RANGE ORGANICS	8.09 J	9.48 J	9.7 U	9.2 U	9.4 U	47.8	9.1 U	9.1 U	9.2 U	9.2 U	9 U	9.3 U	9.2 U	9.92	9 U	9.5 U	12 U	9.4 U	9.66	9.2 U	30.7	9.5 U
GASOLINE RANGE ORGANICS	0.11 U	0.12 U	0.12 UJ	0.11 UJ	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ	0.13 U	0.11 U	0.11 UJ	0.14 U	0.11 U	0.11 UJ	0.11 U	0.11 U	0.11 U
TOTAL ORGANIC CARBON										7030								1.1		15100		14800 J
Petroleum Hydrocarbons (mg/kg)																						
TOTAL PETROLEUM HYDROCARBONS																						
Radiological (pCi/g)																						
ACTINIUM-228																						
BISMUTH-214																						
CESIUM-137																						
GROSS ALPHA	1.19	0.792	0.434	0.744	0.46	0.601	0.695	0.697	0.509	0.995	0.981	2.57	2.72	0.72	1.19	1.06	0.826	0.741	2.09	0.806	1.51	1.28
GROSS BETA	0.765	0.449	0.102 U	0.377	0.096 U	0.157	0.066 U	0.357	0.358	0.701	0.617	1.28 J	1.42	0.621 J	0.908	0.686	0.312	0.657	1.14	0.251	0.628 J	0.754 J
LEAD-210																						
LEAD-212																						
LEAD-214																						
THALLIUM-208																						

Notes:

Abbreviations:

g = gram
kg = kilogram
mg = milligram
µg = microgram
NA = not applicable
pCi = picocurie

Qualifiers:

J = estimated
R = rejected
U = not detected

Surface Water in Ponds

APPENDIX A
POND SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW001		OU2SW001		OU2SW002		OU2SW003		OU2SW004		OU2SW005		OU2SW006		OU2SW006		OU2SW007		OU2SW009		OU2SW011		OU2SW013		OU2SW016		OU2SW016		OU2SW017	
nsample	**NTCSW00100-070197**		**NTCSW00103-081199**		**NTCSW00200-070197**		**NTCSW00300-070197**		**NTCSW00400-070197**		**NTCSW00500-070197**		**NTCSW00600-070197**		**NTCSW00600-070197-D**		**NTCSW00700-070297**		**NTCSW00900-070297**		**NTCSW01100-082598**		**NTCSW01300-082598**		**NTCSW01600-082598**		**NTCSW01600-082598-D**		**NTCSW01700-082598**	
sample_dat	19970701		19990811		19970701		19970701		19970701		19970701		19970702		19970701		19970702		19970702		19980825		19980825		19980825		19980825		19980825	
qc_type	NM		NM		NM		NM		NM		NM		NM		FD		NM		NM		NM		NM		NM		FD		NM	
sacode	NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL	
matrix	SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW	
duplicate															NTCSW00600-070197												NTCSW01600-082598			
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Volatile Organics (µg/L)																														
1,1,1-TRICHLOROETHANE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,1,2,2-TETRACHLOROETHANE	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	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,1,2-TRICHLOROTRIFLUOROETHANE																														
1,1-DICHLOROETHANE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,1-DICHLOROETHENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,3-TRICHLOROBENZENE																														
1,2,4-TRICHLOROBENZENE																														
1,2-DIBROMO-3-CHLOROPROPANE																														
1,2-DIBROMOETHANE																														
1,2-DICHLOROBENZENE																														
1,2-DICHLOROETHANE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-DICHLOROPROPANE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,3-DICHLOROBENZENE																														
1,4-DICHLOROBENZENE																														
2-BUTANONE	10	U			10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UR	10	UR	10	UR	10	UR	10	UR
2-HEXANONE	10	U			10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-METHYL-2-PENTANONE	10	U			10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
ACETONE	10	U			10	U	10	U	10	U	10	U	10	U	10	UR	10	UR	10	UR	50	UR	50	UR	50	UR	50	UR	50	UR
BENZENE	1	U			1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
BROMOCHLOROMETHANE																														
BROMODICHLOROMETHANE	0.6	U			0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	1	U	1	U	1	U	1	U	1	U
BROMOFORM	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
BROMOMETHANE	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
CARBON DISULFIDE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	10	U	10	U	10	U	10	U	10	U
CARBON TETRACHLORIDE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROBENZENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
CHLORODIBROMOMETHANE	1	U			1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
CHLOROETHANE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROFORM	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROMETHANE	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2	U	2	U	2	U	2	U	2	U
CIS-1,2-DICHLOROETHENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
CIS-1,3-DICHLOROPROPENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
CYCLOHEXANE																														
DICHLORODIFLUOROMETHANE																														
ETHYLBENZENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
ISOPROPYLBENZENE																														
METHYL ACETATE																														
METHYL CYCLOHEXANE																														
METHYL TERT-BUTYL ETHER																														
METHYLENE CHLORIDE	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
STYRENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
TETRACHLOROETHENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
TOLUENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	16.3		2	U	2	U	2	U	2	U
TOTAL XYLENES	6	U			6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
TRANS-1,2-DICHLOROETHENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
TRANS-1,3-DICHLOROPROPENE	1	U			1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHENE	2	U			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
TRICHLOROFLUOROMETHANE																														
VINYL ACETATE																														
VINYL CHLORIDE	1	U			1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Semivolatile Organics (µg/L)																														
1,2,4-TRICHLOROBENZENE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
1,2-DICHLOROBENZENE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
1,3-DICHLOROBENZENE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
1,4-DICHLOROBENZENE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U

APPENDIX A
POND SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW001		OU2SW001		OU2SW002		OU2SW003		OU2SW004		OU2SW005		OU2SW006		OU2SW006		OU2SW007		OU2SW009		OU2SW011		OU2SW013		OU2SW016		OU2SW016		OU2SW017	
nsample	**NTCSW00100-070197**		**NTCSW00103-081199**		**NTCSW00200-070197**		**NTCSW00300-070197**		**NTCSW00400-070197**		**NTCSW00500-070197**		**NTCSW00600-070197**		**NTCSW00600-070197-D**		**NTCSW00700-070297**		**NTCSW00900-070297**		**NTCSW01100-082598**		**NTCSW01300-082598**		**NTCSW01600-082598**		**NTCSW01600-082598-D**		**NTCSW01700-082598**	
sample_dat	19970701		19990811		19970701		19970701		19970701		19970701		19970702		19970701		19970702		19970702		19980825		19980825		19980825		19980825		19980825	
qc_type	NM		NM		NM		NM		NM		NM		NM		FD		NM		NM		NM		NM		NM		FD		NM	
sacode	NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL	
matrix	SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW	
duplicate															NTCSW00600-070197												NTCSW01600-082598			
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1-METHYLNAPHTHALENE			2.1	U																										
2,2'-OXYBIS(1-CHLOROPROPANE)			10	U																										
2,4,5-TRICHLOROPHENOL	4	U	10	U	4	U	4	U	4	U	4	U	4	U	4	UJ	4	UJ	4	UJ	4	U	4	U	4	U	4	U	4	U
2,4,6-TRICHLOROPHENOL	4	U	10	U	4	U	4	U	4	U	4	U	4	U	4	UJ	4	UJ	4	UJ	4	U	4	U	4	U	4	U	4	U
2,4-DICHLOROPHENOL	4	U	10	U	4	U	4	U	4	U	4	U	4	U	4	UJ	4	UJ	4	UJ	4	U	4	U	4	U	4	U	4	U
2,4-DIMETHYLPHENOL	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
2,4-DINITROPHENOL	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	UJ	25	UJ	25	UJ	25	U	25	U	25	U	25	U	25	U
2,4-DINITROTOLUENE	0.2	UJ	10	U	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
2,6-DINITROTOLUENE	0.2	U	10	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
2-CHLORONAPHTHALENE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
2-CHLOROPHENOL	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
2-METHYLNAPHTHALENE	10	U	2.1	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
2-METHYLPHENOL	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
2-NITROANILINE	7.5	U	25	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	UJ	7.5	UJ	7.5	UJ	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
2-NITROPHENOL	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
3&4-METHYLPHENOL	10	U			10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
3,3'-DICHLOROBENZIDINE	7.5	U	10	U	7.5	U	7.5	U	7.5	UJ	7.5	UJ	7.5	U	7.5	UJ	7.5	UJ	7.5	UJ	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
3-NITROANILINE	7.5	U	25	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	UJ	7.5	UJ	7.5	UJ	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
4,6-DINITRO-2-METHYLPHENOL	10	U	25	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
4-BROMOPHENYL PHENYL ETHER	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
4-CHLORO-3-METHYLPHENOL	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
4-CHLOROANILINE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
4-CHLOROPHENYL PHENYL ETHER	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
4-METHYLPHENOL			10	U																										
4-NITROANILINE	7.5	U	25	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	UJ	7.5	UJ	7.5	UJ	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
4-NITROPHENOL	15	U	25	U	15	U	15	U	15	U	15	U	15	U	15	UJ	15	UJ	15	UJ	15	U	15	U	15	U	15	U	15	U
ACENAPHTHENE	10	U	1.1	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
ACENAPHTHYLENE	10	U	1.1	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
ANTHRACENE	10	U	1.1	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
BENZO(A)ANTHRACENE	4	U	0.11	U	4	U	4	U	4	UJ	4	UJ	4	U	4	UJ	4	UJ	4	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
BENZO(A)PYRENE	0.2	U	0.11	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
BENZO(B)FLUORANTHENE	4	U	0.11	U	4	U	4	U	4	U	4	U	4	U	4	UJ	4	UJ	4	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
BENZO(G,H,I)PERYLENE	10	U	0.11	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
BENZO(K)FLUORANTHENE	4	U	0.32	U	4	U	4	U	4	U	4	U	4	U	4	UJ	4	UJ	4	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
BIS(2-CHLOROETHOXY)METHANE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
BIS(2-CHLOROETHYL)ETHER	1.5	U	10	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	UJ	1.5	UJ	1.5	UJ	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
BIS(2-CHLOROISOPROPYL)ETHER	7.5	U			7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	UJ	7.5	UJ	7.5	UJ	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
BIS(2-ETHYLHEXYL)PHTHALATE	6	U	10	U	6	U	6	U	6	UJ	6	UJ	6	U	6	UJ	6	UJ	6	UJ	6	U	6	U	6	U	6	U	6	U
BUTYL BENZYL PHTHALATE	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
CARBAZOLE	7.5	U	10	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	UJ	7.5	UJ	7.5	UJ	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
CHRYSENE	5	U	0.11	U	5	U	5	U	5	UJ	5	UJ	5	U	5	UJ	5	UJ	5	UJ	5	U	5	U	5	U	5	U	5	U
DI-N-BUTYL PHTHALATE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
DI-N-OCTYL PHTHALATE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
DIBENZO(A,H)ANTHRACENE	7.5	U	0.11	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
DIBENZOFURAN	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
DIETHYL PHTHALATE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
DIMETHYL PHTHALATE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
FLUORANTHENE	10	U	0.21	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
FLUORENE	10	U	2.1	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
HEXACHLOROBENZENE	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	UJ	1	UJ	1	UJ	1	U	1	U	1	U	1	U	1	U
HEXACHLOROBUTADIENE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	10	UR	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
HEXACHLOROETHANE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
INDENO(1,2,3-CD)PYRENE	7.5	U	0.11	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	UJ	7.5	UJ	7.5	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
ISOPHORONE	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
N-NITROSO-DI-N-PROPYLAMINE	4	U	10	U	4	U	4	U	4	U	4	U	4	U	4	UJ	4	UJ	4	UJ	1	U	1	U	1	U	1	U	1	U
N-NITROSODIPHENYLAMINE	7	U	10	U	7	U	7	U	7	U	7	U	7	U	7	UJ	7	UJ	7	UJ	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
NAPHTHALENE	5	U	2.1	U	5	U	5	U	5	U	5	U	5	U	5	UJ	5	UJ	5	UJ	5	U	5	U	5	U	5	U	5	U

APPENDIX A
POND SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW001		OU2SW001		OU2SW002		OU2SW003		OU2SW004		OU2SW005		OU2SW006		OU2SW006		OU2SW007		OU2SW009		OU2SW011		OU2SW013		OU2SW016		OU2SW016		OU2SW017	
nsample	**NTCSW00100-070197**		**NTCSW00103-081199**		**NTCSW00200-070197**		**NTCSW00300-070197**		**NTCSW00400-070197**		**NTCSW00500-070197**		**NTCSW00600-070197**		**NTCSW00600-070197-D**		**NTCSW00700-070297**		**NTCSW00900-070297**		**NTCSW01100-082598**		**NTCSW01300-082598**		**NTCSW01600-082598**		**NTCSW01600-082598-D**		**NTCSW01700-082598**	
sample_dat	19970701		19990811		19970701		19970701		19970701		19970701		19970702		19970701		19970702		19970702		19980825		19980825		19980825		19980825		19980825	
qc_type	NM		NM		NM		NM		NM		NM		NM		FD		NM		NM		NM		NM		NM		FD		NM	
sacode	NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL	
matrix	SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW	
duplicate															NTCSW00600-070197												NTCSW01600-082598			
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
NITROBENZENE	7.5	U	10	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	UJ	7.5	UJ	7.5	UJ	10	U	10	U	10	U	10	U	10	U
PENTACHLOROPHENOL			25	U																										
PHENANTHRENE	10	U	1.1	U	10	U	10	U	10	U	10	U	10	U	UJ	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
PHENOL	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
PYRENE	10	U	0.11	U	10	U	10	U	10	UJ	10	UJ	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U	10	U	10	U
Pesticides/PCBs (µg/L)																														
4,4'-DDD	0.033	U			0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
4,4'-DDE	0.023	U			0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
4,4'-DDT	0.025	U			0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ
ALDRIN	0.022	U			0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.05	UJ	0.05	UJ	0.05	U	0.05	U	0.05	U
ALPHA-BHC	0.015	U			0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.05	UJ	0.05	UJ	0.05	U	0.05	U	0.05	U
ALPHA-CHLORDANE	0.022	U			0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
AROCLOR-1016													0.23	U	0.23	U														
AROCLOR-1221													0.19	U	0.19	U														
AROCLOR-1232													0.054	U	0.054	U														
AROCLOR-1242													0.025	U	0.025	U														
AROCLOR-1248													0.4	U	0.4	U														
AROCLOR-1254													0.2	U	0.2	U														
AROCLOR-1260													0.31	U	0.31	U														
BETA-BHC	0.019	U			0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
DELTA-BHC	0.016	U			0.016	U	0.016	U	0.016	U	0.016	U	0.016	U	0.016	U	0.016	U	0.016	U	0.05	UJ	0.05	UJ	0.05	U	0.05	U	0.05	U
DIELDRIN	0.021	U			0.021	U	0.021	U	0.021	U	0.021	U	0.021	U	0.021	U	0.021	U	0.021	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
ENDOSULFAN I	0.023	U			0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.05	UJ	0.05	UJ	0.05	U	0.05	U	0.05	U
ENDOSULFAN II	0.024	U			0.024	U	0.024	U	0.024	U	0.024	U	0.024	U	0.024	U	0.024	U	0.024	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
ENDOSULFAN SULFATE	0.046	U			0.046	U	0.046	U	0.046	U	0.046	U	0.046	U	0.046	U	0.046	U	0.046	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
ENDRIN	0.027	U			0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
ENDRIN ALDEHYDE	0.032	U			0.032	U	0.032	U	0.032	U	0.032	U	0.032	U	0.032	U	0.032	U	0.032	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
ENDRIN KETONE	0.03	U			0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
GAMMA-BHC (LINDANE)	0.017	U			0.017	U	0.017	U	0.017	U	0.017	U	0.017	U	0.017	U	0.017	U	0.017	U	0.05	UJ	0.05	UJ	0.05	U	0.05	U	0.05	U
GAMMA-CHLORDANE	0.02	U			0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U
HEPTACHLOR	0.018	U			0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.05	UJ	0.05	UJ	0.05	U	0.05	U	0.05	U
HEPTACHLOR EPOXIDE	0.021	U			0.021	U	0.021	U	0.021	U	0.021	U	0.021	U	0.021	U	0.021	U	0.021	U	0.05	UJ	0.05	UJ	0.05	U	0.05	U	0.05	U
METHOXYCHLOR	0.022	U			0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.022	U	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	U
TOXAPHENE	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	2.5	UJ	2.5	UJ	2.5	U	2.5	U	2.5	UJ
Inorganics (µg/L)																														
ALUMINUM	246	U	5500		120	U	126	U	96.8	U	468	J	3700	J	249	U	908	J	5700	J	233	U	825		672	U	1090		207	U
ANTIMONY	2.7	U	2.2	U	2.7	U	2.7	U	2.7	U	2.7	U	2.7	U	2.7	U	2.7	U	2.7	U	3.8	U	3.8	U	3.8	U	3.8	U	3.8	U
ARSENIC	4.5	U	4.8		4.5	U	4.5	U	4.5	U	4.5	U	5		4.5	U	5.4		7		3.1	U	3.1	U	3.1	U	3.1	U	3.1	U
BARIUM	10	U	39.9		10	U	10.6		11.6		11.1		26.9		15.9		11.8		43		11.5		67.4		16.7		16.7		23.8	
BERYLLIUM	0.1	U	0.21	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.29	U	0.55	U	0.61	U	0.62	U	0.9	U	1	U
CADMIUM	0.5	U	0.31	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
CALCIUM	10400		17600		10400		10500		9460		10300		14700		12100		10100		11900		11900		16400		19600		20500		74500	
CHROMIUM	1.8	U	7.9		1.8	U	1.8	U	1.8	U	1.8	U	6.6		1.8	U	2.2		11.2		3.6	U	5.9	U	3	U	3.2	U	6.3	U
COBALT	1.7	U	1.6	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.2	U	1.2	U	0.71	U	0.71	U	0.71	U
COPPER	2.7	U	12.4		2.7	U	3.9		2.7	U	2.8		13.3		2.7	U	2.7	U	13.8		5.8		5.7		4.2		5.8		5.6	
CYANIDE	10	UJ			10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ										
IRON	272	J	5010		292	J	324	J	606	J	288	J	1330	J	146	J	588	J	6530	J	7090		4680		4850		3680		205	U
LEAD	1.4	U	12.4		1.4	U	1.4	U	1.4	U	1.4	U	16.6		1.4	U	1.4	U	5.7		5.3	U	5.6	U	8.6	U	7.6	U	5	U
MAGNESIUM	1090		1390		1100		1350		731		1230		3360		3380		3310		4130		2710		4510		1370		1520		12600	
MANGANESE	6.5	J	159		9.3	J	14.7	J	4.3	U	3.1	U	55	J	24.4	J	57.7	J	31.6	J	49.9		77.9		14.9		11.6	U	16.7	
MERCURY	0.16	U	0.00341		0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.15		0.2	U	0.2	U	0.2	U	0.12	
NICKEL	2	U	3.4		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2.9		3.5	U	6.9	U	1.8	U	1.6	U	2.7	U
POTASSIUM	1850		1360	U	1860		2020		341		1780		3800		3190		2640		2830		650	U	6070		466	U	426	U	18800	

APPENDIX A
POND SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW001		OU2SW001		OU2SW002		OU2SW003		OU2SW004		OU2SW005		OU2SW006		OU2SW006		OU2SW007		OU2SW009		OU2SW011		OU2SW013		OU2SW016		OU2SW016		OU2SW017	
nsample	**NTCSW00100-070197**		**NTCSW00103-081199**		**NTCSW00200-070197**		**NTCSW00300-070197**		**NTCSW00400-070197**		**NTCSW00500-070197**		**NTCSW00600-070197**		**NTCSW00600-070197-D**		**NTCSW00700-070297**		**NTCSW00900-070297**		**NTCSW01100-082598**		**NTCSW01300-082598**		**NTCSW01600-082598**		**NTCSW01600-082598-D**		**NTCSW01700-082598**	
sample_dat	19970701		19990811		19970701		19970701		19970701		19970701		19970702		19970701		19970702		19970702		19980825		19980825		19980825		19980825		19980825	
qc_type	NM		NM		NM		NM		NM		NM		NM		FD		NM		NM		NM		NM		NM		FD		NM	
sacode	NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL	
matrix	SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW		SW	
duplicate															NTCSW00600-070197												NTCSW01600-082598			
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
SELENIUM	3.7	U	3.5	U	3.7	U	3.7	U	3.7	U	3.7	U	3.7	U	3.7	U	3.7	U	3.7	U	4.8	U	3.1	U	2.4	U	2.3	U	2.7	U
SILVER	2	U	0.6	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
SODIUM	7520		9450	J	5860		6370		2680		6470		16100		14300		16400		20700		5130		30300		5370		5590		20800	
THALLIUM	2	U	0.6	UJ	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	3.9	U	3.9	U	3.9	U	3.9	U	3.9	U
VANADIUM	1.6	U	11.5		1.6	U	1.6	U	1.6	U	1.6	U	9		2		4.5		15		1.4	U	6	U	4	U	4.1	U	2.1	U
ZINC	7.4	U	53.4		6.4	U	10.7	U	10.8	U	7.2	U	27.8		6.1	U	3.8	U	37.9		95.2		117		565		61.7		133	
Herbicides (µg/L)																														
2,4,5-T	0.047	U			0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U
2,4,5-TP (SILVEX)	0.089	U			0.089	U	0.089	U	0.089	U	0.089	U	0.089	U	0.089	U	0.089	U	0.089	U	0.089	U	0.089	U	0.089	U	0.089	U	0.089	U
2,4-D	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	0.19	U	0.19	U	0.19	U
2,4-DB	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	0.2	U	0.2	U	0.2	U
DALAPON	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
DICAMBA	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	0.2	U	0.2	U	0.2	U
DICHLOROPROP	1	U			1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
DINOSEB	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	0.2	U	0.2	U	0.2	U
MCPA	100	U			100	U	100	U	100	U	100	U	100	U	100	U	100	U	100	U	100	U	100	U	100	U	100	U	100	U
MCPP	50	U			50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U
PENTACHLOROPHENOL	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	0.1	U	0.1	U	0.1	U	0.1	U
Petroleum Hydrocarbons (mg/L)																														
DIESEL RANGE ORGANICS	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										
GASOLINE RANGE ORGANICS	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										
TOTAL PETROLEUM HYDROCARBONS																					0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Miscellaneous Parameters (mg/L)																														
ALKALINITY	23.9				24.9		24.4		20.5		21.4		24.4		30.2		19.9		17.1											
CYANIDE																					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
HARDNESS	34.4				28.6		32.5		43.9		51.6		61.1		42		45.8		59.2											
TOTAL DISSOLVED SOLIDS	106				169		153		122		104		223		159		365		166											
TOTAL ORGANIC CARBON																					25.7		58.9		12.6		15.4		7.6	
TOTAL SUSPENDED SOLIDS	9				23		4	U	11		4	U	120		31		85		100											
Miscellaneous Parameters (µg/L)																														
CHLORIDE																														
NITRITE/NITRATE-N																														
SULFATE																														
TOTAL PHOSPHORUS																														
Radiological (pCi/L)																														
GROSS ALPHA	0.36	U	18.1		0.29	U	1.07	J	-0.2	U	1.25	J	7.32	J	3.03	J	-0.04	U	13.7	J	0	U	1.9		0	U	0	U	0	U
GROSS ALPHA UNCERT.																					0.5	U	1.3		0.6	U	0.6	U	1.3	U
GROSS BETA	1.52		14.2		2.21		1.34		0.07	U	0.04	U	6.06		3.69		1.19		7.53		0.1	U	10.7		0.7	U	0	U	18.5	
GROSS BETA UNCERT.																					0.8	U	1.3		0.9	U	0.9	U	1.3	

Notes:

Abbreviations:

L = liter
mg = milligram
µg = microgram
NA = not applicable
pCi = picocurie

Surface Water in Canals

APPENDIX A
CANAL SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

LOCATION	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1
SAMPLE ID	OLD-OU2-LG1_20070115	OLD-OU2-LG1_20070219	OLD-OU2-LG1_20070302	OLD-OU2-LG1_20070403	OLD-OU2-LG1_20070510	OLD-OU2-LG1_20070616	OLD-OU2-LG1_20070720	OLD-OU2-LG1_20070809	OLD-OU2-LG1_20070920	OLD-OU2-LG1_20071018	OLD-OU2-LG1_20071114	OLD-OU2-LG1_20071206	OLD-OU2-LG1_20080118	OLD-OU2-LG1_20080229	OLD-OU2-LG1_20080318	OLD-OU2-LG1_20080407	OLD-OU2-LG1_20080627	OLD-OU2-LG1_20080729	OLD-OU2-LG1_20080729-D	OLD-OU2-LG1_20080826
SAMPLE DATE	20070115	20070219	20070302	20070403	20070510	20070616	20070720	20070809	20070920	20071018	20071114	20071206	20080118	20080215	20080318	20080407	20080627	20080729	20080729	20080826
Volatile Organics (µg/L)																				
1,1,1,2-Tetrachloroethane	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.23 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U				
1,1,1-Trichloroethane	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.42 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.33 U	0.33 U	0.33 U	0.33 U
1,1,2,2-Tetrachloroethane	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.22 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.21 U	0.21 U	0.21 U	0.21 U
1,1,2-Trichloroethane	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.31 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.26 U	0.26 U	0.26 U	0.26 U
1,1-Dichloroethane	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.38 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1-Dichloroethene	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.89 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.54 U	0.54 U	0.54 U	0.54 U
1,1-Dichloropropene	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.4 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U				
1,2,3-Trichlorobenzene	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.98 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U				
1,2,3-Trichloropropane	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				
1,2,4-Trichlorobenzene	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U				
1,2,4-Trimethylbenzene	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.51 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U				
1,2-dibromo-3-Chloropropane	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U				
1,2-Dibromoethane	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.36 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U				
1,2-Dichlorobenzene	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.39 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U				
1,2-Dichloroethane	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.98 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.34 U	0.34 U	0.34 U	0.34 U
1,2-Dichloropropane	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.56 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.21 U	0.21 U	0.21 U	0.21 U
1,3,5-Trimethylbenzene	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.41 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U				
1,3-Dichlorobenzene	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.5 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U				
1,3-Dichloropropane	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				
1,4-Dichlorobenzene	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.41 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U				
2,2-Dichloropropane	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.79 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U				
2-Butanone	1.64 U	1.64 U	1.64 UJ	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	2 U	2 U	2 U	2 U
2-Chloroethyl Vinyl Ether	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ															
2-Chlorotoluene	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.66 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U				
2-Hexanone	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.93 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.35 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U				
4-Isopropyltoluene	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.3 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U				
4-methyl-2-Pentanone	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.32 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	2 U	2 U	2 U	2 U
Acetone	1.18 U	1.18 U	1.18 UJ	1.18 U	1.18 U	10.6 J	1.18 U	4.36	1.18 U	1.18 U	1.18 U	1.18 U	1.18 U	1.18 U	1.18 U	1.18 U	10 U	10 U	10 U	10 U
Acrolein																				
Acrylonitrile																				
Benzene	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.3 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromobenzene	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.53 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U				
Bromochloromethane	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.89 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U				
Bromodichloromethane	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.45 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoform	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.49 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.33 U	0.33 U	0.33 U	0.33 U
Bromomethane	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	0.78 U	0.78 U	0.78 U	0.78 U
Carbon Disulfide	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 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U
Carbon Tetrachloride	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	0.22 U	0.22 U	0.22 U	0.22 U
Chlorobenzene	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.18 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.22 U	0.22 U	0.22 U	0.22 U
Chlorodibromomethane	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.37 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	0.48 U	0.48 U	0.48 U	0.48 U
Chloroform	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.63 J	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	2.56	0.554 U	0.28 U	0.28 U	0.28 U	0.28 U
Chloromethane	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.57 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.61 U	0.61 U	0.61 U	0.61 U
cis-1,2-Dichloroethene	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.36 U	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.46 J	0.75 J	0.369 U	0.369 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.46 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.21 U	0.21 U	0.21 U	0.21 U
Dibromomethane	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.26 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U				
Dichlorodifluoromethane	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.84 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U				
Ethylbenzene	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.33 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.43 U	0.43 U	0.43 U	0.43 U
Hexachlorobutadiene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U				
Isopropylbenzene	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.36 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U				
m+p-Xylenes																				
Methyl Tert-Butyl Ether	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.33 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U				
Methylene Chloride	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.83 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	1 U	1 U	1 U	1 U
n-Butylbenzene	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.31 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U				
n-Propylbenzene	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.66 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U				
Naphthalene	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.45 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U				
O-Xylene																				
Sec-Butylbenzene	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.53 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U				
Styrene	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.2 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.36 U	0.36 U	0.36 U	0.36 U
tert-Butylbenzene	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.77 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U				
Tetrachloroethene	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.38 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.22 U	0.22 U	0.22 U	0.22 U
Toluene	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.25 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.35 U	0.35 U	0.35 U	0.35 U
Total Xylenes	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.43 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	1.2 U	1.2 U	1.2 U	1.2 U
trans-1,2-Dichloroethene	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.24 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.45 U	0.45 U	0.45 U	0.45 U
trans-1,3-Dichloropropene	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.22 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.21 U	0.21 U	0.21 U	0.21 U
Trichloroethene	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.57 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.32 U	0.32 U	0.32 U	0.32 U
Trichlorofluoromethane	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.67 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U				
Vinyl Acetate																				
Vinyl Chloride	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.98 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.3 U	0.3 U	0.3 U	0.3 U
Inorganics (µg/L)																				
Iron																				
Manganese																				

APPENDIX A
CANAL SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

LOCATION	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OLDOU2LG1	OU2SW029	OU2SW029	OU2SW029	OU2SW029	OU2SW029	OU2SW030	OU2SW030	OU2SW030	OU2SW030	OU2SW030	OU2SW031	OU2SW031
SAMPLE ID	OLD-OU2-LG1_20080929	OLD-OU2-LG1_20081030	OLD-OU2-LG1_20081119	OLD-OU2-LG1_20081223	OLD-OU2-LG1_20090116	OLD-OU2-LG1_20090217	OLD-OU2-LG1_20090331	OLD-OU2-LG1_20090427	OLD-OU2-SW29_20070302	OLD-OU2-SW29_20070920	OLD-OU2-SW29_20080318	OLD-OU2-SW29_20081002	OLD-OU2-SW29_20090331	OLD-OU2-SW30_20070302	OLD-OU2-SW30_20070920	OLD-OU2-SW30_20080318	OLD-OU2-SW30_20081002	OLD-OU2-SW30_20090331	OLD-OU2-SW31_20070302	OLD-OU2-SW31_20070920
SAMPLE DATE	20080929	20081030	20081119	20081223	20090116	20090217	20090331	20090427	20070302	20070920	20080318	20081002	20090331	20070302	20070920	20080318	20081002	20090331	20070302	20070920
Volatile Organics (µg/L)																				
1,1,1,2-Tetrachloroethane				0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.236 U	0.236 U	0.236 U		1 U	0.236 U	0.236 U	0.236 U		1 U	0.236 U	0.236 U
1,1,1-Trichloroethane	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1 U	0.33 U	0.424 U	0.424 U	0.424 U	1 U	1 U	0.424 U	0.424 U	0.424 U	1 U	1 U	0.424 U	0.424 U
1,1,2,2-Tetrachloroethane	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	1 U	0.21 U	0.226 U	0.226 U	0.226 U	1 U	1 U	0.226 U	0.226 U	0.226 U	1 U	1 U	0.226 U	0.226 U
1,1,2-Trichloroethane	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.312 U	0.312 U	0.312 U	1 U	1 U	0.312 U	0.312 U	0.312 U	1 U	1 U	0.312 U	0.312 U
1,1-Dichloroethane	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	1 U	0.24 U	0.388 U	0.388 U	0.388 U	1 U	1 U	0.388 U	0.388 U	0.388 U	1 U	1 U	0.388 U	0.388 U
1,1-Dichloroethene	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	1 U	0.54 U	0.899 U	0.899 U	0.899 U	1 U	1 U	0.899 U	0.899 U	0.899 U	1 U	1 U	0.899 U	0.899 U
1,1-Dichloropropene				0.23 U	0.23 U	0.23 U	1 U	0.23 U	0.404 U	0.404 U	0.404 U		1 U	0.404 U	0.404 U	0.404 U		1 U	0.404 U	0.404 U
1,2,3-Trichlorobenzene				0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.981 U	0.981 U	0.981 U		1 U	0.981 U	0.981 U	0.981 U		1 U	0.981 U	0.981 U
1,2,3-Trichloropropane				0.34 U	0.34 U	0.34 U	2 U	0.34 U	0.29 U	0.29 U	0.29 U		2 U	0.29 U	0.29 U	0.29 U		2 U	0.29 U	0.29 U
1,2,4-Trichlorobenzene				0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.73 U	0.73 U	0.73 U		1 U	0.73 U	0.73 U	0.73 U		1 U	0.73 U	0.73 U
1,2,4-Trimethylbenzene				0.22 U	0.22 U	0.22 U	2 U	0.22 U	0.516 U	0.516 U	0.516 U		2 U	0.516 U	0.516 U	0.516 U		2 U	0.516 U	0.516 U
1,2-dibromo-3-Chloropropane				0.32 U	0.32 U	0.32 U	2 U	0.32 U	1.63 U	1.63 U	1.63 U		2 U	1.63 U	1.63 U	1.63 U		2 U	1.63 U	1.63 U
1,2-Dibromoethane				0.28 U	0.28 U	0.28 U	1 U	0.28 U	0.363 U	0.363 U	0.363 U		1 U	0.363 U	0.363 U	0.363 U		1 U	0.363 U	0.363 U
1,2-Dichlorobenzene				0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.394 U	0.394 U	0.394 U		1 U	0.394 U	0.394 U	0.394 U		1 U	0.394 U	0.394 U
1,2-Dichloroethane	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	1 U	0.34 U	0.989 U	0.989 U	0.989 U	1 U	1 U	0.989 U	0.989 U	0.989 U	1 U	1 U	0.989 U	0.989 U
1,2-Dichloropropane	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	1 U	0.21 U	0.563 U	0.563 U	0.563 U	1 U	1 U	0.563 U	0.563 U	0.563 U	1 U	1 U	0.563 U	0.563 U
1,3,5-Trimethylbenzene				0.2 U	0.2 U	0.2 U	2 U	0.2 U	0.416 U	0.416 U	0.416 U		2 U	0.416 U	0.416 U	0.416 U		2 U	0.416 U	0.416 U
1,3-Dichlorobenzene				0.23 U	0.23 U	0.23 U	1 U	0.23 U	0.502 U	0.502 U	0.502 U		1 U	0.502 U	0.502 U	0.502 U		1 U	0.502 U	0.502 U
1,3-Dichloropropane				0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.28 U	0.28 U	0.28 U		1 U	0.28 U	0.28 U	0.28 U		1 U	0.28 U	0.28 U
1,4-Dichlorobenzene				0.22 U	0.22 U	0.22 U	1 U	0.22 U	0.412 U	0.412 U	0.412 U		1 U	0.412 U	0.412 U	0.412 U		1 U	0.412 U	0.412 U
2,2-Dichloropropane				0.28 U	0.28 U	0.28 U	1 U	0.28 U	0.795 U	0.795 U	0.795 U		1 U	0.795 U	0.795 U	0.795 U		1 U	0.795 U	0.795 U
2-Butanone	2 U	2 U	2 U	2 U	2 U	2 U	5 U	2 U	1.64 UJ	1.64 U	1.64 U	5 U	5 U	1.64 UJ	1.64 U	1.64 U	5 U	5 U	1.64 UJ	1.64 U
2-Chloroethyl Vinyl Ether				1 U	1 U	1 U	5 U	1 U	1 UJ				5 U	1 UJ				5 U	1 UJ	
2-Chlorotoluene				0.25 U	0.25 U	0.25 U	1 U	0.25 U	0.661 U	0.661 U	0.661 U		1 U	0.661 U	0.661 U	0.661 U		1 U	0.661 U	0.661 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	0.935 U	0.935 U	0.935 U	10 U	10 U	0.935 U	0.935 U	0.935 U	10 U	10 U	0.935 U	0.935 U
4-Chlorotoluene				0.21 U	0.21 U	0.21 U	1 U	0.21 U	0.357 U	0.357 U	0.357 U		1 U	0.357 U	0.357 U	0.357 U		1 U	0.357 U	0.357 U
4-Isopropyltoluene				0.32 U	0.32 U	0.32 U	1 U	0.32 U	0.303 U	0.303 U	0.303 U		1 U	0.303 U	0.303 U	0.303 U		1 U	0.303 U	0.303 U
4-methyl-2-Pentanone	2 U	2 U	2 U	2 U	2 U	2 U	5 U	2 U	0.323 U	0.323 U	0.323 U	5 U	5 U	0.323 U	0.323 U	0.323 U	5 U	5 U	0.323 U	0.323 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	25 U	10 U	1.18 UJ	1.18 U	1.18 U	25 U	25 U	1.18 UJ	1.18 U	1.18 U	25 U	25 U	1.18 UJ	1.32 V
Acrolein				5 U	5 U	5 U	20 U	5 U					20 U					20 U		
Acrylonitrile				2 U	2 U	2 U	10 U	2 U					10 U					10 U		
Benzene	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	1 U	0.4 U	0.305 U	0.305 U	0.305 U	1 U	1 U	0.305 U	0.305 U	0.305 U	1 U	1 U	0.305 U	0.305 U
Bromobenzene				0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.536 U	0.536 U	0.536 U		1 U	0.536 U	0.536 U	0.536 U		1 U	0.536 U	0.536 U
Bromochloromethane				0.23 U	0.23 U	0.23 U	1 U	0.23 U	0.899 U	0.899 U	0.899 U		1 U	0.899 U	0.899 U	0.899 U		1 U	0.899 U	0.899 U
Bromodichloromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.452 U	0.452 U	0.452 U	1 U	1 U	0.452 U	0.452 U	0.452 U	1 U	1 U	0.69 J	0.452 U
Bromoform	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1 U	0.33 U	0.494 U	0.494 U	0.494 U	1 U	1 U	0.494 U	0.494 U	0.494 U	1 U	1 U	0.494 U	0.494 U
Bromomethane	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	2 U	0.78 U	1.42 U	1.42 U	1.42 U	2 U	2 U	1.42 U	1.42 U	1.42 U	2 U	2 U	1.42 U	1.42 U
Carbon Disulfide	0.4 U	1.2 I	0.4 U	0.4 U	0.4 U	0.4 U	2 U	0.4 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	4.3	2 U	0.5 U	0.5 U
Carbon Tetrachloride	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1 U	0.22 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U
Chlorobenzene	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1 U	0.22 U	0.182 U	0.182 U	0.182 U	1 U	1 U	0.182 U	0.182 U	0.182 U	1 U	1 U	0.182 U	0.182 U
Chlorodibromomethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.374 U	0.374 U	0.374 U	1 U	1 U	0.374 U	0.374 U	0.374 U	1 U	1 U	0.374 U	0.374 U
Chloroethane	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	2 U	0.48 U	1.01 U	1.01 U	1.01 U	2 U	2 U	1.01 U	1.01 U	1.01 U	2 U	2 U	1.01 U	1.01 U
Chloroform	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	1 U	0.28 U	0.554 U	0.554 U	0.554 U	1 U	1 U	0.554 U	0.554 U	0.554 U	1 U	1 U	5.21	1.58
Chloromethane	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	2 U	0.61 U	0.576 U	0.576 U	0.576 U	2 U	2 U	0.576 U	0.576 U	0.576 U	2 U	2 U	0.576 U	0.576 U
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.369 U	0.369 U	0.369 U	1 U	1 U	0.369 U	0.369 U	0.369 U	1 U	1 U	0.369 U	0.369 U
cis-1,3-Dichloropropene	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	1 U	0.21 U	0.465 U	0.465 U	0.465 U	1 U	1 U	0.465 U	0.465 U	0.465 U	1 U	1 U	0.465 U	0.465 U
Dibromomethane				0.3 U	0.3 U	0.3 U	2 U	0.3 U	0.261 U	0.261 U	0.261 U		2 U	0.261 U	0.261 U	0.261 U		2 U	0.261 U	0.261 U
Dichlorodifluoromethane				1 U	1 U	1 U	2 U	1 U	0.844 U	0.844 U	0.844 U		2 U	0.844 U	0.844 U	0.844 U		2 U	0.844 U	0.844 U
Ethylbenzene	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	1 U	0.43 U	0.338 U	0.338 U	0.338 U	1 U	1 U	0.338 U	0.338 U	0.338 U	1 U	1 U	0.338 U	0.338 U
Hexachlorobutadiene				0.69 U	0.69 U	0.69 U	2 U	0.69 U	1.2 U	1.2 U	1.2 U		2 U	1.2 U	1.2 U	1.2 U		2 U	1.2 U	1.2 U
Isopropylbenzene				0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.365 U	0.365 U	0.365 U		1 U	0.365 U	0.365 U	0.365 U		1 U	0.365 U	0.365 U
m+p-Xylenes				0.78 U	0.78 U	0.78 U	2 U	0.78 U					2 U					2 U		
Methyl Tert-Butyl Ether				0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.336 U	0.336 U	0.336 U		1 U	0.336 U	0.336 U	0.336 U		1 U	0.336 U	0.336 U
Methylene Chloride	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	0.834 U	0.834 U	0.834 U	5 U	5 U	0.834 U	0.834 U	0.834 U	5 U	5 U	0.834 U	0.834 U
n-Butylbenzene				0.28 U	0.28 U	0.28 U	1 U	0.28 U	0.319 U	0.319 U	0.319 U		1 U	0.319 U	0.319 U	0.319 U		1 U	0.319 U	0.319 U
n-Propylbenzene				0.25 U	0.25 U	0.25 U	1 U	0.25 U	0.669 U	0.669 U	0.669 U		1 U	0.669 U	0.669 U	0.669 U		1 U	0.669 U	0.669 U
Naphthalene				1 U	1 U	1 U	5 U	1 U	0.452 U	0.452 U	0.452 U		5 U	0.452 U	0.452 U	0.452 U		5 U	0.452 U	0.452 U
O-Xylene				0.37 U	0.37 U	0.37 U	1 U	0.37 U					1 U					1 U		
Sec-Butylbenzene				0.25 U	0.25 U	0.25 U	1 U	0.25 U	0.539 U	0.539 U	0.539 U		1 U	0.539 U	0.539 U	0.539 U		1 U	0.539 U	0.539 U
Styrene	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	1 U	0.36 U	0.203 U	0.203 U	0.203 U	1 U	1 U	0.203 U	0.203 U	0.203 U	1 U	1 U	0.203 U	0.203 U
tert-Butylbenzene				0.32 U	0.32 U	0.32 U	1 U	0.32 U	0.776 U	0.776 U	0.776 U		1 U	0.776 U	0.776 U	0.776 U		1 U	0.776 U	0.776 U
Tetrachloroethene	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1 U	0.22 U	0.381 U	0.381 U	0.381 U	1 U	1 U	0.381 U	0.381 U	0.381 U	1 U	1 U	0.381 U	0.381 U
Toluene	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	1 U	0.35 U	0.257 U	0.257 U	0.257 U	1 U	1 U	0.257 U	0.257 U	0.257 U	1 U	1 U	0.257 U	0.257 U
Total Xylenes	1.2 U	1.2 U	1.2 U						0.433 U	0.433 U	0.433 U	3 U		0.433 U	0.433 U	0.433 U	3 U		0.433 U	0.433 U
trans-1,2-Dichloroethene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	1 U	0.45 U	0.244 U	0.244 U	0.244 U	1 U	1 U	0.244 U	0.244 U	0.244 U	1 U	1 U	0.244 U	0.244 U
trans-1,3-Dichloropropene	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	1 U	0.21 U	0.229 U	0.229 U	0.229 U	1 U	1 U	0.229 U	0.229 U	0.229 U	1 U	1 U	0.229 U	0.229 U
Trichloroethene	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	1 U	0.32 U	0.574 U	0.574 U	0.574 U	1 U	1 U	0.574 U	0.574 U	0.574 U	1 U	1 U	0.574 U	0.574 U
Trichlorofluoromethane				0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.672 U	0.672 U	0.672 U		2 U	0.672 U	0.672 U	0.672 U		2 U	0.672 U	0.672 U
Vinyl Acetate				3.6 U	3.6 U	3.6 U	10 U	3.6 U					10 U					10 U		
Vinyl Chloride	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.986 U	0.986 U	0.986 U	1 U	1 U	0.986 U	0.986 U	0.986 U	1 U	1 U	0.986 U	0.986 U
Inorganics (µg/L)																				
Iron									1930	142	3160	1040	3400	2090	170	1290	5480	2580	509	345
Manganese										1.1	15.9				2.6	8 J				7.4

APPENDIX A
CANAL SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

LOCATION	OU2SW031	OU2SW031	OU2SW031	OU2SW031	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032
SAMPLE ID	OLD-OU2-SW31_20080318	OLD-OU2-SW31_20081002	OLD-OU2-SW31_20090331	OLD-OU2-SW31_20090331-D	OLD-OU2-SW32_20070115	OLD-OU2-SW32_20070219	OLD-OU2-SW32_20070302	OLD-OU2-SW32_20070403	OLD-OU2-SW32_20070510	OLD-OU2-SW32_20070616	OLD-OU2-SW32_20070720	OLD-OU2-SW32_20070809	OLD-OU2-SW32_20070920	OLD-OU2-SW32_20071018	OLD-OU2-SW32_20071114	OLD-OU2-SW32_20071206	OLD-OU2-SW32_20080131	OLD-OU2-SW32_20080229	OLD-OU2-SW32_20080318	OLD-OU2-SW32_20080407
SAMPLE DATE	20080318	20081002	20090331	20090331	20070115	20070219	20070302	20070403	20070510	20070616	20070720	20070809	20070920	20071018	20071114	20071206	20080118	20080215	20080318	20080407
Volatile Organics (µg/L)																				
1,1,1,2-Tetrachloroethane	0.236 U		1 U	1 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.23 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U
1,1,1-Trichloroethane	0.424 U	1 U	1 U	1 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.42 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U
1,1,2,2-Tetrachloroethane	0.226 U	1 U	1 U	1 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.22 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U
1,1,2-Trichloroethane	0.312 U	1 U	1 U	1 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.31 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U
1,1-Dichloroethane	0.388 U	1 U	1 U	1 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.38 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U
1,1-Dichloroethene	0.899 U	1 U	1 U	1 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.89 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U
1,1-Dichloropropene	0.404 U		1 U	1 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.4 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U
1,2,3-Trichlorobenzene	0.981 U		1 U	1 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.98 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U
1,2,3-Trichloropropane	0.29 U		2 U	2 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
1,2,4-Trichlorobenzene	0.73 U		1 U	1 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
1,2,4-Trimethylbenzene	0.516 U		2 U	2 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.51 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U
1,2-dibromo-3-Chloropropane	1.63 U		2 U	2 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U
1,2-Dibromoethane	0.363 U		1 U	1 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.36 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U
1,2-Dichlorobenzene	0.394 U		1 U	1 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.39 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U
1,2-Dichloroethane	0.989 U	1 U	1 U	1 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.98 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U
1,2-Dichloropropane	0.563 U	1 U	1 U	1 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.56 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U
1,3,5-Trimethylbenzene	0.416 U		2 U	2 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.41 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U
1,3-Dichlorobenzene	0.502 U		1 U	1 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.5 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U
1,3-Dichloropropane	0.28 U		1 U	1 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
1,4-Dichlorobenzene	0.412 U		1 U	1 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.41 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U
2,2-Dichloropropane	0.795 U		1 U	1 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.79 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 UJ	0.795 U	0.795 U	0.795 U	0.795 U
2-Butanone	1.64 U	5 U	5 U	5 U	1.64 U	1.64 U	1.64 UJ	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U
2-Chloroethyl Vinyl Ether			5 U	5 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ											
2-Chlorotoluene	0.661 U		1 U	1 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.66 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U
2-Hexanone	0.935 U	10 U	10 U	10 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.93 U	0.935 U	0.935 U	0.935 U	0.935 UJ	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U
4-Chlorotoluene	0.357 U		1 U	1 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.35 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U
4-Isopropyltoluene	0.303 U		1 U	1 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.3 U	0.303 U	0.303 U	0.36	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U
4-methyl-2-Pentanone	0.323 U	5 U	5 U	5 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.32 U	0.323 U	0.323 U	0.323 U	0.323 UJ	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U
Acetone	1.18 U	25 U	25 U	25 U	1.18 U	1.18 U	3.16 J	1.18 U	1.18 U	4.42 J	1.18 U	1.18 U	1.18 U	1.18 UJ	1.18 U	1.18 UJ	1.18 U	1.18 U	1.18 U	1.18 U
Acrolein			20 U	20 U																
Acrylonitrile			10 U	10 U																
Benzene	0.305 U	1 U	1 U	1 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.3 U	0.305 U	0.305 U	0.305 U	1.57	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U
Bromobenzene	0.536 U		1 U	1 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.53 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U
Bromochloromethane	0.899 U		1 U	1 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.89 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U
Bromodichloromethane	0.452 U	1 U	1 U	1 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.45 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U
Bromoform	0.494 U	1 U	1 U	1 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.49 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U
Bromomethane	1.42 U	2 U	2 U	2 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U
Carbon Disulfide	0.5 U	11.7 J	2 U	2 U	0.5 U	0.5 U	0.6 J	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 UJ	0.5 U	0.5 U
Carbon Tetrachloride	0.5 U	1 U	1 U	1 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
Chlorobenzene	0.182 U	1 U	1 U	1 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.18 U	0.182 U	0.182 U	0.182 U	1.28	0.182 U	0.36 J	0.36 J	0.182 U	0.182 U	0.182 U
Chlorodibromomethane	0.374 U	1 U	1 U	1 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.37 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U
Chloroethane	1.01 U	2 U	2 U	2 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U
Chloroform	0.554 U	1 U	1 U	1 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.55 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U
Chloromethane	0.576 U	2 U	2 U	2 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.57 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U
cis-1,2-Dichloroethene	0.369 U	1 U	1 U	1 U	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.36 U	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.369 U	0.96 J
cis-1,3-Dichloropropene	0.465 U	1 U	1 U	1 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.46 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U
Dibromomethane	0.261 U		2 U	2 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.26 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U
Dichlorodifluoromethane	0.844 U		2 U	2 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.84 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U
Ethylbenzene	0.338 U	1 U	1 U	1 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.33 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U
Hexachlorobutadiene	1.2 U		2 U	2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 UJ	1.2 U	1.2 U	1.2 U	1.2 U
Isopropylbenzene	0.365 U		1 U	1 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.36 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U
m+p-Xylenes			2 U	2 U																
Methyl Tert-Butyl Ether	0.336 U		1 U	1 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.33 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U
Methylene Chloride	0.834 U	5 U	5 U	5 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.83 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U
n-Butylbenzene	0.319 U		1 U	1 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.31 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U
n-Propylbenzene	0.669 U		1 U	1 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.66 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U
Naphthalene	0.452 U		5 U	5 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.45 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U
O-Xylene			1 U	1 U																
Sec-Butylbenzene	0.539 U		1 U	1 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.53 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U
Styrene	0.203 U	1 U	1 U	1 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.2 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 UJ	0.203 U	0.203 U	0.203 U	0.203 U
tert-Butylbenzene	0.776 U		1 U	1 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.77 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U
Tetrachloroethene	0.381 U	1 U	1 U	1 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.38 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U
Toluene	0.257 U	1 U	1 U	1 U	1.02	0.257 U	0.43 J	0.54 J	0.31 J	0.52	0.257 U	0.29 I	0.257 U	0.54 J	0.257 U	0.49 J	27	0.257 U	0.257 U	0.257 U
Total Xylenes	0.433 U	3 U			0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.43 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U
trans-1,2-Dichloroethene	0.244 U	1 U	1 U	1 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.24 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
trans-1,3-Dichloropropene	0.229 U	1 U	1 U	1 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.22 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U
Trichloroethene	0.574 U	1 U	1 U	1 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.57 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.574 U	0.79 J
Trichlorofluoromethane	0.672 U		2 U	2 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.67 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U
Vinyl Acetate			10 U	10 U																
Vinyl Chloride	0.986 U	1 U	1 U	1 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.98 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U	0.986 U
Inorganics (µg/L)																				
Iron	353	632	2000	2000			39600			1570			2130			10400			10400	
Manganese	3.3 J												24.4						105	

APPENDIX A
CANAL SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

LOCATION	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW032	OU2SW033	OU2SW033	OU2SW033	OU2SW033	OU2SW033	OU2SW034	OU2SW034
SAMPLE ID	OLD-OU2-SW32_20080627	OLD-OU2-SW32_20080729	OLD-OU2-SW32_20080826	OLD-OU2-SW32_20080826-D	OLD-OU2-SW32_20080929	OLD-OU2-SW32_20081030	OLD-OU2-SW32_20081030-D	OLD-OU2-SW32_20081119	OLD-OU2-SW32_20081223	OLD-OU2-SW32_20081223-D	OLD-OU2-SW32_20090116	OLD-OU2-SW32_20090217	OLD-OU2-SW32_20090326	OLD-OU2-SW33_20070302	OLD-OU2-SW33_20070920	OLD-OU2-SW33_20080318	OLD-OU2-SW33_20081002	OLD-OU2-SW33_20090326	OLD-OU2-SW34_20070302	OLD-OU2-SW34_20070920
SAMPLE DATE	20080627	20080729	20080826	20080826	20080929	20081030	20081030	20081119	20081223	20081223	20090116	20090217	20090326	20070302	20070920	20080318	20081002	20090326	20070302	20070920
Volatile Organics (µg/L)																				
1,1,1,2-Tetrachloroethane									0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.236 U	0.236 U	0.236 U		1 U	0.236 U	0.236 U
1,1,1-Trichloroethane	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	1 U	0.424 U	0.424 U	0.424 U	1 U	1 U	0.424 U	0.424 U
1,1,2,2-Tetrachloroethane	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	1 U	0.226 U	0.226 U	0.226 U	1 U	1 U	0.226 U	0.226 U
1,1,2-Trichloroethane	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	0.26 U	1 U	0.312 U	0.312 U	0.312 U	1 U	1 U	0.312 U	0.312 U
1,1-Dichloroethane	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	1 U	0.388 U	0.388 U	0.388 U	1 U	1 U	0.388 U	0.388 U
1,1-Dichloroethene	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	1 U	0.899 U	0.899 U	0.899 U	1 U	1 U	0.899 U	0.899 U
1,1-Dichloropropene									0.23 U	0.23 U	0.23 U	0.23 U	1 U	0.404 U	0.404 U	0.404 U		1 U	0.404 U	0.404 U
1,2,3-Trichlorobenzene									0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.981 U	0.981 U	0.981 U		1 U	0.981 U	0.981 U
1,2,3-Trichloropropane									0.34 U	0.34 U	0.34 U	0.34 U	2 U	0.29 U	0.29 U	0.29 U		2 U	0.29 U	0.29 U
1,2,4-Trichlorobenzene									0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.73 U	0.73 U	0.73 U		1 U	0.73 U	0.73 U
1,2,4-Trimethylbenzene									0.22 U	0.22 U	0.22 U	0.22 U	2 U	0.516 U	0.516 U	0.516 U		2 U	0.516 U	0.516 U
1,2-dibromo-3-Chloropropane									0.32 U	0.32 U	0.32 U	0.32 U	2 U	1.63 U	1.63 U	1.63 U		2 U	1.63 U	1.63 U
1,2-Dibromoethane									0.28 U	0.28 U	0.28 U	0.28 U	1 U	0.363 U	0.363 U	0.363 U		1 U	0.363 U	0.363 U
1,2-Dichlorobenzene									0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.394 U	0.394 U	0.394 U		1 U	0.394 U	0.394 U
1,2-Dichloroethane	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	1 U	0.989 U	0.989 U	0.989 U	1 U	1 U	0.989 U	0.989 U
1,2-Dichloropropane	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	1 U	0.563 U	0.563 U	0.563 U	1 U	1 U	0.563 U	0.563 U
1,3,5-Trimethylbenzene									0.2 U	0.2 U	0.2 U	0.2 U	2 U	0.416 U	0.416 U	0.416 U		2 U	0.416 U	0.416 U
1,3-Dichlorobenzene									0.23 U	0.23 U	0.23 U	0.23 U	1 U	0.502 U	0.502 U	0.502 U		1 U	0.502 U	0.502 U
1,3-Dichloropropane									0.26 U	0.26 U	0.26 U	0.26 U	1 U	0.28 U	0.28 U	0.28 U		1 U	0.28 U	0.28 U
1,4-Dichlorobenzene									0.44 I	0.47 I	0.62 I	0.22 U	0.58 I	0.412 U	0.412 U	0.412 U		1 U	0.412 U	0.412 U
2,2-Dichloropropane									0.28 U	0.28 U	0.28 U	0.28 U	1 U	0.795 U	0.795 U	0.795 U		1 U	0.795 U	0.795 U
2-Butanone	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	1.64 UJ	1.64 U	1.64 U	5 U	5 U	1.64 UJ	1.64 U
2-Chloroethyl Vinyl Ether									1 U	1 U	1 U	1 U	5 U	1 UJ				5 U	1 UJ	
2-Chlorotoluene									0.25 U	0.25 U	0.25 U	0.25 U	1 U	0.661 U	0.661 U	0.661 U		1 U	0.661 U	0.661 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	0.935 U	0.935 U	0.935 U	10 U	10 U	0.935 U	0.935 U
4-Chlorotoluene									0.21 U	0.21 U	0.21 U	0.21 U	1 U	0.357 U	0.357 U	0.357 U		1 U	0.357 U	0.357 U
4-Isopropyltoluene									0.32 U	0.32 U	0.32 U	0.32 U	1 U	0.32 J	0.303 U	0.303 U		1 U	0.303 U	0.303 U
4-methyl-2-Pentanone	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	1.48	0.323 U	0.323 U	5 U	5 U	0.323 U	0.323 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	25 U	1.18 UJ	3.24 V	1.18 U	25 U	11 I	1.18 UJ	2.42 V
Acrolein									5 U	5 U	5 U	5 U	20 U					20 U		
Acrylonitrile									2 U	2 U	2 U	2 U	10 U					10 U		
Benzene	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	1 U	0.305 U	0.305 U	0.305 U	1 U	1 U	0.305 U	0.305 U
Bromobenzene									0.26 U	0.26 U	0.26 U	0.26 U	1 U	0.536 U	0.536 U	0.536 U		1 U	0.536 U	0.536 U
Bromochloromethane									0.23 U	0.23 U	0.23 U	0.23 U	1 U	0.899 U	0.899 U	0.899 U		1 U	0.899 U	0.899 U
Bromodichloromethane	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	0.2 U	1 U	0.452 U	0.452 U	0.452 U	1 U	1 U	0.452 U	0.452 U
Bromoform	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	1 U	0.494 U	0.494 U	0.494 U	1 U	1 U	0.494 U	0.494 U
Bromomethane	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	2 U	1.42 U	1.42 U	1.42 U	2 U	2 U	1.42 U	1.42 U
Carbon Disulfide	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.54 I	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	2 U	0.5 U	0.5 U	0.5 U	34.2 J	2 U	0.52 J	0.5 U
Carbon Tetrachloride	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	1 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U
Chlorobenzene	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.29 I	0.22 U	0.22 U	0.87 I	0.22 U	0.82 I	0.182 U	0.182 U	0.182 U	0.82 I	1 U	0.182 U	0.182 U
Chlorodibromomethane	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	0.2 U	1 U	0.374 U	0.374 U	0.374 U	1 U	1 U	0.374 U	0.374 U
Chloroethane	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	0.48 U	2 U	1.01 U	1.01 U	1.01 U	2 U	2 U	1.01 U	1.01 U
Chloroform	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	1 U	0.554 U	0.554 U	0.554 U	1 U	1 U	0.554 U	0.554 U
Chloromethane	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	0.61 U	2 U	0.576 U	0.576 U	0.576 U	2 U	2 U	0.576 U	0.576 U
cis-1,2-Dichloroethene	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	0.2 U	1 U	0.369 U	0.369 U	0.369 U	1 U	1 U	0.369 U	0.369 U
cis-1,3-Dichloropropene	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	1 U	0.465 U	0.465 U	0.465 U	1 U	1 U	0.465 U	0.465 U
Dibromomethane									0.3 U	0.3 U	0.3 U	0.3 U	2 U	0.261 U	0.261 U	0.261 U		2 U	0.261 U	0.261 U
Dichlorodifluoromethane									1 U	1 U	1 U	1 U	2 U	0.844 U	0.844 U	0.844 U		2 U	0.844 U	0.844 U
Ethylbenzene	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	0.43 U	1 U	0.338 U	0.338 U	0.338 U	1 U	1 U	0.338 U	0.338 U
Hexachlorobutadiene									0.69 U	0.69 U	0.69 U	0.69 U	2 U	1.2 U	1.2 U	1.2 U		2 U	1.2 U	1.2 U
Isopropylbenzene									0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.365 U	0.365 U	0.365 U		1 U	0.365 U	0.365 U
m+p-Xylenes									0.78 U	0.78 U	0.78 U	0.78 U	2 U					2 U		
Methyl Tert-Butyl Ether									0.26 U	0.26 U	0.26 U	0.26 U	1 U	0.336 U	0.336 U	0.336 U		1 U	0.336 U	0.336 U
Methylene Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	0.834 U	0.834 U	0.834 U	5 U	5 U	0.834 U	0.834 U
n-Butylbenzene									0.28 U	0.28 U	0.28 U	0.28 U	1 U	0.319 U	0.319 U	0.319 U		1 U	0.319 U	0.319 U
n-Propylbenzene									0.25 U	0.25 U	0.25 U	0.25 U	1 U	0.669 U	0.669 U	0.669 U		1 U	0.669 U	0.669 U
Naphthalene									1 U	1 U	1 U	1 U	5 U	0.452 U	0.452 U	0.452 U		5 U	0.452 U	0.452 U
O-Xylene									0.37 U	0.37 U	0.37 U	0.37 U	1 U					1 U		
Sec-Butylbenzene									0.25 U	0.25 U	0.25 U	0.25 U	1 U	0.539 U	0.539 U	0.539 U		1 U	0.539 U	0.539 U
Styrene	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	1 U	0.203 U	0.203 U	0.203 U	1 U	1 U	0.203 U	0.203 U
tert-Butylbenzene									0.32 U	0.32 U	0.32 U	0.32 U	1 U	0.776 U	0.776 U	0.776 U		1 U	0.776 U	0.776 U
Tetrachloroethene	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	1 U	0.381 U	0.41	0.381 U	1 U	1 U	0.381 U	0.381 U
Toluene	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.86 I	0.35 U	0.35 U	2.6	0.35 U	4	0.81 J	0.257 U	0.257 U	1 U	1 U	0.46 J	0.257 U
Total Xylenes	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U						0.433 U	0.433 U	0.433 U	3 U		0.433 U	0.433 U
trans-1,2-Dichloroethene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	1 U	0.244 U	0.244 U	0.244 U	1 U	1 U	0.244 U	0.244 U
trans-1,3-Dichloropropene	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	1 U	0.229 U	0.229 U	0.229 U	1 U	1 U	0.229 U	0.229 U
Trichloroethene	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	1 U	0.574 U	0.574 U	0.574 U	1 U	1 U	0.82 J	0.58
Trichlorofluoromethane									0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.672 U	0.672 U	0.672 U		2 U	0.672 U	0.672 U
Vinyl Acetate									3.6 U	3.6 U	3.6 U	3.6 U	10 U					10 U		
Vinyl Chloride	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	1 U	0.986 U	0.986 U	0.986 U	1 U	1 U	0.986 U	0.986 U
Inorganics (µg/L)																				
Iron	359				9880				2530	7850			14700	13000	356	244	2670	1850	14800	531
Manganese															2.2	2 U				2.2

APPENDIX A
CANAL SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

LOCATION	OU2SW034	OU2SW034	OU2SW034	OU2SW034	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035
SAMPLE ID	OLD-OU2-SW34_20080318	OLD-OU2-SW34_20081002	OLD-OU2-SW34_20090326	OLD-OU2-SW34_20090326-D	OLD-OU2-SW35_20070115	OLD-OU2-SW35_20070219	OLD-OU2-SW35_20070302	OLD-OU2-SW35_20070403	OLD-OU2-SW35_20070510	OLD-OU2-SW35_20070616	OLD-OU2-SW35_20070720	OLD-OU2-SW35_20070809	OLD-OU2-SW35_20070920	OLD-OU2-SW35_20071018	OLD-OU2-SW35_20071114	OLD-OU2-SW35_20071206	OLD-OU2-SW35_20080131	OLD-OU2-SW35_20080229	OLD-OU2-SW35_20080318	OLD-OU2-SW35_20080407
SAMPLE DATE	20080318	20081002	20090326	20090326	20070115	20070219	20070302	20070403	20070510	20070616	20070720	20070809	20070920	20071018	20071114	20071206	20080118	20080215	20080318	20080407
Volatile Organics (µg/L)																				
1,1,1,2-Tetrachloroethane	0.236 U		1 U	1 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.23 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U	0.236 U
1,1,1-Trichloroethane	0.424 U	1 U	1 U	1 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.42 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U	0.424 U
1,1,2,2-Tetrachloroethane	0.226 U	1 U	1 U	1 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.22 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U
1,1,2-Trichloroethane	0.312 U	1 U	1 U	1 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.31 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U	0.312 U
1,1-Dichloroethane	0.388 U	1 U	1 U	1 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.38 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U	0.388 U
1,1-Dichloroethene	0.899 U	1 U	1 U	1 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.89 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U
1,1-Dichloropropene	0.404 U		1 U	1 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.4 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U	0.404 U
1,2,3-Trichlorobenzene	0.981 U		1 U	1 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.98 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U	0.981 U
1,2,3-Trichloropropane	0.29 U		2 U	2 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
1,2,4-Trichlorobenzene	0.73 U		1 U	1 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
1,2,4-Trimethylbenzene	0.516 U		2 U	2 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.51 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U	0.516 U
1,2-dibromo-3-Chloropropane	1.63 U		2 U	2 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U	1.63 U
1,2-Dibromoethane	0.363 U		1 U	1 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.36 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U	0.363 U
1,2-Dichlorobenzene	0.394 U		1 U	1 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.39 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U	0.394 U
1,2-Dichloroethane	0.989 U	1 U	1 U	1 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.98 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U	0.989 U
1,2-Dichloropropane	0.563 U	1 U	1 U	1 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.56 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U	0.563 U
1,3,5-Trimethylbenzene	0.416 U		2 U	2 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.41 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U	0.416 U
1,3-Dichlorobenzene	0.502 U		1 U	1 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.5 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U
1,3-Dichloropropane	0.28 U		1 U	1 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
1,4-Dichlorobenzene	0.412 U		1 U	1 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.41 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U	0.412 U
2,2-Dichloropropane	0.795 U		1 U	1 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.79 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U	0.795 U
2-Butanone	1.64 U	5 U	5 U	5 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U	1.64 U
2-Chloroethyl Vinyl Ether			5 U	5 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ											
2-Chlorotoluene	0.661 U		1 U	1 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.66 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U	0.661 U
2-Hexanone	0.935 U	10.5 J	10 U	10 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.93 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U	0.935 U
4-Chlorotoluene	0.357 U		1 U	1 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.35 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U	0.357 U
4-Isopropyltoluene	0.303 U		1 U	1 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.3 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U
4-methyl-2-Pentanone	0.323 U	5 U	5 U	5 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.32 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U	0.323 U
Acetone	1.18 U	17.9 I	11 I	10 I	1.18 U	1.76 J	1.18 U	1.18 U	1.18 U	6.9 J	1.18 U	1.18 U	1.18 U	1.18 U	1.32 J	1.18 U	1.18 U	1.18 U	1.18 U	1.18 U
Acrolein			20 U	20 U																
Acrylonitrile			10 U	10 U																
Benzene	0.305 U	1 U	1 U	1 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.3 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U	0.305 U
Bromobenzene	0.536 U		1 U	1 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.53 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U	0.536 U
Bromochloromethane	0.899 U		1 U	1 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.89 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U
Bromodichloromethane	0.452 U	1 U	1 U	1 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.45 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U
Bromoform	0.494 U	1 U	1 U	1 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.49 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U	0.494 U
Bromomethane	1.42 U	2 U	2 U	2 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U
Carbon Disulfide	0.5 U	0.63 I	2 U	2 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 UJ	0.5 U	0.5 U
Carbon Tetrachloride	0.5 U	1 U	1 U	1 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
Chlorobenzene	0.182 U	1 U	1 U	1 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.18 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U
Chlorodibromomethane	0.374 U	1 U	1 U	1 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.37 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U	0.374 U
Chloroethane	1.01 U	2 U	2 U	2 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U	1.01 U
Chloroform	0.554 U	1 U	1 U	1 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.55 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U	0.554 U
Chloromethane	0.576 U	0.63 I	2 U	2 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.57 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U	0.576 U
cis-1,2-Dichloroethene	2.05	1 U	1 U	1 U	4.04	3.45	4.54	2.81	3.91	2.63	3.87	33.7	0.369 U	0.56 J	11.2	0.369 U	21.9	5.04	2.7	0.369 U
cis-1,3-Dichloropropene	0.465 U	1 U	1 U	1 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.46 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U	0.465 U
Dibromomethane	0.261 U		2 U	2 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.26 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U	0.261 U
Dichlorodifluoromethane	0.844 U		2 U	2 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.84 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U	0.844 U
Ethylbenzene	0.338 U	1 U	1 U	1 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.33 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U	0.338 U
Hexachlorobutadiene	1.2 U		2 U	2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Isopropylbenzene	0.365 U		1 U	1 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.36 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U	0.365 U
m+p-Xylenes			2 U	2 U																
Methyl Tert-Butyl Ether	0.336 U		1 U	1 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.33 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U	0.336 U
Methylene Chloride	0.834 U	5 U	5 U	5 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.83 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U	0.834 U
n-Butylbenzene	0.319 U		1 U	1 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.31 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U
n-Propylbenzene	0.669 U		1 U	1 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.66 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U	0.669 U
Naphthalene	0.452 U		5 U	5 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.45 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U	0.452 U
O-Xylene			1 U	1 U																
Sec-Butylbenzene	0.539 U		1 U	1 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.53 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U	0.539 U
Styrene	0.203 U	1 U	1 U	1 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.2 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U
tert-Butylbenzene	0.776 U		1 U	1 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.77 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U
Tetrachloroethene	0.381 U	1 U	1 U	1 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.38 U	0.381 U	0.64 I	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U
Toluene	0.3 J	1 U	1 U	1 U	0.257 U	0.257 U	0.257 U	0.74 J	0.257 U	1.02	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U	0.257 U
Total Xylenes	0.433 U	3 U			0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.43 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U
trans-1,2-Dichloroethene	0.244 U	1 U	1 U	1 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.24 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
trans-1,3-Dichloropropene	0.229 U	1 U	1 U	1 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.22 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U	0.229 U
Trichloroethene	1.01	1 U	1 U	1 U	4.63	3.38	2.63	0.574 U	1.35	4.27	6.41	44.8	0.574 U	0.574 U	3.17	0.574 U	5.64	4	5.13	0.574 U
Trichlorofluoromethane	0.672 U		2 U	2 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.67 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U	0.672 U
Vinyl Acetate			10 U	10 U																
Vinyl Chloride	0.986 U	1 U	1 U	1 U	0.986 U	0.986 U	0.986 U	0.986 U	1.54	0.98 U	0.986 U	1.54	0.986 U	0.986 U	0.986 U	0.986 U	1.83	0.986 U	0.986 U	0.986 U
Inorganics (µg/L)																				
Iron	1080	163000	20400	32700			8330			2020			251			930			624	
Manganese	6.2 J												1.7						6.1 J	

APPENDIX A
CANAL SURFACE WATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

LOCATION	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW035	OU2SW036	OU2SW036	OU2SW036	OU2SW036	OU2SW036
SAMPLE ID	OLD-OU2-SW35_20080627	OLD-OU2-SW35_20080729	OLD-OU2-SW35_20080826	OLD-OU2-SW35_20080929	OLD-OU2-SW35_20081030	OLD-OU2-SW35_20081119	OLD-OU2-SW35_20081223	OLD-OU2-SW35_20090116	OLD-OU2-SW35_20090217	OLD-OU2-SW35_20090326	OLD-OU2-SW35_20090427	OLD-OU2-SW36_20070302	OLD-OU2-SW36_20070920	OLD-OU2-SW36_20080318	OLD-OU2-SW36_20081002	OLD-OU2-SW36_20090331
SAMPLE DATE	20080627	20080729	20080826	20080929	20081030	20081119	20081223	20090116	20090217	20090326	20090427	20070302	20070920	20080318	20081002	20090331
Volatile Organics (µg/L)																
1,1,1,2-Tetrachloroethane							0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.236 U	0.236 U	0.236 U		1 U
1,1,1-Trichloroethane	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 U	0.33 U	0.424 U	0.424 U	0.424 U	1 U	1 U
1,1,2,2-Tetrachloroethane	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 U	0.21 U	0.226 U	0.226 U	0.226 U	1 U	1 U
1,1,2-Trichloroethane	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 U	0.26 U	0.312 U	0.312 U	0.312 U	1 U	1 U
1,1-Dichloroethane	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	1 U	0.24 U	0.388 U	0.388 U	0.388 U	1 U	1 U
1,1-Dichloroethene	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	1 U	0.54 U	0.899 U	0.899 U	0.899 U	1 U	1 U
1,1-Dichloropropene							0.23 U	0.23 U	0.23 U	1 U	0.23 U	0.404 U	0.404 U	0.404 U		1 U
1,2,3-Trichlorobenzene							0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.981 U	0.981 U	0.981 U		1 U
1,2,3-Trichloropropane							0.34 U	0.34 U	0.34 U	2 U	0.34 U	0.29 U	0.29 U	0.29 U		2 U
1,2,4-Trichlorobenzene							0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.73 U	0.73 U	0.73 U		1 U
1,2,4-Trimethylbenzene							0.22 U	0.22 U	0.22 U	2 U	0.22 U	0.516 U	0.516 U	0.516 U		2 U
1,2-dibromo-3-Chloropropane							0.32 U	0.32 U	0.32 U	2 U	0.32 U	1.63 U	1.63 U	1.63 U		2 U
1,2-Dibromoethane							0.28 U	0.28 U	0.28 U	1 U	0.28 U	0.363 U	0.363 U	0.363 U		1 U
1,2-Dichlorobenzene							0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.394 U	0.394 U	0.394 U		1 U
1,2-Dichloroethane	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 U	0.34 U	0.989 U	0.989 U	0.989 U	1 U	1 U
1,2-Dichloropropane	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 U	0.21 U	0.563 U	0.563 U	0.563 U	1 U	1 U
1,3,5-Trimethylbenzene							0.2 U	0.2 U	0.2 U	2 U	0.2 U	0.416 U	0.416 U	0.416 U		2 U
1,3-Dichlorobenzene							0.23 U	0.23 U	0.23 U	1 U	0.23 U	0.502 U	0.502 U	0.502 U		1 U
1,3-Dichloropropane							0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.28 U	0.28 U	0.28 U		1 U
1,4-Dichlorobenzene							0.22 U	0.22 U	0.22 U	1 U	0.22 U	0.412 U	0.412 U	0.412 U		1 U
2,2-Dichloropropane							0.28 U	0.28 U	0.28 U	1 U	0.28 U	0.795 U	0.795 U	0.795 U		1 U
2-Butanone	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	2 U	1.64 U	1.64 U	1.64 U	5 U	5 U
2-Chloroethyl Vinyl Ether							1 U	1 U	1 U	5 U	1 U	1 UJ				5 U
2-Chlorotoluene							0.25 U	0.25 U	0.25 U	1 U	0.25 U	0.661 U	0.661 U	0.661 U		1 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	0.935 U	0.935 U	0.935 U	10 U	10 U
4-Chlorotoluene							0.21 U	0.21 U	0.21 U	1 U	0.21 U	0.357 U	0.357 U	0.357 U		1 U
4-Isopropyltoluene							0.32 U	0.32 U	0.32 U	1 U	0.32 U	0.303 U	0.303 U	0.303 U		1 U
4-methyl-2-Pentanone	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	2 U	0.323 U	0.323 U	0.323 U	5 U	5 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	25 U	10 U	1.18 U	2.26 V	1.18 U	25 U	25 U
Acrolein							5 U	5 U	5 U	20 U	5 U					20 U
Acrylonitrile							2 U	2 U	2 U	10 U	2 U					10 U
Benzene	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	1 U	0.4 U	0.305 U	0.305 U	0.305 U	1 U	1 U
Bromobenzene							0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.536 U	0.536 U	0.536 U		1 U
Bromochloromethane							0.23 U	0.23 U	0.23 U	1 U	0.23 U	0.899 U	0.899 U	0.899 U		1 U
Bromodichloromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.23 I	0.24 I	0.2 U	1 U	0.2 U	0.452 U	0.452 U	0.452 U	1 U	1 U
Bromoform	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 U	0.33 U	0.494 U	0.494 U	0.494 U	1 U	1 U
Bromomethane	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	2 U	0.78 U	1.42 U	1.42 U	1.42 U	2 U	2 U
Carbon Disulfide	0.4 U	0.4 U	0.4 U	0.4 U	2.8	0.4 U	0.4 U	0.4 U	0.4 U	2 U	0.4 U	0.5 U	0.5 U	0.5 U	2 U	2 U
Carbon Tetrachloride	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 U	0.22 U	0.5 U	0.5 U	0.5 U	1 U	1 U
Chlorobenzene	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 U	0.22 U	0.182 U	0.182 U	0.182 U	1 U	1 U
Chlorodibromomethane	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 U	0.2 U	0.374 U	0.374 U	0.374 U	1 U	1 U
Chloroethane	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 U	0.48 U	1.01 U	1.01 U	1.01 U	2 U	2 U
Chloroform	1.2	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	2.9	4.1	0.28 U	1 U	0.28 U	0.554 U	0.554 U	0.554 U	1 U	1 U
Chloromethane	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	2 U	0.61 U	0.576 U	0.576 U	0.576 U	2 U	2 U
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2	0.2 U	0.64 I	0.2 U	1 U	0.2 U	0.7 J	0.369 U	1.52	1 U	0.96 I
cis-1,3-Dichloropropene	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 U	0.21 U	0.465 U	0.465 U	0.465 U	1 U	1 U
Dibromomethane							0.3 U	0.3 U	0.3 U	2 U	0.3 U	0.261 U	0.261 U	0.261 U		2 U
Dichlorodifluoromethane							1 U	1 U	1 U	2 U	1 U	0.844 U	0.844 U	0.844 U		2 U
Ethylbenzene	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	1 U	0.43 U	0.338 U	0.338 U	0.338 U	1 U	1 U
Hexachlorobutadiene							0.69 U	0.69 U	0.69 U	2 U	0.69 U	1.2 U	1.2 U	1.2 U		2 U
Isopropylbenzene							0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.365 U	0.365 U	0.365 U		1 U
m+p-Xylenes							0.78 U	0.78 U	0.78 U	2 U	0.78 U					2 U
Methyl Tert-Butyl Ether							0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.336 U	0.336 U	0.336 U		1 U
Methylene Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	0.834 U	0.834 U	0.834 U	5 U	5 U
n-Butylbenzene							0.28 U	0.28 U	0.28 U	1 U	0.28 U	0.319 U	0.319 U	0.319 U		1 U
n-Propylbenzene							0.25 U	0.25 U	0.25 U	1 U	0.25 U	0.669 U	0.669 U	0.669 U		1 U
Naphthalene							1 U	1 U	1 U	5 U	1 U	0.452 U	0.452 U	0.452 U		5 U
O-Xylene							0.37 U	0.37 U	0.37 U	1 U	0.37 U					1 U
Sec-Butylbenzene							0.25 U	0.25 U	0.25 U	1 U	0.25 U	0.539 U	0.539 U	0.539 U		1 U
Styrene	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	1 U	0.36 U	0.203 U	0.203 U	0.203 U	1 U	1 U
tert-Butylbenzene							0.32 U	0.32 U	0.32 U	1 U	0.32 U	0.776 U	0.776 U	0.776 U		1 U
Tetrachloroethene	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 U	0.22 U	0.381 U	0.381 U	0.381 U	1 U	1 U
Toluene	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	1 U	0.35 U	0.257 U	0.257 U	0.257 U	1 U	1 U
Total Xylenes	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U						0.433 U	0.433 U	0.433 U	3 U	
trans-1,2-Dichloroethene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	1 U	0.45 U	0.244 U	0.244 U	0.244 U	1 U	1 U
trans-1,3-Dichloropropene	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 U	0.21 U	0.229 U	0.229 U	0.229 U	1 U	1 U
Trichloroethene	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	1.5	0.32 U	0.52 I	0.32 U	1 U	0.32 U	1.33	0.574 U	1.03	1 U	1 U
Trichlorofluoromethane							0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.672 U	0.672 U	0.672 U		2 U
Vinyl Acetate							3.6 U	3.6 U	3.6 U	10 U	3.6 U					10 U
Vinyl Chloride	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 U	0.3 U	0.986 U	0.986 U	0.986 U	1 U	1 U
Inorganics (µg/L)																
Iron	373			1190			842			2940		1500	1160	1230	18700	914
Manganese													2.8	6.5 J		

Notes:

Abbreviations:
L = liter
µg = microgram

Qualifiers:
I = between the laboratory detection limit and the laboratory practical quantitation limit
J = estimated
U = not detected

Sediment in Ponds

APPENDIX A
POND SEDIMENT DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW001		OU2SW001	OU2SW002		OU2SW003		OU2SW004		OU2SW006		OU2SW006		OU2SW007		OU2SW009		OU2SW011		OU2SW013		OU2SW016		OU2SW016		OU2SW017	
nsample	NTCSD00100		NTCSD00103	NTCSD00200		NTCSD00300		NTCSD00400		NTCSD00600		NTCSD00600-D		NTCSD00700		NTCSD00900		NTCSD01100		NTCSD01300		NTCSD01600		NTCSD01600-D		NTCSD01700	
sample_dat	19970701		19990811	19970701		19970701		19970701		19970702		19970701		19970702		19970702		19980825		19980825		19980825		19980825		19980825	
qc_type	NM		NM	NM		NM		NM		NM		FD		NM		NM		NM		NM		NM		FD		NM	
sacode	NORMAL		NORMAL	NORMAL		NORMAL		NORMAL		NORMAL		DUP		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL	
matrix	SD		SD	SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD	
top_depth	-9999		-9999	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Volatile Organics (µg/kg)																											
1,1,1-TRICHLOROETHANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
1,1,2,2-TETRACHLOROETHANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
1,1,2-TRICHLOROETHANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
1,1-DICHLOROETHANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
1,1-DICHLOROETHENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
1,2-DICHLOROETHANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
1,2-DICHLOROPROPANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
2-BUTANONE	13	UR		12	UR	12	UR	13	UR	13	UR	13	UR	12	UR	14	UR	13	UR	13	UR	13	UR	12	UR	14	UR
2-HEXANONE	13	U		12	U	12	U	13	U	13	U	13	U	12	U	14	U	13	U	13	U	13	U	12	U	14	U
4-METHYL-2-PENTANONE	13	U		12	U	12	U	13	U	13	U	13	U	12	U	14	U	13	U	13	U	13	U	12	U	14	U
ACETONE	13	UR		12	UR	12	UR	13	UR	13	UR	13	UR	12	UR	14	UR	63	UR	64	UR	64	UR	61	UR	69	UR
BENZENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
BROMODICHLOROMETHANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
BROMOFORM	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
BROMOMETHANE	13	U		12	U	12	U	13	U	13	U	13	U	12	U	14	U	6.3	U	6.4	U	6.4	U	6.1	U	6.9	U
CARBON DISULFIDE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	73.8		13	U	13	U	12	U	14	U
CARBON TETRACHLORIDE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
CHLOROBENZENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
CHLORODIBROMOMETHANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
CHLOROETHANE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
CHLOROFORM	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
CHLOROMETHANE	13	U		12	U	12	U	13	U	13	U	13	U	12	U	14	U	6.3	U	6.4	U	6.4	U	6.1	U	6.9	U
CIS-1,2-DICHLOROETHENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
CIS-1,3-DICHLOROPROPENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
ETHYLBENZENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
METHYLENE CHLORIDE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	6.3	U	6.4	U	6.4	U	6.1	U	6.9	U
STYRENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
TETRACHLOROETHENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
TOLUENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	3.8		2.6	U	2.5	U	2.4	U	2.8	U
TOTAL XYLENES	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	7.6	U	7.7	U	7.6	U	7.3	U	8.3	U
TRANS-1,2-DICHLOROETHENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
TRANS-1,3-DICHLOROPROPENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
TRICHLOROETHENE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	2.5	U	2.6	U	2.5	U	2.4	U	2.8	U
VINYL CHLORIDE	6.3	U		6	U	6.1	U	6.4	U	6.4	U	6.4	U	6.2	U	6.8	U	6.3	U	6.4	U	6.4	U	6.1	U	6.9	U
Semivolatile Organics (µg/kg)																											
1,2,4-TRICHLOROBENZENE	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
1,2-DICHLOROBENZENE	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
1,3-DICHLOROBENZENE	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
1,4-DICHLOROBENZENE	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2,2'-OXYBIS(1-CHLOROPROPANE)	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2,4,5-TRICHLOROPHENOL	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2,4,6-TRICHLOROPHENOL	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2,4-DICHLOROPHENOL	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2,4-DIMETHYLPHENOL	1200	U		1000	U	1100	U	1100	U	1000	U	1100	UJ	1100	U	1100	U	1000	U	1100	U	1100	U	1000	U	1200	U
2,4-DINITROPHENOL	1200	U		1000	U	1100	U	1100	U	1000	U	1100	UJ	1100	U	1100	U	1000	U	1100	U	1100	U	1000	U	1200	U
2,4-DINITROTOLUENE	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2,6-DINITROTOLUENE	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2-CHLORONAPHTHALENE	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2-CHLOROPHENOL	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U
2-METHYLNAPHTHALENE	470	U		400	U	440	U	440	U	410	U	450	UJ	440	U	450	U	420	U	430	U	420	U	410	U	460	U

APPENDIX A
POND SEDIMENT DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW001	OU2SW001	OU2SW002	OU2SW003	OU2SW004	OU2SW006	OU2SW006	OU2SW007	OU2SW009	OU2SW011	OU2SW013	OU2SW016	OU2SW016	OU2SW017
nsample	NTCSD00100	NTCSD00103	NTCSD00200	NTCSD00300	NTCSD00400	NTCSD00600	NTCSD00600-D	NTCSD00700	NTCSD00900	NTCSD01100	NTCSD01300	NTCSD01600	NTCSD01600-D	NTCSD01700
sample_dat	19970701	19990811	19970701	19970701	19970701	19970702	19970701	19970702	19970702	19980825	19980825	19980825	19980825	19980825
qc_type	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	FD	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL
matrix	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
2-NITROANILINE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
2-NITROPHENOL	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
3&4-METHYLPHENOL	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
3,3'-DICHLOROBENZIDINE	1200 U		1000 U	1100 U	1100 U	1000 U	1100 UJ	1100 U	1100 U	1000 U	1100 U	1100 U	1000 U	1200 U
3-NITROANILINE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
4,6-DINITRO-2-METHYLPHENOL	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
4-BROMOPHENYL PHENYL ETHER	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
4-CHLORO-3-METHYLPHENOL	1200 U		1000 U	1100 U	1100 U	1000 U	1100 UJ	1100 U	1100 U	1000 U	1100 U	1100 U	1000 U	1200 U
4-CHLOROANILINE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
4-CHLOROPHENYL PHENYL ETHER	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
4-NITROANILINE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
4-NITROPHENOL	1200 U		1000 U	1100 U	1100 U	1000 U	1100 UJ	1100 U	1100 U	1000 U	1100 U	1100 U	1000 U	1200 U
ACENAPHTHENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
ACENAPHTHYLENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
ANTHRACENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
BENZO(A)ANTHRACENE	470 U		400 U	440 U	440 U	410 U	450 U	440 U	450 U	420 U	430 U	420 U	410 U	460 U
BENZO(A)PYRENE	120 UJ		100 UJ	110 UJ	110 UJ	100 UJ	110 UJ	110 UJ	110 U	100 U	110 U	110 U	100 U	120 U
BENZO(B)FLUORANTHENE	470 UJ		400 UJ	440 UJ	440 UJ	410 UJ	450 UJ	440 UJ	450 UJ	420 U	430 U	420 U	410 U	460 U
BENZO(G,H,I)PERYLENE	470 UJ		400 UJ	440 UJ	440 UJ	410 UJ	450 UJ	440 UJ	450 UJ	420 U	430 U	420 U	410 U	460 U
BENZO(K)FLUORANTHENE	470 UJ		400 UJ	440 UJ	440 UJ	410 UJ	450 UJ	440 UJ	450 UJ	420 U	430 U	420 U	410 U	460 U
BIS(2-CHLOROETHOXY)METHANE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
BIS(2-CHLOROETHYL)ETHER	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
BIS(2-ETHYLHEXYL)PHTHALATE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
BUTYL BENZYL PHTHALATE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
CARBAZOLE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
CHRYSENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
DI-N-BUTYL PHTHALATE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
DI-N-OCTYL PHTHALATE	470 UJ		400 U	440 UJ	440 UJ	410 UJ	450 UJ	440 UJ	450 UJ	420 U	430 U	420 U	410 U	460 U
DIBENZO(A,H)ANTHRACENE	120 UJ		100 UJ	110 UJ	110 UJ	100 UJ	110 UJ	110 UJ	110 U	100 U	110 U	110 U	100 U	120 U
DIBENZOFURAN	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
DIETHYL PHTHALATE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
DIMETHYL PHTHALATE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
FLUORANTHENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
FLUORENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
HEXACHLOROBENZENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
HEXACHLOROBUTADIENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
HEXACHLOROCYCLOPENTADIENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
HEXACHLOROETHANE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
INDENO(1,2,3-CD)PYRENE	470 UJ		400 UJ	440 UJ	440 UJ	410 UJ	450 UJ	440 UJ	450 UJ	420 U	430 U	420 U	410 U	460 U
ISOPHORONE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
N-NITROSO-DI-N-PROPYLAMINE	23 U		20 U	22 U	22 U	21 U	23 UJ	22 U	22 U	21 U	21 U	21 U	20 U	23 U
N-NITROSODIPHENYLAMINE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
NAPHTHALENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
NITROBENZENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
PHENANTHRENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
PHENOL	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
PYRENE	470 U		400 U	440 U	440 U	410 U	450 UJ	440 U	450 U	420 U	430 U	420 U	410 U	460 U
Pesticides/PCBs (µg/kg)														
4,4'-DDD	2.3 U	4.9 U	2.1 U	2.2 U	2.3 U	2.3 U	2.3 U	2.2 U	2.4 U	4.2 U	4.2 U	4.5	4 U	4.6 U
4,4'-DDE	1.1 U	4.9 U	1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	4.2 U	4.2 U	4.2 U	4 U	3.5 J

APPENDIX A
POND SEDIMENT DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW001		OU2SW001		OU2SW002		OU2SW003		OU2SW004		OU2SW006		OU2SW006		OU2SW007		OU2SW009		OU2SW011		OU2SW013		OU2SW016		OU2SW016		OU2SW017	
nsample	NTCSD00100		NTCSD00103		NTCSD00200		NTCSD00300		NTCSD00400		NTCSD00600		NTCSD00600-D		NTCSD00700		NTCSD00900		NTCSD01100		NTCSD01300		NTCSD01600		NTCSD01600-D		NTCSD01700	
sample_dat	19970701		19990811		19970701		19970701		19970701		19970702		19970701		19970702		19970702		19980825		19980825		19980825		19980825		19980825	
qc_type	NM		NM		NM		NM		NM		NM		FD		NM		NM		NM		NM		NM		FD		NM	
sacode	NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		DUP		NORMAL		NORMAL		NORMAL		NORMAL		ORIG		DUP		NORMAL	
matrix	SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD	
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	5	U	4.9	U	4.8	U	4.8	U	5.1	U	5	U	5.1	U	4.9	U	5.4	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
ALDRIN	4	U	4.9	U	3.8	U	3.8	U	4	U	4	U	4.1	U	3.9	U	4.3	U	2.1	U	2.1	U	2.1	U	2	U	2.3	U
ALPHA-BHC	0.88	U	4.9	U	0.84	U	0.85	U	0.89	U	0.88	U	0.9	U	0.86	U	0.95	U	2.1	U	2.1	U	2.1	U	2	U	2.3	U
ALPHA-CHLORDANE	0.92	U	4.9	U	0.88	U	0.89	U	0.93	U	0.92	U	0.94	U	0.91	U	1	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
AROCLOR-1016											22	U	23	U													0	U
AROCLOR-1221											8	U	8.2	U													0	U
AROCLOR-1232											18	U	18	U													0	U
AROCLOR-1242											12	U	12	U													0	U
AROCLOR-1248											9.2	U	9.4	U													0	U
AROCLOR-1254											14	U	14	U													0	U
AROCLOR-1260											19	U	20	U													0	U
BETA-BHC	1.3	U	4.9	U	1.2	U	1.2	U	1.3	U	1.3	U	1.3	U	1.2	U	1.4	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
DELTA-BHC	1.6	U	4.9	U	1.5	U	1.5	U	1.6	U	1.6	U	1.6	U	1.5	U	1.7	U	2.1	U	2.1	U	2.1	U	2	U	2.3	U
DIELDRIN	1.1	U	4.9	U	1	U	1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.2	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
ENDOSULFAN I	1.1	U	2.6	J	1.1	U	1.1	U	1.1	U	1.1	U	1.2	U	1.1	U	1.2	U	2.1	U	2.1	U	2.1	U	2	U	2.3	U
ENDOSULFAN II	1.4	U	4.9	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
ENDOSULFAN SULFATE	4.6	U	4.9	U	4.4	U	4.4	U	4.6	U	4.6	U	4.7	U	4.5	U	5	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
ENDRIN	1.8	U	4.9	U	1.7	U	1.7	U	1.8	U	1.8	U	1.8	U	1.8	U	1.9	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
ENDRIN ALDEHYDE	1.7	U	4.9	U	1.6	U	1.6	U	1.7	U	1.7	U	1.7	U	1.6	U	1.8	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
ENDRIN KETONE	8.4	U	4.9	U	8	U	8.1	U	8.4	U	8.4	U	8.6	U	8.2	U	9.1	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
GAMMA-BHC (LINDANE)	0.92	U	4.9	U	0.88	U	0.89	U	0.93	U	0.92	U	0.94	U	0.91	U	1	U	2.1	U	2.1	U	2.1	U	2	U	2.3	U
GAMMA-CHLORDANE	1	U	4.9	U	1	U	1	U	1	U	1	U	1.1	U	1	U	1.1	U	4.2	U	4.2	U	4.2	U	4	U	4.6	U
HEPTACHLOR	1.1	U	4.9	U	1	U	1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.2	U	2.1	U	2.1	U	2.1	U	2	U	2.3	U
HEPTACHLOR EPOXIDE	1.1	U	4.9	U	1.1	U	1.1	U	1.1	U	1.1	U	1.2	U	1.1	U	1.2	U	2.1	U	2.1	U	2.1	U	2	U	2.3	U
METHOXYCHLOR	7.6	U	9.5	U	7.2	U	7.2	U	7.6	U	7.6	U	7.7	U	7.4	U	8.2	U	21	U	21	U	21	U	20	U	23	U
TOXAPHENE	84	U	190	U	80	U	81	U	84	U	84	U	86	U	82	U	91	U	210	U	210	U	210	U	200	U	230	U
Inorganics (mg/kg)																												
ALUMINUM	409	J	11400		852	J	233	J	788	J	4010	J	1310	J	2460	J	1230	J	6460		537		328		2180		1210	
ANTIMONY	0.34	U	0.63	U	0.32	U	0.33	U	0.34	U	0.34	U	0.35	U	0.34	U	0.37	U	0.48	U	0.48	U	0.48	U	0.46	U	0.52	U
ARSENIC	0.57	U	5.3		0.54	U	0.55	U	0.82		0.58		0.58	U	0.56	U	0.07		1.3	U	0.4	U	0.4	U	0.44	U	0.43	U
BARIUM	2.2		52.2		5.3		4.1		1.7		19.2		6.8		11.8		2.1		21.5		6		5.6		4.2		9.1	
BERYLLIUM	0.02	U	0.48	U	0.05	U	0.01	U	0.04	U	0.05	U	0.02	U	0.05	U	0.04	U	0.63	U	0.21	U	0.15	U	0.2	U	0.24	U
CADMIUM	0.06	U	0.32	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.68	U	0.5	U	0.06	U	0.06	U	0.07	U	0.12	U
CALCIUM	186		4820		210		42.6		92.7		530		408		467		73.8		630	U	282		397		453		1340	
CHROMIUM	0.76		18.9		1.2		0.63		1.8		5.9		2		3.5		1.6		6.1		0.77	U	0.92	U	3		4.4	
COBALT	0.22	U	1.3	U	0.2	U	0.21	U	0.22	U	0.22	U	0.22	U	0.21	U	0.29		6.3	U	0.1	U	0.09	U	0.35	U	0.16	U
COPPER	0.71		25.9		0.48		0.34		0.82		0.74		1.6		0.79		0.6		3.2	U	1.3		0.56	U	0.9	U	2.5	
CYANIDE	1.4	UJ			1.2	UJ	1.3	UJ	1.3	UJ	1.2	UJ	1.4	UJ	1.3	UJ	1.3	UJ										
IRON	137		5130	J	307		37.1		1750		234		191		161		594		728		111		478		1570		288	
LEAD	1.2		33.2		1.2		1.2		1.2		2.8		2.5		4.8		0.86		13	U	0.86		1.2		1.9		19.2	
MAGNESIUM	12.3	U	214		68.6		4.1	U	11.8	U	99.3		47.8		66.6		19.6	U	630	U	26.4	U	18.7	U	67.4	U	68.1	U
MANGANESE	0.58		37.6		0.74		0.25	U	0.47	U	2.5		1.5		1.6		0.3	U	2.2		0.66	U	0.84	U	1.2	U	3.1	
MERCURY	0.1	U	0.31	U	0.09	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U	0.05	U	0.05	U	0.05		0.05	U	0.1	
NICKEL	0.25	U	5.7		0.24		0.24	U	0.32		0.48		0.26	U	0.4		0.47		5	U	0.2	U	0.2	U	0.55	U	0.47	U
POTASSIUM	20.8		213	U	28.9		13.2		26.2		69.2		29.4		28.4		20		630	U	21.3	U	22.6	U	30.4	U	41	U
SELENIUM	0.47	U	2		0.44	U	0.45	U	0.47	U	0.81		0.48	U	0.46	U	0.51	U	13	U	0.3	U	0.3	U	0.28	U	0.32	U
SILVER	0.25	U	0.17	U	0.24	U	0.24	U	0.25	U	0.25	U	0.26	U	0.25	U	0.27	U	1.3	U	0.22	UJ	0.22	UJ	0.21	UJ	0.27	U
SODIUM	104	U	994	U	99	U	101	U	105	U	105	U	106	U	103	U	113	U	630	U	340		324		41.9		412	
THALLIUM	0.51	U	0.17	UJ	0.48	U	0.49	U	0.51	U	0.7	U	0.52	U	0.5	U	0.55	U	1.3	UJ	0.49	U	0.49	U	0.47	U	0.53	U
VANADIUM	0.64		19		1.2		0.3		7.4		2.2		1		1.5		2.9		8.5		1.8		1.1	U	6.5		2	
ZINC	2.7		143		0.39	U	0.23	U	27.8		0.51	U	1.6	U	1.3	U	0.32	U	8.5	J	5.2	J	7.1	J	15.2	J	20.5	J

APPENDIX A
POND SEDIMENT DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW001	OU2SW001	OU2SW002	OU2SW003	OU2SW004	OU2SW006	OU2SW006	OU2SW007	OU2SW009	OU2SW011	OU2SW013	OU2SW016	OU2SW016	OU2SW017
nsample	NTCSD00100	NTCSD00103	NTCSD00200	NTCSD00300	NTCSD00400	NTCSD00600	NTCSD00600-D	NTCSD00700	NTCSD00900	NTCSD01100	NTCSD01300	NTCSD01600	NTCSD01600-D	NTCSD01700
sample_dat	19970701	19990811	19970701	19970701	19970701	19970702	19970701	19970702	19970702	19980825	19980825	19980825	19980825	19980825
qc_type	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	FD	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL
matrix	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (µg/kg)														
2,4,5-T	1.6 U		1.5 U	1.6 U	1.6 U	1.6 U	1.5 U	1.6 U	1.8 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
2,4,5-TP (SILVEX)	1.9 U		1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2.1 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U
2,4-D	8.8 U		8.3 U	8.5 U	8.9 U	8.8 U	8.3 U	8.8 U	9.5 U	8.4 U	8.4 U	8.8 U	8.4 U	8.4 U
2,4-DB	5.1 U		4.8 U	4.9 U	5.1 U	5.1 U	4.7 U	5 U	5.4 U	4.8 U	4.8 U	5 U	4.8 U	4.8 U
DALAPON	10 U		9.5 U	9.8 U	10 U	10 U	9.4 U	10 U	11 U	9.6 U	9.6 U	10 U	9.6 U	9.6 U
DICAMBA	5.1 U		4.8 U	4.9 U	5.1 U	5.1 U	4.7 U	5 U	5.4 U	4.8 U	4.8 U	5 U	4.8 U	4.8 U
DICHLOROPROP	25 U		24 U	24 U	25 U	25 U	24 U	25 U	27 U	24 U	24 U	25 U	24 U	24 U
DINOSEB	5.1 U		4.8 U	4.9 U	5.1 U	5.1 U	4.7 U	5 U	5.4 U	4.8 U	4.8 U	5 U	4.8 U	4.8 U
MCPA	2500 U		2400 U	2400 U	2500 U	2500 U	2400 U	2500 U	2700 U	2400 U	2400 U	2500 U	2400 U	2400 U
MCPP	1300 U		1200 U	1200 U	1300 U	1300 U	1200 U	1200 U	1400 U	1200 U	1200 U	1200 U	1200 U	1200 U
PENTACHLOROPHENOL	2.5 U		2.4 U	2.4 U	2.5 U	2.5 U	2.4 U	2.5 U	2.7 U	2.4 U	2.4 U	2.5 U	2.4 U	2.4 U
Petroleum Hydrocarbons (mg/kg)														
DIESEL RANGE ORGANICS	12 U		10 U	11 U	11 U	10 U	11 U	11 U	11 U					
GASOLINE RANGE ORGANICS	0.14 U		0.12 U	0.13 U	0.13 U	0.12 U	0.14 U	0.13 U	0.13 U					
TOTAL PETROLEUM HYDROCARBONS										10 U	11 U	11 U	10 U	21.6
Miscellaneous Parameters (mg/kg)														
CYANIDE										1.3 U	1.3 U	1.3 U	1.2 U	1.4 U
TOTAL ORGANIC CARBON										1890	1210	2160	2410	7760
Radiological (pCi/g)														
ACTINIUM-228											0.6	1.2		1.2
ACTINIUM-228 UNCERT.											0.2	0.5		0.4
BISMUTH-214													0.6	1.3
BISMUTH-214 UNCERT.													0.2	0.4
GROSS ALPHA	0.495	5.6	1.34	0.186	0.201	0.94	1.3	2.58	1.23	7.7	5.9	4.7	3.1	7.3
GROSS ALPHA UNCERT.										3.2	3.1	2.9	3	3.1
GROSS BETA	0.07 U	3	0.655 J	-0.291 U	0.094 U	0.346 J	0.762 J	1.68 J	0.543 J	0 U	0 U	1 U	0 U	0.7 U
GROSS BETA UNCERT.										2.5 U	2.4 U	2.5 U	2.4 U	2.6 U
LEAD-212										0.3	0.2	0.3	0.3	0.6
LEAD-212 UNCERT.										0.1	0.1	0.1	0.1	0.2
LEAD-214										0.8	0.6	0.9	0.8	1.7
LEAD-214 UNCERT.										0.3	0.3	0.2	0.2	0.4
POTASSIUM-40													3.3	
POTASSIUM-40 UNCERT.													0.8	
THALLIUM-208											0.5	0.5		
THALLIUM-208 UNCERT.											0.1	0.1		
THORIUM-228														
THORIUM-230														
THORIUM-232														
URANIUM-234														
URANIUM-235														
URANIUM-238														

Notes:

Abbreviations:
- g = gram
- kg = kilogram
- mg = milligram
- µg = microgram
- NA = not applicable
- pCi = picocurie

Qualifiers:
- J = estimated
- R = rejected
- U = not detected

Sediment in Canals

APPENDIX A
CANAL SEDIMENT DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

location	OU2SW005		OU2SW005	OU2SW008		OU2SW008	OU2SW010		OU2SW010	OU2SW012		OU2SW012	OU2SW014		OU2SW014	OU2SW015		OU2SW015
nsample	**NTCSD00500**		**NTCSD00503**	**NTCSD00800**		**NTCSD00803**	**NTCSD01000**		**NTCSD01003**	**NTCSD01200**		**NTCSD01203**	**NTCSD01400**		**NTCSD01403**	**NTCSD01500**		**NTCSD01503**
sample_dat	19970701		19990811	19970718		19990812	19970702		19990811	19980825		19990811	19980826		19990811	19980826		19990812
qc_type	NM		NM	NM		NM	NM		NM	NM		NM	NM		NM	NM		NM
sacode	NORMAL		NORMAL	NORMAL		NORMAL	NORMAL		NORMAL	NORMAL		NORMAL	NORMAL		NORMAL	NORMAL		NORMAL
matrix	SD		SD	SD		SD	SD		SD	SD		SD	SD		SD	SD		SD
top_depth	-9999		-9999	-9999		-9999	-9999		-9999	-9999		-9999	-9999		-9999	-9999		-9999
bottom_dep	-9999		-9999	-9999		-9999	-9999		-9999	-9999		-9999	-9999		-9999	-9999		-9999
depth_unit	NA		NA	NA		NA	NA		NA	NA		NA	NA		NA	NA		NA
Volatile Organics (µg/kg)																		
1,1,1-TRICHLOROETHANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
1,1,2,2-TETRACHLOROETHANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
1,1,2-TRICHLOROETHANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
1,1-DICHLOROETHANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
1,1-DICHLOROETHENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
1,2-DICHLOROETHANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
1,2-DICHLOROPROPANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
2-BUTANONE	16	UR		12	U		14	UR		14	UR		15	UR		14	UR	
2-HEXANONE	16	U		12	U		14	U		14	U		15	U		14	U	
4-METHYL-2-PENTANONE	16	U		12	U		14	U		14	U		15	U		14	U	
ACETONE	16	UR		60	U		14	UR		72	UR		74	UR		72	UR	
BENZENE	8.2	U		4.1			6.8	U		2.9	U		3	U		2.9	U	
BROMODICHLOROMETHANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
BROMOFORM	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
BROMOMETHANE	16	U		6	U		14	U		7.2	U		7.4	U		7.2	U	
CARBON DISULFIDE	8.2	U		2.4	U		6.8	U		14	U		15	U		14	U	
CARBON TETRACHLORIDE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
CHLOROBENZENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
CHLORODIBROMOMETHANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
CHLOROETHANE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
CHLOROFORM	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
CHLOROMETHANE	16	U		6	U		14	U		7.2	U		7.4	U		7.2	U	
CIS-1,2-DICHLOROETHENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
CIS-1,3-DICHLOROPROPENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
ETHYLBENZENE	8.2	U		4.2			6.8	U		2.9	U		3	U		2.9	U	
METHYLENE CHLORIDE	8.2	U		6	U		6.8	U		7.2	U		7.4	U		7.2	U	
STYRENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
TETRACHLOROETHENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
TOLUENE	8.2	U		2.4	U		6.8	U		2.6	J		59.9			9		
TOTAL XYLENES	8.2	U		5.9			6.8	U		8.6	U		8.9	U		8.6	U	
TRANS-1,2-DICHLOROETHENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
TRANS-1,3-DICHLOROPROPENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
TRICHLOROETHENE	8.2	U		2.4	U		6.8	U		2.9	U		3	U		2.9	U	
VINYL CHLORIDE	8.2	U		6	U		6.8	U		7.2	U		7.4	U		7.2	U	
Semivolatile Organics (µg/kg)																		
1,2,4-TRICHLOROBENZENE	540	U		420	U		420	U		480	U		500	U		480	U	
1,2-DICHLOROBENZENE	540	U		420	U		420	U		480	U		500	U		480	U	
1,3-DICHLOROBENZENE	540	U		420	U		420	U		480	U		500	U		480	U	
1,4-DICHLOROBENZENE	540	U		420	U		420	U		480	U		500	U		480	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	540	U		420	U		420	U		480	U		500	U		480	U	
2,4,5-TRICHLOROPHENOL	540	U		420	U		420	U		480	U		500	U		480	U	

location	OU2SW005	OU2SW005	OU2SW008	OU2SW008	OU2SW010	OU2SW010	OU2SW012	OU2SW012	OU2SW014	OU2SW014	OU2SW015	OU2SW015
nsample	**NTCSD00500**	**NTCSD00503**	**NTCSD00800**	**NTCSD00803**	**NTCSD01000**	**NTCSD01003**	**NTCSD01200**	**NTCSD01203**	**NTCSD01400**	**NTCSD01403**	**NTCSD01500**	**NTCSD01503**
sample_dat	19970701	19990811	19970718	19990812	19970702	19990811	19980825	19990811	19980826	19990811	19980826	19990812
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	540 U		420 U		420 U		480 U		500 U		480 U	
2,4-DICHLOROPHENOL	540 U		420 U		420 U		480 U		500 U		480 U	
2,4-DIMETHYLPHENOL	1300 U		1000 U		1000 U		1200 U		1200 U		1200 U	
2,4-DINITROPHENOL	1300 U		1000 U		1000 U		1200 U		1200 U		1200 U	
2,4-DINITROTOLUENE	540 U		420 U		420 U		480 U		500 U		480 U	
2,6-DINITROTOLUENE	540 U		420 U		420 U		480 U		500 U		480 U	
2-CHLORONAPHTHALENE	540 U		420 U		420 U		480 U		500 U		480 U	
2-CHLOROPHENOL	540 U		420 U		420 U		480 U		500 U		480 U	
2-METHYLNAPHTHALENE	540 U		420 U		420 U		480 U		500 U		480 U	
2-METHYLPHENOL	540 U		420 U		420 U		480 U		500 U		480 U	
2-NITROANILINE	540 U		420 U		420 U		480 U		500 U		480 U	
2-NITROPHENOL	540 U		420 U		420 U		480 U		500 U		480 U	
3&4-METHYLPHENOL	540 U		420 U		420 U		480 U		500 U		480 U	
3,3'-DICHLOROBENZIDINE	1300 U		1000 U		1000 U		1200 U		1200 U		1200 U	
3-NITROANILINE	540 U		420 U		420 U		480 U		500 U		480 U	
4,6-DINITRO-2-METHYLPHENOL	540 U		420 U		420 U		480 U		500 U		480 U	
4-BROMOPHENYL PHENYL ETHER	540 U		420 U		420 U		480 U		500 U		480 U	
4-CHLORO-3-METHYLPHENOL	1300 U		1000 U		1000 U		1200 U		1200 U		1200 U	
4-CHLOROANILINE	540 U		420 U		420 U		480 U		500 U		480 U	
4-CHLOROPHENYL PHENYL ETHER	540 U		420 U		420 U		480 U		500 U		480 U	
4-NITROANILINE	540 U		420 U		420 U		480 U		500 U		480 U	
4-NITROPHENOL	1300 U		1000 U		1000 U		1200 U		1200 U		1200 U	
ACENAPHTHENE	540 U		420 U		420 U		480 U		500 U		480 U	
ACENAPHTHYLENE	540 U		420 U		420 U		480 U		500 U		480 U	
ANTHRACENE	540 U		420 U		420 U		480 U		500 U		480 U	
BENZO(A)ANTHRACENE	540 U		420 U		420 U		480 U		500 U		480 U	
BENZO(A)PYRENE	130 UJ		100 U		100 U		120 U		120 U		120 U	
BENZO(B)FLUORANTHENE	540 UJ		420 U		420 UJ		480 U		500 U		480 U	
BENZO(G,H,I)PERYLENE	540 UJ		420 U		420 UJ		480 U		500 U		480 U	
BENZO(K)FLUORANTHENE	540 UJ		420 U		420 UJ		480 U		500 U		480 U	
BIS(2-CHLOROETHOXY)METHANE	540 U		420 U		420 U		480 U		500 U		480 U	
BIS(2-CHLOROETHYL)ETHER	540 U		420 U		420 U		480 U		500 U		480 U	
BIS(2-ETHYLHEXYL)PHTHALATE	540 U		420 U		420 U		480 U		500 U		480 U	
BUTYL BENZYL PHTHALATE	540 U		420 U		420 U		480 U		500 U		480 U	
CARBAZOLE	540 U		420 U		420 U		480 U		500 U		480 U	
CHRYSENE	540 U		420 U		420 U		480 U		500 U		480 U	
DI-N-BUTYL PHTHALATE	540 U		420 U		420 U		480 U		500 U		480 U	
DI-N-OCTYL PHTHALATE	540 UJ		420 U		420 UJ		480 U		500 U		480 U	
DIBENZO(A,H)ANTHRACENE	130 UJ		100 U		100 U		120 U		120 U		120 U	
DIBENZOFURAN	540 U		420 U		420 U		480 U		500 U		480 U	
DIETHYL PHTHALATE	540 U		420 U		420 U		480 U		500 U		480 U	
DIMETHYL PHTHALATE	540 U		420 U		420 U		480 U		500 U		480 U	
FLUORANTHENE	540 U		420 U		420 U		480 U		500 U		480 U	
FLUORENE	540 U		420 U		420 U		480 U		500 U		480 U	

location	OU2SW005		OU2SW005		OU2SW008		OU2SW008		OU2SW010		OU2SW010		OU2SW012		OU2SW012		OU2SW014		OU2SW014		OU2SW015		OU2SW015	
nsample	**NTCSD00500**		**NTCSD00503**		**NTCSD00800**		**NTCSD00803**		**NTCSD01000**		**NTCSD01003**		**NTCSD01200**		**NTCSD01203**		**NTCSD01400**		**NTCSD01403**		**NTCSD01500**		**NTCSD01503**	
sample_dat	19970701		19990811		19970718		19990812		19970702		19990811		19980825		19990811		19980826		19990811		19980826		19990812	
qc_type	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
sacode	NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL	
matrix	SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD	
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HEXACHLOROBENZENE	540	U			420	U			420	U			480	U			500	U			480	U		
HEXACHLOROBUTADIENE	540	U			420	U			420	U			480	U			500	U			480	U		
HEXACHLOROCYCLOPENTADIENE	540	U			420	U			420	U			480	U			500	U			480	U		
HEXACHLOROETHANE	540	U			420	U			420	U			480	U			500	U			480	U		
INDENO(1,2,3-CD)PYRENE	540	UJ			420	U			420	UJ			480	U			500	U			480	U		
ISOPHORONE	540	U			420	U			420	U			480	U			500	U			480	U		
N-NITROSO-DI-N-PROPYLAMINE	27	U			21	U			21	U			24	U			25	U			24	U		
N-NITROSODIPHENYLAMINE	540	U			420	U			420	U			480	U			500	U			480	U		
NAPHTHALENE	540	U			420	U			420	U			480	U			500	U			480	U		
NITROBENZENE	540	U			420	U			420	U			480	U			500	U			480	U		
PHENANTHRENE	540	U			420	U			420	U			480	U			500	U			480	U		
PHENOL	540	U			420	U			420	U			480	U			500	U			480	U		
PYRENE	540	U			420	U			420	U			480	U			500	U			480	U		
Pesticides/PCBs (µg/kg)																								
4,4'-DDD	2.9	U	2.2	U			2.3	U	2.4	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
4,4'-DDE	1.4	U	8.2				2.3	U	1.2	U	3.4		4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
4,4'-DDT	6.6	U	2.2	U			2.3	U	5.4	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
ALDRIN	5.2	U	2.2	U			2.3	U	4.3	U	2.8	U	2.4	U	3.3	U	2.5	U	2.3	U	2.4	U	2.1	U
ALPHA-BHC	1.1	U	2.2	U			2.3	U	0.95	U	2.8	U	2.4	U	3.3	U	2.5	U	2.3	U	2.4	U	2.1	U
ALPHA-CHLORDANE	1.2	U	2.2	U			2.3	U	2.5		3.5	R	4.9	U	3.3	U	5	U	2.3	U	4.8	U	1.1	J
AROCLOR-1016																								
AROCLOR-1221																								
AROCLOR-1232																								
AROCLOR-1242																								
AROCLOR-1248																								
AROCLOR-1254																								
AROCLOR-1260																								
BETA-BHC	1.6	U	2.2	U			2.3	U	1.4	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
DELTA-BHC	2	U	2.2	U			2.3	U	1.7	U	2.8	U	2.4	U	3.3	U	2.5	U	2.3	U	2.4	U	2.1	U
DIELDRIN	1.4	U	2.2	U			2.3	U	1.2	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
ENDOSULFAN I	1.5	U	2.2	U			2.1	J	1.2	U	2.8	U	2.4	U	3.3	U	2.5	U	2.3	U	2.4	U	1.3	J
ENDOSULFAN II	1.8	U	2.2	U			2.3	U	1.5	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
ENDOSULFAN SULFATE	6	U	2.2	U			2.3	U	5	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
ENDRIN	2.3	U	2.2	U			2.3	U	1.9	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
ENDRIN ALDEHYDE	2.2	U	2.2	U			2.3	U	1.8	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
ENDRIN KETONE	11	U	2.2	U			2.3	U	9	U	2.8	U	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2.1	U
GAMMA-BHC (LINDANE)	1.2	U	2.2	U			2.3	U	0.99	U	2.8	U	2.4	U	3.3	U	2.5	U	2.3	U	2.4	U	2.1	U
GAMMA-CHLORDANE	1.4	U	2.2	U			2.3	U	4.4		5.4	J	4.9	U	3.3	U	5	U	2.3	U	4.8	U	2	J
HEPTACHLOR	1.4	U	2.2	U			2.3	U	1.3		2.8	U	2.4	U	7.5	R	2.5	U	2.3	U	2.4	U	2.1	U
HEPTACHLOR EPOXIDE	1.5	U	2.2	U			2.3	U	1.2	U	2.8	U	2.4	U	3.3	U	2.5	U	2.3	U	2.4	U	2.1	U
METHOXYCHLOR	9.8	U	4.3	U			4.5	U	8.1	U	5.5	U	24	U	6.4	U	25	U	4.5	U	24	U	4.2	U
TOXAPHENE	110	U	87	U			91	U	90	U	110	U	240	U	130	U	250	U	91	U	240	U	85	U

location	OU2SW005		OU2SW005		OU2SW008		OU2SW008		OU2SW010		OU2SW010		OU2SW012		OU2SW012		OU2SW014		OU2SW014		OU2SW015		OU2SW015	
nsample	**NTCSD00500**		**NTCSD00503**		**NTCSD00800**		**NTCSD00803**		**NTCSD01000**		**NTCSD01003**		**NTCSD01200**		**NTCSD01203**		**NTCSD01400**		**NTCSD01403**		**NTCSD01500**		**NTCSD01503**	
sample_dat	19970701		19990811		19970718		19990812		19970702		19990811		19980825		19990811		19980826		19990811		19980826		19990812	
qc_type	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
sacode	NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL	
matrix	SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD	
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Inorganics (mg/kg)																								
ALUMINUM	3640	J	1220		2800		827	J	1230	J	2070		664		909		3910		5860		816		415	J
ANTIMONY	0.45	U	0.29	U	0.33	UJ	0.3	U	0.37	U	0.37	U	0.54	U	0.43	U	0.56	U	0.3	U	0.54	U	0.3	
ARSENIC	0.74	U	0.3	U	0.55	U	0.31	U	0.61	U	0.46	U	0.47	U	0.45	U	0.47	U	0.64	U	0.45	U	0.29	
BARIUM	12.8		4.8		10.8		4		5.4		7.1		20.2		4.6		154		30.1		5.7		2	
BERYLLIUM	0.06	U	0.02	U	0.03	U	0.04	U	0.12	U	0.1	U	0.21	U	0.04	U	0.91	U	0.81		0.18	U	0.02	U
CADMIUM	0.08	U	0.03	U	0.061	U	0.03	U	0.07	U	0.03	U	0.16	U	0.11	U	0.13	U	0.03	U	0.18	U	0.03	U
CALCIUM	175		272		188		114	U	227		2820		584		253		499		367		374		146	U
CHROMIUM	4.3		2		2.2		1.3	U	1.6		3.8		1.7		1.7	U	6.7		8.6		1.9		0.78	U
COBALT	0.28	U	0.08	U	0.21	U	0.21	U	0.23	U	0.16	U	0.92	U	0.17	U	0.32	U	0.46	U	0.23	U	0.08	U
COPPER	2.1		0.61		0.74		1.4	U	1.1		4.2		2.1		2.8		5.9		4.3		1.5		0.37	U
CYANIDE	1.6	UJ							1.2	UJ														
IRON	177		138	J	266		199	J	241		666	J	710		393	J	837		1200	J	202		176	J
LEAD	5.4		2.8		2.9		1.5	J	2.1		10.7		2.4		2.6		7.8		6.1		5.6		0.61	J
MAGNESIUM	28.1	U	18.1	U	62.8		19.1	U	26.5	U	93.2		56.9	U	34.6	U	208		228		63.9	U	20.6	U
MANGANESE	0.64	U	0.62	U	0.84		7		1.1		8.9		4.6		1.1	U	1	U	1.4		1	U	0.92	U
MERCURY	0.13	U	0.03	U	0.1	U	0.02	U	0.11	U	0.08	U	0.06	U	0.03	U	0.06		0.1	U	0.06	U	0.02	U
NICKEL	0.57		0.47	U	1.1		0.96	U	0.31		1.1	U	1	U	0.79	U	2.1		3.6		0.49	U	0.75	U
POTASSIUM	48.3		35.2	U	45.9		27.6	U	20.5		70.8	U	30.3	U	25.5	U	51.3	U	67.5	U	29.7	U	26	U
SELENIUM	1		0.46		0.52		0.47	U	0.66		0.59	U	0.33	U	0.68	U	0.61	U	0.47	U	0.33	U	0.44	U
SILVER	0.33	U	0.08	U	0.25	U	0.08	U	0.27	U	0.1	U	0.25	U	0.16	U	0.27	U	0.08	U	0.28	U	0.08	U
SODIUM	136	U	339	U	101	U	106	U	112	U	382	U	573		74.2	U	93.2		103	U	47.8	U	119	U
THALLIUM	0.66	U	0.08	UJ	0.83	U	0.16	U	0.54	U	0.1	UJ	0.55	U	0.12	UJ	0.58	U	0.08	UJ	0.55	U	0.08	UJ
VANADIUM	3.5		1.3		2.8		0.82		24.9		27.1		3.2		2.4		6.5		7.6		1	U	0.44	U
ZINC	1.1	U	1.4		1.7		8.3	U	1.7		17.9		74.7	J	2.9		12.6	J	2		14.2	J	3	U
Herbicides (µg/kg)																								
2,4,5-T	2.1	U							1.8	U			1.6	U			2.1	U			1.6	U		
2,4,5-TP (SILVEX)	2.5	U							2	U			1.9	U			2.5	U			1.9	U		
2,4-D	12	U							9.5	U			8.8	U			12	U			8.8	U		
2,4-DB	6.6	U							5.4	U			5	U			6.6	U			5	U		
DALAPON	13	U							11	U			10	U			13	U			10	U		
DICAMBA	6.6	U							5.4	U			5	U			6.6	U			5	U		
DICHLOROPROP	33	U							27	U			25	U			33	U			25	U		
DINOSEB	6.6	U							5.4	U			5	U			6.6	U			5	U		
MCPA	3300	U							2700	U			2500	U			3300	U			2500	U		

location	OU2SW005	OU2SW005	OU2SW008	OU2SW008	OU2SW010	OU2SW010	OU2SW012	OU2SW012	OU2SW014	OU2SW014	OU2SW015	OU2SW015
nsample	**NTCSD00500**	**NTCSD00503**	**NTCSD00800**	**NTCSD00803**	**NTCSD01000**	**NTCSD01003**	**NTCSD01200**	**NTCSD01203**	**NTCSD01400**	**NTCSD01403**	**NTCSD01500**	**NTCSD01503**
sample_dat	19970701	19990811	19970718	19990812	19970702	19990811	19980825	19990811	19980826	19990811	19980826	19990812
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
matrix	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MCPP	1600 U				1400 U		1200 U		1600 U		1200 U	
PENTACHLOROPHENOL	3.3 U				2.7 U		2.5 U		3.3 U		2.5 U	
Petroleum Hydrocarbons (mg/kg)												
DIESEL RANGE ORGANICS	13 U		10 U		10 U							
GASOLINE RANGE ORGANICS	0.16 U		0.12 U		0.13 U							
TOTAL PETROLEUM HYDROCARBONS							12 U		12 U		12 U	
Miscellaneous Parameters (mg/kg)												
CYANIDE							1.4 U		1.5 U		1.4 U	
TOTAL ORGANIC CARBON							15500		29900		1910	
Radiological (pCi/g)												
ACTINIUM-228							1.2		1.6			
ACTINIUM-228 UNCERT.							0.3		0.3			
BISMUTH-214							1		1.4		0.6	
BISMUTH-214 UNCERT.							0.2		0.3		0.2	
GROSS ALPHA	2.22		1.49	0.2 U	0.735	3.7	0 U	2.5	16.5	15	2.7 U	2.2
GROSS ALPHA UNCERT.			0.197				2.7 U		3.6		2.9 U	
GROSS BETA	1.33 J		0.679	0 U	0.319 J	3.6	0.2 U	0.5 U	0.8 U	5.7	0 U	1.2 U
GROSS BETA UNCERT.			0.107	1.8 U			2.7 U		2.5 U		2.7 U	
LEAD-212							0.3		0.6			
LEAD-212 UNCERT.							0.1		0.1			
LEAD-214							0.4		1.4		1.1	
LEAD-214 UNCERT.							0.1		0.3		0.2	
POTASSIUM-40												
POTASSIUM-40 UNCERT.												
THALLIUM-208									0.3			
THALLIUM-208 UNCERT.									0.1			
THORIUM-228									0.9 J			
THORIUM-230									1.3 J			
THORIUM-232									0.6 J			
URANIUM-234									0.2 J			
URANIUM-235									0.1 J			
URANIUM-238									0.6 J			

location	OU2SW018		OU2SW018	OU2SW019		OU2SW019		OU2SW019	OU2SW020		OU2SW020	OU2SW020		OU2SW021		OU2SW021	OU2SW022	
nsample	**NTCSD01800**		**NTCSD01803**	**NTCSD01900**		**NTCSD01900-D**		**NTCSD01903**	**NTCSD02000**		**NTCSD02003**	**NTCSD02003-D**		**NTCSD02100**		**NTCSD02103**	**NTCSD02200**	
sample_dat	19980827		19990812	19980825		19980826		19990811	19980827		19990812	19990812		19980826		19990812	19980826	
qc_type	NM		NM	NM		FD		NM	NM		NM	FD		NM		NM	NM	
sacode	NORMAL		NORMAL	NORMAL		DUP		NORMAL	NORMAL		NORMAL	DUP		NORMAL		NORMAL	NORMAL	
matrix	SD		SD	SD		SD		SD	SD		SD	SD		SD		SD	SD	
top_depth	-9999		-9999	-9999		-9999		-9999	-9999		-9999	-9999		-9999		-9999	-9999	
bottom_dep	-9999		-9999	-9999		-9999		-9999	-9999		-9999	-9999		-9999		-9999	-9999	
depth_unit	NA		NA	NA		NA		NA	NA		NA	NA		NA		NA	NA	
Volatile Organics (µg/kg)																		
1,1,1-TRICHLOROETHANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
1,1,2,2-TETRACHLOROETHANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
1,1,2-TRICHLOROETHANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
1,1-DICHLOROETHANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
1,1-DICHLOROETHENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
1,2-DICHLOROETHANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
1,2-DICHLOROPROPANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
2-BUTANONE	13	UR		21	UR	13	UR		13	UR			13	UR			12	UR
2-HEXANONE	13	U		21	U	13	U		13	U			13	U			12	U
4-METHYL-2-PENTANONE	13	U		21	U	13	U		13	U			13	U			12	U
ACETONE	67	UR		110	UR	66	UR		63	UR			66	UR			62	UR
BENZENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
BROMODICHLOROMETHANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
BROMOFORM	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
BROMOMETHANE	6.7	U		11	U	6.6	U		6.3	U			6.6	U			6.2	U
CARBON DISULFIDE	13	U		21	U	13	U		13	U			13	U			12	U
CARBON TETRACHLORIDE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
CHLOROBENZENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
CHLORODIBROMOMETHANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
CHLOROETHANE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
CHLOROFORM	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
CHLOROMETHANE	6.7	U		11	U	6.6	U		6.3	U			6.6	U			6.2	U
CIS-1,2-DICHLOROETHENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
CIS-1,3-DICHLOROPROPENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
ETHYLBENZENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
METHYLENE CHLORIDE	6.7	U		11	U	6.6	U		6.3	U			6.6	U			6.2	U
STYRENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
TETRACHLOROETHENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
TOLUENE	2.7	U		8.6		2.6	U		2.5	U			2.7	U			2.5	U
TOTAL XYLENES	8	U		13	U	7.9	U		7.6	U			8	U			7.4	U
TRANS-1,2-DICHLOROETHENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
TRANS-1,3-DICHLOROPROPENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
TRICHLOROETHENE	2.7	U		4.3	U	2.6	U		2.5	U			2.7	U			2.5	U
VINYL CHLORIDE	6.7	U		11	U	6.6	U		6.3	U			6.6	U			6.2	U
Semivolatile Organics (µg/kg)																		
1,2,4-TRICHLOROBENZENE	450	U		710	U	440	U		420	U			440	U			410	U
1,2-DICHLOROBENZENE	450	U		710	U	440	U		420	U			440	U			410	U
1,3-DICHLOROBENZENE	450	U		710	U	440	U		420	U			440	U			410	U
1,4-DICHLOROBENZENE	450	U		710	U	440	U		420	U			440	U			410	U
2,2'-OXYBIS(1-CHLOROPROPANE)	450	U		710	U	440	U		420	U			440	U			410	U
2,4,5-TRICHLOROPHENOL	450	U		710	U	440	U		420	U			440	U			410	U

location	OU2SW018		OU2SW018		OU2SW019		OU2SW019		OU2SW019		OU2SW020		OU2SW020		OU2SW020		OU2SW021		OU2SW021		OU2SW022	
nsample	**NTCSD01800**		**NTCSD01803**		**NTCSD01900**		**NTCSD01900-D**		**NTCSD01903**		**NTCSD02000**		**NTCSD02003**		**NTCSD02003-D**		**NTCSD02100**		**NTCSD02103**		**NTCSD02200**	
sample_dat	19980827		19990812		19980825		19980826		19990811		19980827		19990812		19990812		19980826		19990812		19980826	
qc_type	NM		NM		NM		FD		NM		NM		NM		FD		NM		NM		NM	
sacode	NORMAL		NORMAL		NORMAL		DUP		NORMAL		NORMAL		NORMAL		DUP		NORMAL		NORMAL		NORMAL	
matrix	SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD	
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,4,6-TRICHLOROPHENOL	450	U			710	U	440	U			420	U					440	U			410	U
2,4-DICHLOROPHENOL	450	U			710	U	440	U			420	U					440	U			410	U
2,4-DIMETHYLPHENOL	1100	U			1800	U	1100	U			1000	U					1100	U			1000	U
2,4-DINITROPHENOL	1100	U			1800	U	1100	U			1000	U					1100	U			1000	U
2,4-DINITROTOLUENE	450	U			710	U	440	U			420	U					440	U			410	U
2,6-DINITROTOLUENE	450	U			710	U	440	U			420	U					440	U			410	U
2-CHLORONAPHTHALENE	450	U			710	U	440	U			420	U					440	U			410	U
2-CHLOROPHENOL	450	U			710	U	440	U			420	U					440	U			410	U
2-METHYLNAPHTHALENE	450	U			710	U	440	U			420	U					440	U			410	U
2-METHYLPHENOL	450	U			710	U	440	U			420	U					440	U			410	U
2-NITROANILINE	450	U			710	U	440	U			420	U					440	U			410	U
2-NITROPHENOL	450	U			710	U	440	U			420	U					440	U			410	U
3&4-METHYLPHENOL	450	U			710	U	223	J			420	U					440	U			410	U
3,3'-DICHLOROBENZIDINE	1100	U			1800	U	1100	U			1000	U					1100	U			1000	U
3-NITROANILINE	450	U			710	U	440	U			420	U					440	U			410	U
4,6-DINITRO-2-METHYLPHENOL	450	U			710	U	440	U			420	U					440	U			410	U
4-BROMOPHENYL PHENYL ETHER	450	U			710	U	440	U			420	U					440	U			410	U
4-CHLORO-3-METHYLPHENOL	1100	U			1800	U	1100	U			1000	U					1100	U			1000	U
4-CHLOROANILINE	450	U			710	U	440	U			420	U					440	U			410	U
4-CHLOROPHENYL PHENYL ETHER	450	U			710	U	440	U			420	U					440	U			410	U
4-NITROANILINE	450	U			710	U	440	U			420	U					440	U			410	U
4-NITROPHENOL	1100	U			1800	U	1100	U			1000	U					1100	U			1000	U
ACENAPHTHENE	450	U			710	U	440	U			420	U					440	U			410	U
ACENAPHTHYLENE	450	U			710	U	440	U			420	U					440	U			410	U
ANTHRACENE	450	U			710	U	440	U			420	U					440	U			410	U
BENZO(A)ANTHRACENE	450	U			710	U	440	U			420	U					440	U			410	U
BENZO(A)PYRENE	110	U			180	U	110	U			100	U					110	U			100	U
BENZO(B)FLUORANTHENE	450	U			710	U	440	U			420	U					440	U			410	U
BENZO(G,H,I)PERYLENE	450	U			710	U	440	U			420	U					440	U			410	U
BENZO(K)FLUORANTHENE	450	U			710	U	440	U			420	U					440	U			410	U
BIS(2-CHLOROETHOXY)METHANE	450	U			710	U	440	U			420	U					440	U			410	U
BIS(2-CHLOROETHYL)ETHER	450	U			710	U	440	U			420	U					440	U			410	U
BIS(2-ETHYLHEXYL)PHTHALATE	450	U			710	U	440	U			420	U					440	U			410	U
BUTYL BENZYL PHTHALATE	450	U			710	U	440	U			420	U					440	U			410	U
CARBAZOLE	450	U			710	U	440	U			420	U					440	U			410	U
CHRYSENE	450	U			710	U	440	U			420	U					440	U			410	U
DI-N-BUTYL PHTHALATE	450	U			710	U	440	U			420	U					440	U			410	U
DI-N-OCTYL PHTHALATE	450	U			710	U	440	U			420	U					440	U			410	U
DIBENZO(A,H)ANTHRACENE	110	U			180	U	110	U			100	U					110	U			100	U
DIBENZOFURAN	450	U			710	U	440	U			420	U					440	U			410	U
DIETHYL PHTHALATE	450	U			710	U	440	U			420	U					440	U			410	U
DIMETHYL PHTHALATE	450	U			710	U	440	U			420	U					440	U			410	U
FLUORANTHENE	450	U			710	U	440	U			420	U					440	U			410	U
FLUORENE	450	U			710	U	440	U			420	U					440	U			410	U

location	OU2SW018	OU2SW018	OU2SW019	OU2SW019	OU2SW019	OU2SW020	OU2SW020	OU2SW020	OU2SW021	OU2SW021	OU2SW022
nsample	**NTCSD01800**	**NTCSD01803**	**NTCSD01900**	**NTCSD01900-D**	**NTCSD01903**	**NTCSD02000**	**NTCSD02003**	**NTCSD02003-D**	**NTCSD02100**	**NTCSD02103**	**NTCSD02200**
sample_dat	19980827	19990812	19980825	19980826	19990811	19980827	19990812	19990812	19980826	19990812	19980826
qc_type	NM	NM	NM	FD	NM	NM	NM	FD	NM	NM	NM
sacode	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL
matrix	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
top_depth	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
bottom_dep	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
depth_unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	450 U		710 U	440 U		420 U			440 U		410 U
HEXACHLOROBUTADIENE	450 U		710 U	440 U		420 U			440 U		410 U
HEXACHLOROCYCLOPENTADIENE	450 U		710 U	440 U		420 U			440 U		410 U
HEXACHLOROETHANE	450 U		710 U	440 U		420 U			440 U		410 U
INDENO(1,2,3-CD)PYRENE	450 U		710 U	440 U		420 U			440 U		410 U
ISOPHORONE	450 U		710 U	440 U		420 U			440 U		410 U
N-NITROSO-DI-N-PROPYLAMINE	22 U		36 U	22 U		21 U			22 U		21 U
N-NITROSODIPHENYLAMINE	450 U		710 U	440 U		420 U			440 U		410 U
NAPHTHALENE	450 U		710 U	440 U		420 U			440 U		410 U
NITROBENZENE	450 U		710 U	440 U		420 U			440 U		410 U
PHENANTHRENE	450 U		710 U	440 U		420 U			440 U		410 U
PHENOL	450 U		710 U	440 U		420 U			440 U		410 U
PYRENE	450 U		710 U	440 U		420 U			440 U		410 U
Pesticides/PCBs (µg/kg)											
4,4'-DDD	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
4,4'-DDE	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
4,4'-DDT	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
ALDRIN	2.2 U	4.6 U	3.6 U	2.2 U	2.4 U	2.1 U	2.1 U	2.2 U	2.2 U	2.3 U	2.1 U
ALPHA-BHC	2.2 U	4.6 U	3.6 U	2.2 U	2.4 U	2.1 U	2.1 U	2.2 U	2.2 U	2.3 U	2.1 U
ALPHA-CHLORDANE	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
AROCLOR-1016			0 U								
AROCLOR-1221			0 U								
AROCLOR-1232			0 U								
AROCLOR-1242			0 U								
AROCLOR-1248			0 U								
AROCLOR-1254			0 U								
AROCLOR-1260			0 U								
BETA-BHC	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
DELTA-BHC	2.2 U	4.6 U	3.6 U	2.2 U	2.4 U	2.1 U	2.1 U	2.2 U	2.2 U	2.3 U	2.1 U
DIELDRIN	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
ENDOSULFAN I	2.2 U	4.6 U	3.6 U	2.2 U	2.4 U	2.1 U	2.1 U	2.2 U	2.2 U	2.3 U	2.1 U
ENDOSULFAN II	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
ENDOSULFAN SULFATE	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
ENDRIN	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
ENDRIN ALDEHYDE	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
ENDRIN KETONE	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
GAMMA-BHC (LINDANE)	2.2 U	4.6 U	3.6 U	2.2 U	2.4 U	2.1 U	2.1 U	2.2 U	2.2 U	2.3 U	2.1 U
GAMMA-CHLORDANE	4.5 U	4.6 U	7.1 U	4.4 U	2.4 U	4.2 U	2.1 U	2.2 U	4.4 U	2.3 U	4.1 U
HEPTACHLOR	2.2 U	4.6 U	3.6 U	2.2 U	2.4 U	2.1 U	2.1 U	2.2 U	2.2 U	2.3 U	2.1 U
HEPTACHLOR EPOXIDE	2.2 U	4.6 U	3.6 U	2.2 U	2.4 U	2.1 U	2.1 U	2.2 U	2.2 U	2.3 U	2.1 U
METHOXYCHLOR	22 U	8.9 U	36 U	22 U	4.7 U	21 U	4.2 U	4.2 U	22 U	4.4 U	21 U
TOXAPHENE	220 U	180 U	360 U	220 U	95 U	210 U	84 U	85 U	220 U	90 U	210 U

location	OU2SW018		OU2SW018		OU2SW019		OU2SW019		OU2SW019		OU2SW020		OU2SW020		OU2SW020		OU2SW021		OU2SW021		OU2SW022	
nsample	**NTCSD01800**		**NTCSD01803**		**NTCSD01900**		**NTCSD01900-D**		**NTCSD01903**		**NTCSD02000**		**NTCSD02003**		**NTCSD02003-D**		**NTCSD02100**		**NTCSD02103**		**NTCSD02200**	
sample_dat	19980827		19990812		19980825		19980826		19990811		19980827		19990812		19990812		19980826		19990812		19980826	
qc_type	NM		NM		NM		FD		NM		NM		NM		FD		NM		NM		NM	
sacode	NORMAL		NORMAL		NORMAL		DUP		NORMAL		NORMAL		NORMAL		DUP		NORMAL		NORMAL		NORMAL	
matrix	SD		SD		SD		SD		SD		SD		SD		SD		SD		SD		SD	
top_depth	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
bottom_dep	-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999		-9999	
depth_unit	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Inorganics (mg/kg)																						
ALUMINUM	4310		6490	J	9350		1890		5970		7170		6260	J	1420	J	2240		726	J	4640	
ANTIMONY	0.51	U	0.59	U	0.8	U	0.49	U	0.31	U	0.47	U	0.28	U	0.28	U	0.5	U	0.3	U	0.47	U
ARSENIC	0.42	U	0.8		1.2	U	0.41	U	1.5	U	0.39	U	0.47		0.29	U	0.41	U	0.31	U	0.39	U
BARIUM	19.7		16.3		191		12		19.5		72.5		30.4		7.1		11.7		3.2		17.4	
BERYLLIUM	0.26	U	0.11	U	1.4	U	0.21	U	0.56	U	0.24	U	0.03	U	0.02	U	0.19	U	0.03	U	0.22	U
CADMIUM	0.36	U	0.05	U	0.28	U	0.11	U	0.05	U	0.06	U	0.03	U	0.03	U	0.44	U	0.03	U	0.3	U
CALCIUM	348		223	U	925		444		291		403		274	U	136	U	693		326	U	314	
CHROMIUM	5.1		6.7	J	10.6		3.3		7		7.1		6.4	J	1.8	J	3		1.3	U	4.7	
COBALT	0.22	U	0.26	U	0.34	U	0.23	U	0.4	U	0.24	U	0.21	U	0.08	U	0.15	U	0.09	U	0.21	U
COPPER	2.1		3.6		10		2.4		8.3		1.8		0.3	U	0.37	U	2.2		0.56	U	2.5	
CYANIDE																						
IRON	219		296	J	657		471		684	J	606		519	J	156	J	344		245	J	272	
LEAD	4.1		4.9	J	7.6		4.3		7.3		4.8		4.7	J	1.3	J	2.7		0.97	J	3.5	
MAGNESIUM	123		105	U	186		80.1		58		204		168		42.7	U	108		25.8	U	147	
MANGANESE	0.77	U	3	U	1.9		1.7		1.3		0.64	U	2.2	U	1.9	U	1.6		0.6	U	0.83	U
MERCURY	0.06	U	0.06		0.02		0.05	U	0.08	U	0.05	U	0.04		0.02		0.06	U	0.02	U	0.05	U
NICKEL	0.37	U	1.6	U	2		0.45	U	2.1	U	1.2		1.6	U	0.65	U	0.34	U	0.47	U	1	U
POTASSIUM	48.9	U	82.5	U	70.7	U	43.2	U	51.8	U	65.2	U	103	U	32.6	U	70.7	U	26.7	U	71.9	
SELENIUM	0.43	U	0.94	U	1.9	U	0.3	U	0.87		0.96	U	1.1	U	0.44	U	0.31	U	0.47	U	1.2	U
SILVER	0.23	UJ	0.16	U	0.37	UJ	0.23	UJ	0.08	U	0.22	UJ	0.08	U	0.08	U	0.3	U	0.08	U	0.22	UJ
SODIUM	44.6	U	205	U	70.9	U	43.6	U	101	U	41.8	U	67.8	U	102	U	89		72.2	U	44.9	
THALLIUM	0.52	U	0.16	UJ	0.82	U	0.51	U	0.08	UJ	0.49	U	0.08	UJ	0.22	U	0.51	U	0.08	UJ	0.48	U
VANADIUM	2.9		4.8		26.1		1.9		17.6		5.6		5.1		1.3		1.7		0.7		4.4	
ZINC	16.3	J	7.3	U	17.9	J	15.9	J	9		8.5	J	2.2	U	1.5	U	14.1	J	2.2	U	9	J
Herbicides (µg/kg)																						
2,4,5-T	1.6	U			2	U	1.8	U			1.7	U					1.7	U			1.6	U
2,4,5-TP (SILVEX)	1.9	U			2.4	U	2	U			2	U					2	U			1.8	U
2,4-D	8.8	U			11	U	9.4	U			9.1	U					9.1	U			8.4	U
2,4-DB	5	U			6.2	U	5.4	U			5.2	U					5.2	U			4.8	U
DALAPON	10	U			12	U	11	U			10	U					10	U			9.6	U
DICAMBA	5	U			6.2	U	5.4	U			5.2	U					5.2	U			4.8	U
DICHLOROPROP	25	U			31	U	27	U			26	U					26	U			24	U
DINOSEB	5	U			6.2	U	5.4	U			5.2	U					5.2	U			4.8	U
MCPA	2500	U			3100	U	2700	U			2600	U					2600	U			2400	U

location	OU2SW018		OU2SW018	OU2SW019		OU2SW019		OU2SW019	OU2SW020		OU2SW020		OU2SW020	OU2SW021		OU2SW021		OU2SW022	
nsample	**NTCSD01800**		**NTCSD01803**	**NTCSD01900**		**NTCSD01900-D**		**NTCSD01903**	**NTCSD02000**		**NTCSD02003**		**NTCSD02003-D**	**NTCSD02100**		**NTCSD02103**		**NTCSD02200**	
sample_dat	19980827		19990812	19980825		19980826		19990811	19980827		19990812		19990812	19980826		19990812		19980826	
qc_type	NM		NM	NM		FD		NM	NM		NM		FD	NM		NM		NM	
sacode	NORMAL		NORMAL	NORMAL		DUP		NORMAL	NORMAL		NORMAL		DUP	NORMAL		NORMAL		NORMAL	
matrix	SD		SD	SD		SD		SD	SD		SD		SD	SD		SD		SD	
top_depth	-9999		-9999	-9999		-9999		-9999	-9999		-9999		-9999	-9999		-9999		-9999	
bottom_dep	-9999		-9999	-9999		-9999		-9999	-9999		-9999		-9999	-9999		-9999		-9999	
depth_unit	NA		NA	NA		NA		NA	NA		NA		NA	NA		NA		NA	
MCPP	1200	U		1600	U	1400	U		1300	U				1300	U			1200	U
PENTACHLOROPHENOL	2.5	U		3.1	U	2.7	U		2.6	U				2.6	U			2.4	U
Petroleum Hydrocarbons (mg/kg)																			
DIESEL RANGE ORGANICS																			
GASOLINE RANGE ORGANICS																			
TOTAL PETROLEUM HYDROCARBONS	11	U		18	U	20			10	U				11	U			10	U
Miscellaneous Parameters (mg/kg)																			
CYANIDE	1.3	U		2.1	U	1.3	U		1.3	U				1.3	U			1.2	U
TOTAL ORGANIC CARBON	18300			41800		3220			11200					8700				5600	
Radiological (pCi/g)																			
ACTINIUM-228	1.8					1.6			0.8					0.4				1.2	
ACTINIUM-228 UNCERT.	0.4					0.3			0.3					0.2				0.4	
BISMUTH-214	2.5								0.9										
BISMUTH-214 UNCERT.	0.5								0.2										
GROSS ALPHA	11.6			8.7		11.1		7.9	4.1		3.1		4.5	4.5		0.6	U	7.5	
GROSS ALPHA UNCERT.	3.5			3.2		3.4			2.7					3.1				3.3	
GROSS BETA	0	U		0	U	0	U	2.6	0	U	2.2		1.9	0	U	0.9	U	0	U
GROSS BETA UNCERT.	2.5	U		2.5	U	2.7	U		2.5	U				2.4	U			2.5	U
LEAD-212	0.6			0.7		0.6			0.2					0.2				0.4	
LEAD-212 UNCERT.	0.2			0.2		0.1			0.1					0.1				0.1	
LEAD-214	2			1.4		1			0.9					0.6				0.9	
LEAD-214 UNCERT.	0.3			0.3		0.2			0.2					0.2				0.3	
POTASSIUM-40																			
POTASSIUM-40 UNCERT.																			
THALLIUM-208						0.3								0.2				0.5	
THALLIUM-208 UNCERT.						0.1								0.1				0.2	
THORIUM-228	0.3	J																	
THORIUM-230	0.6	J																	
THORIUM-232	0.3	J																	
URANIUM-234	0.4	J																	
URANIUM-235	0	UJ																	
URANIUM-238	0.3	J																	

Notes:

Abbreviations:

g = gram
kg = kilogram
mg = milligram
µg = microgram
NA = not applicable
pCi = picocurie

Qualifiers:

J = estimated
R = rejected
U = not detected

Groundwater, Northern Area

APPENDIX A
NORTHERN AREA GROUNDWATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

AREA	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH
LOCATION	OLDOU202A	OLDOU202A	OLDOU202A	OLDOU202B	OLDOU202B	OLDOU202B	OLDOU202B	OLDOU202B	OLDOU203A	OLDOU203A	OLDOU203A	OLDOU203A	OLDOU203A	OLDOU203A	OLDOU203A
SAMPLE ID	OLD-OU2-02A_20080319	OLD-OU2-02A_20081006	OLD-OU2-2A_20090331	OLD-OU2-02B_20080319	OLD-OU2-02B_20081007	LD-OU2-02B_20081007-AV	OLD-OU2-02B_20081007-I	OLD-OU2-2B_20090331	OLD-OU2-03A_20080319	OLD-OU2-03A_20081007	LD-OU2-03A_20081007-AV	OLD-OU2-03A_20081007-I	OLD-OU2-3A_20090331	LD-OU2-3A_20090331-AV	OLD-OU2-3A_20090331-D
SAMPLE DATE	20080319	20081006	20090331	20080319	20081007	20081007	20081007	20090331	20080319	20081007	20081007	20081007	20090331	20090331	20090331
Volatile Organics (µg/L)															
1,1,1,2-Tetrachloroethane	0.236 U		1 U	0.236 U				1 U	0.236 U				1 U	1 U	1 U
1,1,1-Trichloroethane	0.424 U	1 U	1 U	0.424 U	1 U	1 U	1 U	1 U	0.424 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.226 U	1 U	1 U	0.226 U	1 U	1 U	1 U	1 U	0.226 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	0.312 U	1 U	1 U	0.312 U	1 U	1 U	1 U	1 U	0.312 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	0.388 U	1 U	1 U	0.388 U	1 U	1 U	1 U	1 U	0.388 U	0.32 I	0.33 I	0.34 I	1 U	1 U	1 U
1,1-Dichloroethene	0.899 U	1 U	1 U	0.899 U	1 U	1 U	1 U	1 U	0.899 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	0.404 U		1 U	0.404 U				1 U	0.404 U				1 U	1 U	1 U
1,2,3-Trichlorobenzene	0.981 U		1 U	0.981 U				1 U	0.981 U				1 U	1 U	1 U
1,2,3-Trichloropropane	0.29 U		2 U	0.29 U				2 U	0.29 U				2 U	2 U	2 U
1,2,4-Trichlorobenzene	0.73 U		1 U	0.73 U				1 U	0.73 U				1 U	1 U	1 U
1,2,4-Trimethylbenzene	0.516 U		2 U	0.516 U				2 U	0.516 U				2 U	2 U	2 U
1,2-Dibromo-3-Chloropropane	1.63 U		2 U	1.63 U				2 U	1.63 U				2 U	2 U	2 U
1,2-Dibromoethane	0.363 U		1 U	0.363 U				1 U	0.363 U				1 U	1 U	1 U
1,2-Dichlorobenzene	0.394 U		1 U	0.394 U				1 U	0.394 U				1 U	1 U	1 U
1,2-Dichloroethane	0.989 U	1 U	1 U	0.989 U	1 U	1 U	1 U	1 U	0.989 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	0.563 U	1 U	1 U	0.563 U	1 U	1 U	1 U	1 U	0.563 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	0.416 U		2 U	0.416 U				2 U	0.416 U				2 U	2 U	2 U
1,3-Dichlorobenzene	0.502 U		1 U	0.502 U				1 U	0.502 U				1 U	1 U	1 U
1,3-Dichloropropane	0.28 U		1 U	0.28 U				1 U	0.28 U				1 U	1 U	1 U
1,4-Dichlorobenzene	0.412 U		1 U	0.412 U				1 U	0.412 U				0.74 I	0.74 I	1 U
2,2-Dichloropropane	0.795 U		1 U	0.795 U				1 U	0.795 U				1 U	1 U	1 U
2-Butanone	1.64 U	5 U	5 U	1.64 U	5 U	5 U	5 U	5 U	1.64 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chloroethyl Vinyl Ether			5 U					5 U					5 U	5 U	5 U
2-Chlorotoluene	0.661 U		1 U	0.661 U				1 U	0.661 U				1 U	1 U	1 U
2-Hexanone	0.935 U	10 U	10 U	0.935 U	10 U	10 U	10 U	10 U	0.935 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorotoluene	0.357 U		1 U	0.357 U				1 U	0.357 U				1 U	1 U	1 U
4-Isopropyltoluene	0.303 U		1 U	0.303 U				1 U	0.303 U				1 U	1 U	1 U
4-Methyl-2-Pentanone	0.323 U	5 U	5 U	0.323 U	5 U	5 U	5 U	5 U	0.323 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	1.18 U	25 U	25 U	1.18 U	25 U	25 U	25 U	25 U	7.42	25 U	25 U	25 U	18 I	18 I	25 U
Acrolein			20 U					20 U					20 U	20 U	20 U
Acrylonitrile			10 U					10 U					10 U	10 U	10 U
Benzene	0.305 U	1 U	1 U	0.305 U	1 U	1 U	1 U	1 U	0.305 U	8.8	9.15	9.5	0.71 I	0.81 I	0.91 I
Bromobenzene	0.536 U		1 U	0.536 U				1 U	0.536 U				1 U	1 U	1 U
Bromochloromethane	0.899 U		1 U	0.899 U				1 U	0.899 U				1 U	1 U	1 U
Bromodichloromethane	0.452 U	1 U	1 U	0.452 U	1 U	1 U	1 U	1 U	0.452 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	0.494 U	1 U	1 U	0.494 U	1 U	1 U	1 U	1 U	0.494 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U	2 U	2 U	1.42 UJ	2 U	2 U	2 U	2 U	2 U	2 U
Carbon Disulfide	0.5 U	2 U	2 U	0.5 U	2 U	2 U	2 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon Tetrachloride	0.5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	0.78 J	0.56 I	1 U	0.182 U	1 U	1 U	1 U	1 U	0.182 U	8	8.5	9	0.74 I	0.83 I	0.92 I
Chlorodibromomethane	0.374 U	1 U	1 U	0.374 U	1 U	1 U	1 U	1 U	0.374 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U	2 U	2 U	1.01 UJ	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	0.554 U	1 U	1 U	0.554 U	1 U	1 U	1 U	1 U	0.554 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	0.576 U	2 U	2 U	0.576 U	2 U	2 U	2 U	2 U	0.576 U	2 U	2 U	2 U	2 U	2 U	2 U
Cis-1,2-Dichloroethene	0.369 U	1 U	1 U	0.369 U	1 U	1 U	1 U	1 U	0.369 U	1.4	1.4	1.4	1 U	1 U	1 U

APPENDIX A
NORTHERN AREA GROUNDWATER DATA
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

AREA	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH
LOCATION	OLDOU202A	OLDOU202A	OLDOU202A	OLDOU202B	OLDOU202B	OLDOU202B	OLDOU202B	OLDOU202B	OLDOU203A	OLDOU203A	OLDOU203A	OLDOU203A	OLDOU203A	OLDOU203A	OLDOU203A
SAMPLE ID	OLD-OU2-02A_20080319	OLD-OU2-02A_20081006	OLD-OU2-2A_20090331	OLD-OU2-02B_20080319	OLD-OU2-02B_20081007	LD-OU2-02B_20081007-AV	OLD-OU2-02B_20081007-I	OLD-OU2-2B_20090331	OLD-OU2-03A_20080319	OLD-OU2-03A_20081007	LD-OU2-03A_20081007-AV	OLD-OU2-03A_20081007-I	OLD-OU2-3A_20090331	LD-OU2-3A_20090331-AV	OLD-OU2-3A_20090331-D
SAMPLE DATE	20080319	20081006	20090331	20080319	20081007	20081007	20081007	20090331	20080319	20081007	20081007	20081007	20090331	20090331	20090331
Cis-1,3-Dichloropropene	0.465 U	1 U	1 U	0.465 U	1 U	1 U	1 U	1 U	0.465 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	0.261 U		2 U	0.261 U				2 U	0.261 U				2 U	2 U	2 U
Dichlorodifluoromethane	0.844 UJ		2 U	0.844 UJ				2 U	0.844 UJ				2 U	2 U	2 U
Ethylbenzene	0.338 U	1 U	1 U	0.338 U	1 U	1 U	1 U	1 U	0.338 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	1.2 U		2 U	1.2 U				2 U	1.2 U				2 U	2 U	2 U
Isopropylbenzene	0.365 U		1 U	0.365 U				1 U	0.365 U				1 U	1 U	1 U
M+P-Xylenes			2 U					2 U					2 U	2 U	2 U
Methyl Tert-Butyl Ether	0.336 U		1 U	0.336 U				1 U	0.336 U				1 U	1 U	1 U
Methylene Chloride	0.834 U	5 U	5 U	0.834 U	5 U	5 U	5 U	5 U	0.834 U	5 U	5 U	5 U	1 I	1 I	5 U
N-Butylbenzene	0.319 U		1 U	0.319 U				1 U	0.319 U				1 U	1 U	1 U
N-Propylbenzene	0.669 U		1 U	0.669 U				1 U	0.669 U				1 U	1 U	1 U
Naphthalene	0.452 U		5 U	0.452 U				5 U	0.452 U				5 U	5 U	5 U
O-Xylene			1 U					1 U					1 U	1 U	1 U
Sec-Butylbenzene	0.539 U		1 U	0.539 U				1 U	0.539 U				1 U	1 U	1 U
Styrene	0.203 U	1 U	1 U	0.203 U	1 U	1 U	1 U	1 U	0.203 U	1 U	1 U	1 U	1 U	1 U	1 U
Tert-Butylbenzene	0.776 U		1 U	0.776 U				1 U	0.776 U				1 U	1 U	1 U
Tetrachloroethene	0.381 U	1 U	1 U	0.381 U	1 U	1 U	1 U	1 U	0.381 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	0.257 U	1 U	1 U	0.257 U	1 U	1 U	1 U	1 U	0.257 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	0.433 U	3 U		0.433 U	3 U	3 U	3 U		0.433 U	2.4 I	2.75 I	3.1			
Trans-1,2-Dichloroethene	0.244 U	1 U	1 U	0.244 U	1 U	1 U	1 U	1 U	0.244 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	0.229 U	1 U	1 U	0.229 U	1 U	1 U	1 U	1 U	0.229 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	0.574 U	1 U	1 U	0.574 U	1 U	1 U	1 U	1 U	0.574 U	0.32 I	0.32 I	1 U	1 U	1 U	1 U
Trichlorofluoromethane	0.672 U		2 U	0.672 UJ				2 U	0.672 U				2 U	2 U	2 U
Vinyl Acetate			10 U					10 U					10 U	10 U	10 U
Vinyl Chloride	0.986 U	1 U	1 U	0.986 U	1 U	1 U	1 U	1 U	0.986 U	2.9	2.75	2.6	1 U	1 U	1 U
Volatile Gases (µg/L)															
Ethane	0.03		1 U	0.01 U	1 U	1 U		1 U	0.07	1 U	1 U		1 U	1 U	
Ethene	0.03		1 U	0.01 U	1 U	1 U		1 U	0.01 U	1 U	1 U		1 U	1 U	
Methane	2050.3		2010	78.5	77.3	77.3		114	3341.5	4130	4130		3490	3490	
Inorganics (µg/L)															
Iron	26400	24300	34300	2180	3870	3875	3880	2660	72600	12600	13150	13700	6100	6630	7160
Manganese	67.1	72.2	209	16.3	16.7	16.35	16	14 I	1310	66.5	65.8	65.1	337	364	391
Miscellaneous Parameters (mg/L)															
Alkalinity	296	269	620	21.1	12.4	12.4		26	285	37.3	37.3		203	203	
Ammonia-N		12	51		0.11	0.11		0.1 U		0.83	0.83		4	4	
Ammonium	0.0903			0.02 U					0.02 U						
Carbon Dioxide	281.9			143.7					221.3						
Chloride	29.5	23.9	24	62.8	59.1	59.1		47	78.4	62.7	62.7		70	70	
Dissolved Organic Carbon	61.4			8.76					67						
Nitrate-N	0.048	0.08 I	0.1 U	0.155	0.1	0.1		0.11	0.042	0.09 I	0.09 I		0.13	0.13	
Nitrite-N	0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U		0.1 U	0.0075 U	0.1 U	0.1 U		0.1 U	0.1 U	
Nitrogen	14.9			11.6					6.6						
Orthophosphate-P	0.161	0.1 U	0.2 U	0.388	1.6	1.6		0.15	0.0036 U	0.077 I	0.077 I		0.1 U	0.1 U	
Oxygen	1.97			1.31					0.16						
Sulfate	2 U	12.4	2 U	32.7	27	27		19	109	8	8		15	15	
Total Organic Carbon		16	73		11.8	11.8		9		55.1	55.1		30	30	

AREA	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH
LOCATION	OLDOU203B	OLDOU203B	OLDOU203B	OLDOU229A	OLDOU229A	OLDOU229A	OLDOU229B	OLDOU229B	OLDOU229B	OLDOU230A	OLDOU230A	OLDOU230A	OLDOU230B	OLDOU230B	OLDOU230B
SAMPLE ID	OLD-OU2-03B1_20080319	OLD-OU2-03B_20081006	OLD-OU2-3B_20090331	OLD-OU2-29A_20080319	OLD-OU2-29A_20081003	OLD-OU2-29A_20090330	OLD-OU2-29B_20080319	OLD-OU2-29B_20081003	OLD-OU2-29B_20090331	OLD-OU2-30A_20080319	OLD-OU2-30A_20081003	OLD-OU2-30A_20090331	OLD-OU2-30B_20080319	OLD-OU2-30B_20081003	OLD-OU2-30B_20090331
SAMPLE DATE	20080319	20081006	20090331	20080319	20081003	20090330	20080319	20081003	20090331	20080319	20081003	20090331	20080319	20081003	20090331
Volatile Organics (µg/L)															
1,1,1,2-Tetrachloroethane	0.236 U		1 U	0.236 U		1 U	0.236 U		1 U	0.236 U		1 U	0.236 U		1 U
1,1,1-Trichloroethane	0.424 U	1 U	1 U	0.424 U	1 U	1 U	0.424 U	1 U	1 U	0.424 U	1 U	1 U	0.424 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.226 U	1 U	1 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U
1,1,2-Trichloroethane	0.312 U	1 U	1 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U
1,1-Dichloroethane	0.388 U	1 U	1 U	0.388 U	1 U	1 U	0.388 U	1 U	1 U	0.388 U	1 U	1 U	0.388 U	1 U	1 U
1,1-Dichloroethene	0.899 U	1 U	1 U	0.899 U	1 U	1 U	0.899 U	1 U	1 U	0.899 U	1 U	1 U	0.899 U	1 U	1 U
1,1-Dichloropropene	0.404 U		1 U	0.404 U		1 U	0.404 U		1 U	0.404 U		1 U	0.404 U		1 U
1,2,3-Trichlorobenzene	0.981 U		1 U	0.981 U		1 U	0.981 U		1 U	0.981 U		1 U	0.981 U		1 U
1,2,3-Trichloropropane	0.29 U		2 U	0.29 U		2 U	0.29 U		2 U	0.29 U		2 U	0.29 U		2 U
1,2,4-Trichlorobenzene	0.73 U		1 U	0.73 U		1 U	0.73 U		1 U	0.73 U		1 U	0.73 U		1 U
1,2,4-Trimethylbenzene	0.516 U		2 U	0.516 U		2 U	0.516 U		2 U	0.516 U		2 U	0.516 U		2 U
1,2-Dibromo-3-Chloropropane	1.63 U		2 U	1.63 U		2 U	1.63 U		2 U	1.63 U		2 U	1.63 U		2 U
1,2-Dibromoethane	0.363 U		1 U	0.363 U		1 U	0.363 U		1 U	0.363 U		1 U	0.363 U		1 U
1,2-Dichlorobenzene	0.394 U		1 U	0.394 U		1 U	0.394 U		1 U	0.394 U		1 U	0.394 U		1 U
1,2-Dichloroethane	0.989 U	1 U	1 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U
1,2-Dichloropropane	0.563 U	1 U	1 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U
1,3,5-Trimethylbenzene	0.416 U		2 U	0.416 U		2 U	0.416 U		2 U	0.416 U		2 U	0.416 U		2 U
1,3-Dichlorobenzene	0.502 U		1 U	0.502 U		1 U	0.502 U		1 U	0.502 U		1 U	0.502 U		1 U
1,3-Dichloropropane	0.28 U		1 U	0.28 U		1 U	0.28 U		1 U	0.28 U		1 U	0.28 U		1 U
1,4-Dichlorobenzene	0.412 U		1 U	0.412 U		1 U	0.412 U		1 U	0.412 U		1 U	0.71 J		1
2,2-Dichloropropane	0.795 U		1 U	0.795 U		1 U	0.795 U		1 U	0.795 U		1 U	0.795 U		1 U
2-Butanone	1.64 U	5 U	5 U	1.64 U	5 U	5 U	1.64 U	5 U	5 U	1.64 U	5 U	5 U	1.64 U	5 U	5 U
2-Chloroethyl Vinyl Ether			5 U			5 U			5 U			5 U			5 U
2-Chlorotoluene	0.661 U		1 U	0.661 U		1 U	0.661 U		1 U	0.661 U		1 U	0.661 U		1 U
2-Hexanone	0.935 U	10 U	10 U	0.935 U	10 U	10 U	0.935 U	10 U	10 U	0.935 U	10 U	10 U	0.935 U	10 U	10 U
4-Chlorotoluene	0.357 U		1 U	0.357 U		1 U	0.357 U		1 U	0.357 U		1 U	0.357 U		1 U
4-Isopropyltoluene	0.303 U		1 U	0.303 U		1 U	0.303 U		1 U	0.303 U		1 U	0.303 U		1 U
4-Methyl-2-Pentanone	0.323 U	5 U	5 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U
Acetone	1.18 U	25 U	25 U	1.18 U	25 U	25 U	1.18 U	25 U	25 U	1.18 U	11 I	25 U	5.15	10.9 I	25 U
Acrolein			20 U			20 U			20 U			20 U			20 U
Acrylonitrile			10 U			10 U			10 U			10 U			10 U
Benzene	0.305 U	1 U	1 U	0.305 U	1 U	1 U	0.305 U	1 U	1 U	0.305 U	1 U	1 U	0.63 J	0.45 I	1 U
Bromobenzene	0.536 U		1 U	0.536 U		1 U	0.536 U		1 U	0.536 U		1 U	0.536 U		1 U
Bromochloromethane	0.899 U		1 U	0.899 U		1 U	0.899 U		1 U	0.899 U		1 U	0.899 U		1 U
Bromodichloromethane	0.452 U	1 U	1 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U
Bromoform	0.494 U	1 U	1 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U
Bromomethane	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U
Carbon Disulfide	0.5 U	2 U	2 U	0.5 U	2 U	2 U	0.5 U	2 U	2 U	0.5 U	2 U	2 U	0.5 U	2 U	2 U
Carbon Tetrachloride	0.5 U	1 U	1 U	0.5 U	1 U	1 U	0.5 U	1 U	1 U	0.5 U	1 U	1 U	0.5 U	1 U	1 U
Chlorobenzene	0.182 U	0.78 I	1 U	0.182 U	1 U	1 U	0.182 U	1 U	1 U	0.182 U	1 U	1 U	1.21	0.85 I	2
Chlorodibromomethane	0.374 U	1 U	1 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U
Chloroethane	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U
Chloroform	0.554 U	1 U	1 U	0.554 U	1 U	1 U	0.554 U	1 U	1 U	0.554 U	1 U	1 U	0.554 U	1 U	1 U
Chloromethane	0.576 U	2 U	2 U	0.576 U	2 U	2 U	0.576 U	2 U	2 U	0.576 U	2 U	2 U	0.576 U	2 U	2 U
Cis-1,2-Dichloroethene	0.369 U	1 U	1 U	0.369 U	1 U	1 U	0.369 U	1 U	1 U	0.369 U	1 U	1 U	0.369 U	1 U	1 U

AREA	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH	OU2-NORTH
LOCATION	OLDOU203B	OLDOU203B	OLDOU203B	OLDOU229A	OLDOU229A	OLDOU229A	OLDOU229B	OLDOU229B	OLDOU229B	OLDOU230A	OLDOU230A	OLDOU230A	OLDOU230B	OLDOU230B	OLDOU230B
SAMPLE ID	OLD-OU2-03B1_20080319	OLD-OU2-03B_20081006	OLD-OU2-3B_20090331	OLD-OU2-29A_20080319	OLD-OU2-29A_20081003	OLD-OU2-29A_20090330	OLD-OU2-29B_20080319	OLD-OU2-29B_20081003	OLD-OU2-29B_20090331	OLD-OU2-30A_20080319	OLD-OU2-30A_20081003	OLD-OU2-30A_20090331	OLD-OU2-30B_20080319	OLD-OU2-30B_20081003	OLD-OU2-30B_20090331
SAMPLE DATE	20080319	20081006	20090331	20080319	20081003	20090330	20080319	20081003	20090331	20080319	20081003	20090331	20080319	20081003	20090331
Cis-1,3-Dichloropropene	0.465 U	1 U	1 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U
Dibromomethane	0.261 U		2 U	0.261 U		2 U	0.261 U		2 U	0.261 U		2 U	0.261 U		2 U
Dichlorodifluoromethane	0.844 UJ		2 U	0.844 UJ		2 U	0.844 UJ		2 U	0.844 UJ		2 U	0.844 UJ		2 U
Ethylbenzene	0.338 U	1 U	1 U	0.338 U	1 U	1 U	0.338 U	1 U	1 U	0.338 U	1 U	1 U	0.338 U	1 U	1 U
Hexachlorobutadiene	1.2 U		2 U	1.2 U		2 U	1.2 U		2 U	1.2 U		2 U	1.2 U		2 U
Isopropylbenzene	0.365 U		1 U	0.365 U		1 U	0.365 U		1 U	0.365 U		1 U	0.365 U		1 U
M+P-Xylenes			2 U			2 U			2 U			2 U			2 U
Methyl Tert-Butyl Ether	0.336 U		1 U	0.336 U		1 U	0.336 U		1 U	0.336 U		1 U	0.336 U		1 U
Methylene Chloride	0.834 U	5 U	5 U	0.834 U	5 U	5 U	0.834 U	5 U	5 U	0.834 U	5 U	5 U	0.834 U	5 U	5 U
N-Butylbenzene	0.319 U		1 U	0.319 U		1 U	0.319 U		1 U	0.319 U		1 U	0.319 U		1 U
N-Propylbenzene	0.669 U		1 U	0.669 U		1 U	0.669 U		1 U	0.669 U		1 U	0.669 U		1 U
Naphthalene	0.452 U		5 U	0.452 U		5 U	0.452 U		5 U	0.452 U		5 U	0.452 U		5 U
O-Xylene			1 U			1 U			1 U			1 U			1 U
Sec-Butylbenzene	0.539 U		1 U	0.539 U		1 U	0.539 U		1 U	0.539 U		1 U	0.539 U		1 U
Styrene	0.203 U	1 U	1 U	0.203 U	1 U	1 U	0.203 U	1 U	1 U	0.203 U	1 U	1 U	0.203 U	1 U	1 U
Tert-Butylbenzene	0.776 U		1 U	0.776 U		1 U	0.776 U		1 U	0.776 U		1 U	0.776 U		1 U
Tetrachloroethene	0.381 U	1 U	1 U	0.381 U	1 U	1 U	0.381 U	1 U	1 U	0.381 U	1 U	1 U	0.381 U	1 U	1 U
Toluene	0.257 U	1 U	1 U	0.257 U	1 U	1 U	0.257 U	1 U	1 U	0.257 U	1 U	1 U	0.257 U	1 U	1 U
Total Xylenes	0.433 U	3 U		0.433 U	3 U		0.433 U	3 U		0.433 U	3 U		0.433 U	3 U	
Trans-1,2-Dichloroethene	0.244 U	1 U	1 U	0.244 U	1 U	1 U	0.244 U	1 U	1 U	0.244 U	1 U	1 U	0.244 U	1 U	1 U
Trans-1,3-Dichloropropene	0.229 U	1 U	1 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U
Trichloroethene	0.574 U	4.4	1 U	0.574 U	1 U	1 U	0.574 U	1 U	1 U	0.574 U	1 U	1 U	0.574 U	1 U	1 U
Trichlorofluoromethane	0.672 U		2 U	0.672 U		2 U	0.672 U		2 U	0.672 U		2 U	0.672 U		2 U
Vinyl Acetate			10 U			10 U			10 U			10 U			10 U
Vinyl Chloride	0.986 U	1 U	1 U	0.986 U	1 U	1 U	0.986 U	1 U	1 U	0.986 U	1 U	1 U	0.986 U	1 U	1 U
Volatile Gases (µg/L)															
Ethane	0.01 U	1 U	1 U	0.02	1 U	1 U	0.01 U	1 U	1 U	0.01 U	1 U	1 U	0.13	1 U	1 U
Ethene	0.01 U	1 U	1 U	0.05	1 U	1 U	0.01 U	1 U	1 U	0.03	1 U	1 U	0.06	1 U	1 U
Methane	0 U	315	351	120.9	127	187	94.1	311	475	136.7	722	105	1811.1	1660	3680
Inorganics (µg/L)															
Iron	3780	14500	9060	7030	6350	5240	2440	3470	2290	4780	11400	24200	26200	21300	31100
Manganese	18.6	23.2	21	5.3 J	4.9 I	3 I	6.1 J	11.2 I	6 I	23.9	50.8	47	100	121	134
Miscellaneous Parameters (mg/L)															
Alkalinity	57.7	61.5	72	13.7	12.9	5	23.8	13.9	20	28.5	59.3	48	217	163	241
Ammonia-N		7.3	6		0.24	0.25		0.17	0.085 I		0.67	0.58		2.1	2
Ammonium	0.02 U			0.02 U			0.02 U			0.02 U			0.02 U		
Carbon Dioxide	68.9			128.7			48			91.1			180.6		
Chloride	56	61	64	33.2	32.8	22	16.8	18.1	15	11.6	6.5	19	52.8	30.2	63
Dissolved Organic Carbon	24.7			28.8			5.66			56.6			36.3		
Nitrate-N	4.96	0.1 U	0.11	0.073	0.1 U	0.1 U	0.0092 U	0.1 U	0.1 U	0.05	0.1 U	0.1 U	0.0092 U	0.1 U	0.1 U
Nitrite-N	0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U
Nitrogen	12			25			2.5			10.2			11.8		
Orthophosphate-P	0.025	0.83	0.26	0.02	0.38	0.42	1.78	2.7	5	0.0915	0.1 U	3 I	0.115	0.21	0.1 U
Oxygen	1.13			4.73			0.31			2.08			2.59		
Sulfate	17.9	24.4	18	23.7	35.6	13	2 U	10	1 I	10.6	9.4	1 I	10.3	8.6	3
Total Organic Carbon		39.9	10		37.3	12		9.3	4		52.3	32		47.9	43

Notes:

Abbreviations:

L = liter
mg = milligram
µg = microgram

Qualifiers:

I = between the laboratory detection limit and the laboratory practical quantitation limit
J = estimated
U = not detected

Groundwater, Southern Area

APPENDIX A
SOUTHERN AREA GROUNDWATER DATA, JANUARY 2008 TO MARCH 2009
OPERABLE UNIT 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU212B	OLDOU212B	OLDOU212B	OLDOU218A	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B
SAMPLE ID	OLD-OU2-12B1_20080318	OLD-OU2-12B_20081006	OLD-OU2-12B_20090326	TO02OU2MW18ABL	OLD-OU2-18B_20080319	OLD-OU2-18B_20080319-D	TO02OU2MW18BBL	OLD-OU2-18B_20081006	TO02MW18BEQ109	OLD-OU2-18B_20090326
SAMPLE DATE	20080318	20081006	20090326	20080612	20080319	20080319	20080612	20081006	20090121	20090326
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane	0.236 U		1 U		0.236 U	0.236 U				20 U
1,1,1-Trichloroethane	0.424 U	1 U	1 U	1 U	0.424 U	0.424 U	40 U	50 U	12 U	20 U
1,1,2,2-Tetrachloroethane	0.226 U	1 U	1 U	0.25 U	0.226 U	0.226 U	10 U	50 U	3.1 U	20 U
1,1,2-Trichloroethane	0.312 U	1 U	1 U	1 U	1.79	1.84	40 U	50 U	12 U	20 U
1,1,2-Trichlorotrifluoroethane				1 U			40 U		12 U	
1,1-Dichloroethane	0.388 U	1 U	1 U	1 U	0.388 U	0.388 U	40 U	50 U	12 U	20 U
1,1-Dichloroethene	0.899 U	1 U	1 U	1 U	2.26	2.69	40 U	50 U	12 U	20 U
1,1-Dichloropropene	0.404 U		1 U		0.404 U	0.404 U				20 U
1,2,3-Trichlorobenzene	0.981 U		1 U	1 U	0.981 U	0.981 U	40 U		12 U	20 U
1,2,3-Trichloropropane	0.29 U		2 U		0.29 U	0.29 U				40 U
1,2,4-Trichlorobenzene	0.73 U		1 U	1 U	0.73 U	0.73 U	40 U		12 U	20 U
1,2,4-Trimethylbenzene	0.516 U		2 U		0.516 U	0.516 U				40 U
1,2-dibromo-3-Chloropropane	1.63 U		2 U	0.5 U	1.63 U	1.63 U	20 U		6.2 U	40 U
1,2-Dibromoethane	0.363 U		1 U	0.25 U	0.363 U	0.363 U	10 U		3.1 U	20 U
1,2-Dichlorobenzene	0.394 U		1 U	1 U	0.394 U	0.394 U	40 U		12 U	20 U
1,2-Dichloroethane	0.989 U	1 U	1 U	1 U	0.989 U	0.989 U	40 U	50 U	12 U	20 U
1,2-Dichloropropane	0.563 U	1 U	1 U	1 U	0.563 U	0.563 U	40 U	50 U	12 U	20 U
1,3,5-Trimethylbenzene	0.416 U		2 U		0.416 U	0.416 U				40 U
1,3-Dichlorobenzene	0.502 U		1 U	1 U	0.502 U	0.502 U	40 U		12 U	20 U
1,3-Dichloropropane	0.28 U		1 U		0.28 U	0.28 U				20 U
1,4-Dichlorobenzene	0.412 U		1 U	1 U	0.412 U	0.412 U	40 U		12 U	20 U
2,2-Dichloropropane	0.795 U		1 U		0.795 U	0.795 U				20 U
2-Butanone	1.64 U	5 U	5 U	10 U	1.64 U	1.64 U	400 U	250 U	120 U	100 U
2-Chloroethyl Vinyl Ether			5 U							100 U
2-Chlorotoluene	0.661 U		1 U		0.661 U	0.661 U				20 U
2-Hexanone	0.935 U	10 U	10 U	5 U	0.935 U	0.935 U	200 U	500 U	62 U	200 U
4-Chlorotoluene	0.357 U		1 U		0.357 U	0.357 U				20 U
4-Isopropyltoluene	0.303 U		1 U		0.303 U	0.303 U				20 U
4-methyl-2-Pentanone	0.323 U	5 U	5 U	5 U	0.323 U	0.323 U	200 UJ	250 U	62 U	100 U
Acetone	1.18 U	25 U	25 U	2.1 JB	1.18 U	1.18 U	400 U	1300 U	44 JB	500 U
Acrolein			20 U							400 U
Acrylonitrile			10 U							200 U
Benzene	0.305 U	0.96 I	1 U	1 U	0.74 J	0.75 J	40 U	50 U	12 U	20 U
Bromobenzene	0.536 U		1 U		0.536 U	0.536 U				20 U
Bromochloromethane	0.899 U		1 U	1 U	0.899 U	0.899 U	40 U		12 U	20 U
Bromodichloromethane	0.452 U	1 U	1 U	0.6 U	0.452 U	0.452 U	24 U	50 U	7.5 U	20 U
Bromoform	0.494 U	1 U	1 U	1 U	0.494 U	0.494 U	40 U	50 U	12 U	20 U
Bromomethane	1.42 U	2 U	2 U	1 UJ	1.42 UJ	1.42 UJ	40 U	100 U	12 UJ	40 U
Carbon Disulfide	0.5 U	2 U	2 U	1 U	0.5 U	0.5 U	40 U	100 U	12 U	40 U
Carbon Tetrachloride	0.5 U	1 U	1 U	1 U	0.5 U	0.5 U	40 U	50 U	12 U	20 U
Chlorobenzene	0.182 U	1 U	1 U	1 U	4.13	4.16	40 U	50 U	4.8 J	20 U
Chlorodibromomethane	0.374 U	1 U	1 U	0.4 U	0.374 U	0.374 U	16 U	50 U	5 U	20 U
Chloroethane	1.01 U	2 U	2 U	1 U	1.01 UJ	1.01 UJ	40 U	100 U	12 U	40 U

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU212B	OLDOU212B	OLDOU212B	OLDOU218A	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B
SAMPLE ID	OLD-OU2-12B1_20080318	OLD-OU2-12B_20081006	OLD-OU2-12B_20090326	TO02OU2MW18ABL	OLD-OU2-18B_20080319	OLD-OU2-18B_20080319-D	TO02OU2MW18BBL	OLD-OU2-18B_20081006	TO02MW18BEQ109	OLD-OU2-18B_20090326
SAMPLE DATE	20080318	20081006	20090326	20080612	20080319	20080319	20080612	20081006	20090121	20090326
Chloroform	0.554 U	1 U	1 U	1 U	0.554 U	0.554 U	40 U	50 U	7.7 J	20 U
Chloromethane	0.576 U	2 U	2 U	1 U	0.576 U	0.576 U	40 U	100 U	12 UJ	40 U
cis-1,2-Dichloroethene	0.369 U	1.8	0.35 I	1 U	287	292	200	174	1800	1640
cis-1,3-Dichloropropene	0.465 U	1 U	1 U	0.5 U	0.465 U	0.465 U	20 U	50 U	6.2 U	20 U
Cyclohexane				0.5 U			20 U		6.2 U	
Dibromomethane	0.261 U		2 U		0.261 U	0.261 U				40 U
Dichlorodifluoromethane	0.844 U		2 U	1 U	0.844 UJ	0.844 UJ	40 U		12 U	40 U
Ethylbenzene	0.338 U	1 U	1 U	1 U	0.47 J	0.5 J	40 U	50 U	12 U	20 U
Hexachlorobutadiene	1.2 U		2 U		1.2 U	1.2 U				40 U
Isopropylbenzene	0.365 U		1 U	0.8 U	0.365 U	0.365 U	32 U		10 U	20 U
m+p-Xylenes			2 U							40 U
Methyl Acetate				1 U			40 U		12 U	
Methyl Cyclohexane				0.6 U			24 U		7.5 U	
Methyl Tert-Butyl Ether	0.336 U		1 U	1 U	0.336 U	0.336 U	40 U		12 U	20 U
Methylene Chloride	0.834 U	5 U	5 U	1 U	0.834 U	0.834 U	13 JB	76.4 I	7.9 JB	39 I
n-Butylbenzene	0.319 U		1 U		0.319 U	0.319 U				20 U
n-Propylbenzene	0.669 U		1 U		0.669 U	0.669 U				20 U
Naphthalene	0.452 U		5 U		0.452 U	0.452 U				100 U
o-Xylene			1 U							20 U
sec-Butylbenzene	0.539 U		1 U		0.539 U	0.539 U				20 U
Styrene	0.203 U	1 U	1 U	1 U	0.203 U	0.203 U	40 U	50 U	12 U	20 U
tert-Butylbenzene	0.776 U		1 U		0.776 U	0.776 U				20 U
Tetrachloroethene	0.381 U	1 U	1 U	1 U	27.9	31.5	30 J	21.5 I	9.1 J	20 U
Toluene	0.257 U	1 U	1 U	1 U	1.38	1.42	40 U	50 U	12 U	20 U
Total Xylenes	0.433 U	3 U		1 U	0.65 J	0.49 J	40 U	150 U	12 U	
trans-1,2-Dichloroethene	0.244 U	1 U	1 U	1 U	1.48	1.44	40 U	50 U	12 U	20 U
trans-1,3-Dichloropropene	0.229 U	1 U	1 U	0.7 U	0.229 U	0.229 U	28 U	50 U	8.8 U	20 U
Trichloroethene	0.574 U	0.57 I	1 U	0.35 J	3760	4010	4400	3380	1000	20 U
Trichlorofluoromethane	0.672 U		2 U	1 U	0.672 U	0.672 U	40 UJ		12 U	40 U
Vinyl Acetate			10 U							200 U
Vinyl Chloride	0.986 U	0.7 I	1 U	1 U	56	56.8	50	33.5 I	28	48
Volatile Gases (µg/L)										
Ethane					0.67			0.42 I	1 U	0.62
Ethene					7.17			3.43	2.8	6
Methane					995.9			585	680 B	2650
Petroleum Hydrocarbons (mg/L)										
Total Petroleum Hydrocarbons				0.47 U			0.17 J			
Inorganics (µg/L)										
Iron					1050	1020		1260		2650
Manganese					8.3 J	7.8 J		8.7 I		19

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU212B	OLDOU212B	OLDOU212B	OLDOU218A	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B	OLDOU218B
SAMPLE ID	OLD-OU2-12B1_20080318	OLD-OU2-12B_20081006	OLD-OU2-12B_20090326	TO02OU2MW18ABL	OLD-OU2-18B_20080319	OLD-OU2-18B_20080319-D	TO02OU2MW18BBL	OLD-OU2-18B_20081006	TO02MW18BEQ109	OLD-OU2-18B_20090326
SAMPLE DATE	20080318	20081006	20090326	20080612	20080319	20080319	20080612	20081006	20090121	20090326
Miscellaneous Parameters (mg/L)										
Alkalinity				1 U	15.6		13.9	9.4		30
Ammonia-N								0.1 U		0.1 U
Ammonium					0.02 U					
Carbon Dioxide					189.3					
Chloride					15.7			15.9		13
Dissolved Organic Carbon					6.65					
Dissolved Oxygen										
Nitrate-N					0.023			0.1 U		0.1 U
Nitrite-N					0.0075 U			0.1 U		0.08 I
Nitrogen					10.5					
Orthophosphate-P					0.836			0.37		0.18
Oxygen					3.56					
Sodium				2.21 J			7.56			
Sulfate					14			19.2	25 U	2 U
Sulfide									7.4	
Total Dissolved Solids				29 J			13000 J			
Total Organic Carbon				3.1			4.6	6.8	248	84
Total Suspended Solids				4 UJ			4 UJ			
Field Parameters										
Depth To Groundwater (feet)							9.31		9.27	
Dissolved Oxygen (mg/L)							0.82		0.3	
Ferrous Iron (mg/L)									3	
Final Volume (gallons)							9.24		12.2	
Oxidation Reduction Potential (mV)							-98.1		-188	
pH							4.88		4.47	
Specific Conductance (µmhos)							137		326	
Temperature (°C)							34.3		24.2	
Turbidity (NTU)							4.85		0.65	

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU218B	OLDOU221A	OLDOU221A	OLDOU221A	OLDOU221B	OLDOU221B	OLDOU221B	OLDOU227A	OLDOU227A	OLDOU227A
SAMPLE ID	TO2OU218BEQ209	OLD-OU2-21A_20080319	OLD-OU2-21A_20081006	OLD-OU2-21A_20090331	OLD-OU2-21B_20080319	OLD-OU2-21B_20081006	OLD-OU2-21B_20090331	OLD-OU2-27A_20080319	OLD-OU2-27A_20081002	OLD-OU2-27A_20090327
SAMPLE DATE	20090423	20080319	20081006	20090331	20080319	20081006	20090331	20080319	20081002	20090327
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane		0.236 U		1 U	0.236 U		1 U	0.236 U		1 U
1,1,1-Trichloroethane	3.4 U	0.424 U	1 U	1 U	0.424 U	1 U	1 U	0.424 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U
1,1,2-Trichloroethane	2 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	3.6 U									
1,1-Dichloroethane	2.4 U	0.388 U	1 U	1 U	0.388 U	1 U	1 U	0.388 U	1 U	1 U
1,1-Dichloroethene	3 U	0.899 U	1 U	1 U	0.899 U	1 U	1 U	0.899 U	1 U	1 U
1,1-Dichloropropene		0.404 U		1 U	0.404 U		1 U	0.404 U		1 U
1,2,3-Trichlorobenzene	2 U	0.981 U		1 U	0.981 U		1 U	0.981 U		1 U
1,2,3-Trichloropropane		0.29 U		2 U	0.29 U		2 U	0.29 U		2 U
1,2,4-Trichlorobenzene	2 U	0.73 U		1 U	0.73 U		1 U	0.73 U		1 U
1,2,4-Trimethylbenzene		0.516 U		2 U	0.516 U		2 U	0.516 U		2 U
1,2-dibromo-3-Chloropropane	2.2 U	1.63 U		2 U	1.63 U		2 U	1.63 U		2 U
1,2-Dibromoethane	2 U	0.363 U		1 U	0.363 U		1 U	0.363 U		1 U
1,2-Dichlorobenzene	2 U	0.394 U		1 U	0.394 U		1 U	0.394 U		1 U
1,2-Dichloroethane	2 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U
1,2-Dichloropropane	2 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U
1,3,5-Trimethylbenzene		0.416 U		2 U	0.416 U		2 U	0.416 U		2 U
1,3-Dichlorobenzene	2.6 U	0.502 U		1 U	0.502 U		1 U	0.502 U		1 U
1,3-Dichloropropane		0.28 U		1 U	0.28 U		1 U	0.28 U		1 U
1,4-Dichlorobenzene	2 U	0.412 U		1 U	0.412 U		1 U	0.412 U		1 U
2,2-Dichloropropane		0.795 U		1 U	0.795 U		1 U	0.795 U		1 U
2-Butanone	20 J	1.64 U	5 U	5 U	1.64 U	5 U	5 U	1.64 U	5 U	5 U
2-Chloroethyl Vinyl Ether				5 U			5 U			5 U
2-Chlorotoluene		0.661 U		1 U	0.661 U		1 U	0.661 U		1 U
2-Hexanone	6 UJ	0.935 U	10 U	10 U	0.935 U	10 U	10 U	0.935 U	10 U	10 U
4-Chlorotoluene		0.357 U		1 U	0.357 U		1 U	0.357 U		1 U
4-Isopropyltoluene		0.303 U		1 U	0.303 U		1 U	0.303 U		1 U
4-methyl-2-Pentanone	5.8 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U
Acetone	25 JB	1.18 U	25 U	25 U	1.18 U	25 U	25 U	1.18 U	12.3 I	25 U
Acrolein				20 U			20 U			20 U
Acrylonitrile				10 U			10 U			10 U
Benzene	2.2 U	0.305 U	1 U	1 U	0.305 U	1 U	1 U	0.52 J	1 U	1 U
Bromobenzene		0.536 U		1 U	0.536 U		1 U	0.536 U		1 U
Bromochloromethane	2.2 U	0.899 U		1 U	0.899 U		1 U	0.899 U		1 U
Bromodichloromethane	2 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U
Bromoform	2 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U
Bromomethane	6.4 U	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U
Carbon Disulfide	2.6 U	0.5 U	2 U	2 U	0.5 U	2 U	2 U	0.5 U	2 U	2 U
Carbon Tetrachloride	3 U	0.5 U	1 U	1 U	0.5 U	1 U	1 U	0.5 U	1 U	1 U
Chlorobenzene	4.2 J	0.182 U	1 U	1 U	0.28 J	0.32 I	1 U	1.44	1 U	1 U
Chlorodibromomethane	2 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U
Chloroethane	3.6 U	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU218B	OLDOU221A	OLDOU221A	OLDOU221A	OLDOU221B	OLDOU221B	OLDOU221B	OLDOU227A	OLDOU227A	OLDOU227A
SAMPLE ID	TO2OU218BEQ209	OLD-OU2-21A_20080319	OLD-OU2-21A_20081006	OLD-OU2-21A_20090331	OLD-OU2-21B_20080319	OLD-OU2-21B_20081006	OLD-OU2-21B_20090331	OLD-OU2-27A_20080319	OLD-OU2-27A_20081002	OLD-OU2-27A_20090327
SAMPLE DATE	20090423	20080319	20081006	20090331	20080319	20081006	20090331	20080319	20081002	20090327
Chloroform	2.5 J	0.554 U	1 U	1 U	0.554 U	1 U	1 U	0.554 U	1 U	1 U
Chloromethane	5.8 U	0.576 U	2 U	2 U	0.576 U	2 U	2 U	0.576 U	2 U	2 U
cis-1,2-Dichloroethene	2400	0.369 U	1 U	1 U	0.58 J	0.98 I	0.88 I	0.369 U	0.57 I	1 U
cis-1,3-Dichloropropene	2.2 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U
Cyclohexane	4 U									
Dibromomethane		0.261 U		2 U	0.261 U		2 U	0.261 U		2 U
Dichlorodifluoromethane	4.4 U	0.844 UJ		2 U	0.844 UJ		2 U	0.844 UJ		2 U
Ethylbenzene	2.6 U	0.338 U	1 U	1 U	0.338 U	1 U	1 U	0.338 U	1 U	1 U
Hexachlorobutadiene		1.2 U		2 U	1.2 U		2 U	1.2 U		2 U
Isopropylbenzene	3 U	0.365 U		1 U	0.365 U		1 U	0.365 U		1 U
m+p-Xylenes				2 U			2 U			2 U
Methyl Acetate	6 U									
Methyl Cyclohexane	3.4 U									
Methyl Tert-Butyl Ether	2 U	0.336 U		1 U	0.336 U		1 U	0.336 U		1 U
Methylene Chloride	21 JB	0.834 U	5 U	5 U	0.834 U	5 U	5 U	0.834 U	5 U	5 U
n-Butylbenzene		0.319 U		1 U	0.319 U		1 U	0.319 U		1 U
n-Propylbenzene		0.669 U		1 U	0.669 U		1 U	0.669 U		1 U
Naphthalene		0.452 U		5 U	0.452 U		5 U	0.452 U		5 U
o-Xylene				1 U			1 U			1 U
sec-Butylbenzene		0.539 U		1 U	0.539 U		1 U	0.539 U		1 U
Styrene	2 U	0.203 U	1 U	1 U	0.203 U	1 U	1 U	0.203 U	1 U	1 U
tert-Butylbenzene		0.776 U		1 U	0.776 U		1 U	0.776 U		1 U
Tetrachloroethene	3 U	0.381 U	1 U	1 U	0.381 U	1 U	1 U	0.381 U	1 U	1 U
Toluene	2 U	0.257 U	1 U	1 U	0.257 U	1 U	1 U	0.257 U	1 U	1 U
Total Xylenes		0.433 U	3 U		0.433 U	3 U		0.433 U	3 U	
trans-1,2-Dichloroethene	2.6 U	0.244 U	1 U	1 U	0.244 U	1 U	1 U	0.244 U	1 U	1 U
trans-1,3-Dichloropropene	2 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U
Trichloroethene	56	0.574 U	1 U	1 U	0.574 U	1 U	1 U	0.574 U	1 U	1 U
Trichlorofluoromethane	3.4 U	0.672 U		2 U	0.672 U		2 U	0.672 U		2 U
Vinyl Acetate				10 U			10 U			10 U
Vinyl Chloride	33	0.986 U	1 U	1 U	0.986 U	1 U	1 U	0.986 U	1 U	1 U
Volatile Gases (µg/L)										
Ethane	1 U	0.01 U		1 U	0.05	1 U	1 U	3.53	1 U	1 U
Ethene	6.1	0.01 U		1 U	0.02	1 U	1 U	0.28	1 U	1 U
Methane	2500 JB	10.8		1	1740.3	1040	658	578.5	75.2	74
Petroleum Hydrocarbons (mg/L)										
Total Petroleum Hydrocarbons										
Inorganics (µg/L)										
Iron		199	1310	74 I	870	1160	1450	7820	8520	5740
Manganese		2 U	15 U	8 I	13.8 J	13.8 I	19	298	922	388

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU218B	OLDOU221A	OLDOU221A	OLDOU221A	OLDOU221B	OLDOU221B	OLDOU221B	OLDOU227A	OLDOU227A	OLDOU227A
SAMPLE ID	TO2OU218BEQ209	OLD-OU2-21A_20080319	OLD-OU2-21A_20081006	OLD-OU2-21A_20090331	OLD-OU2-21B_20080319	OLD-OU2-21B_20081006	OLD-OU2-21B_20090331	OLD-OU2-27A_20080319	OLD-OU2-27A_20081002	OLD-OU2-27A_20090327
SAMPLE DATE	20090423	20080319	20081006	20090331	20080319	20081006	20090331	20080319	20081002	20090327
Miscellaneous Parameters (mg/L)										
Alkalinity		0.368 U	5 U	5 U	37.6	24.5	34	29.2	42.8	27
Ammonia-N			0.1 U	0.1 U		0.1 U	0.1 U		3	2
Ammonium		0.02 U			0.02 U			0.02 U		
Carbon Dioxide		71.3			224.1			243.3		
Chloride		5.16	8	7	21.6	25.3	24	26.1	14.4	11
Dissolved Organic Carbon		3.19			10.5			17.8		
Dissolved Oxygen										
Nitrate-N		0.025	0.1 U	0.1 U	0.033	0.1 U	0.1 U	0.0092 U	0.1 U	0.1 U
Nitrite-N		0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U
Nitrogen		17.8			11.7			9.7		
Orthophosphate-P		0.0036 U	0.046 I	0.1 U	1.32	0.77	1	0.013	1.2	0.024 I
Oxygen		6.42			4.24			3.36		
Sodium										
Sulfate	1.25 J	6.78	10.2	7	15.1	17.5	20	43.1	49	33
Sulfide	7.3									
Total Dissolved Solids										
Total Organic Carbon	78.8		8.1	2		17.5	7		21.1	17
Total Suspended Solids										
Field Parameters										
Depth To Groundwater (feet)	8.99									
Dissolved Oxygen (mg/L)	0.41									
Ferrous Iron (mg/L)	4.5									
Final Volume (gallons)	6									
Oxidation Reduction Potential (mV)	-199									
pH	4.59									
Specific Conductance (µmhos)	366									
Temperature (°C)	24.5									
Turbidity (NTU)	0.88									

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU227B	OLDOU227B	OLDOU227B	OLDOU227B	OLDOU228B	OLDOU228B	OLDOU228B	OLDOU228B	OLDOU231A	OLDOU231A
SAMPLE ID	OLD-OU2-27B_20080319	OLD-OU2-27B_20080319-D	OLD-OU2-27B_20081002	OLD-OU2-27B_20090327	OLD-OU2-28B1_20080318	OLD-OU2-28B1_20080318-D	OLD-OU2-28B_20081002	OLD-OU2-28B_20090327	OLD-OU2-31A_20080320	OLD-OU2-31A_20081003
SAMPLE DATE	20080319	20080319	20081002	20090327	20080318	20080318	20081001	20090327	20080320	20081003
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane	0.236 U	0.236 U		1 U	0.236 U	0.236 U		1 U	0.236 U	
1,1,1-Trichloroethane	0.424 U	0.424 U	1 U	1 U	0.424 U	0.424 U	1 U	1 U	0.424 U	1 U
1,1,2,2-Tetrachloroethane	0.226 U	0.226 U	1 U	1 U	0.226 U	0.226 U	1 U	1 U	0.226 U	1 U
1,1,2-Trichloroethane	0.312 U	0.312 U	1 U	1 U	0.312 U	0.312 U	1 U	1 U	0.312 U	1 U
1,1,2-Trichlorotrifluoroethane										
1,1-Dichloroethane	0.388 U	0.388 U	1 U	1 U	0.388 U	0.388 U	1 U	1 U	0.388 U	1 U
1,1-Dichloroethene	0.899 U	0.899 U	1 U	1 U	0.899 U	0.899 U	1 U	1 U	0.899 U	1 U
1,1-Dichloropropene	0.404 U	0.404 U		1 U	0.404 U	0.404 U		1 U	0.404 U	
1,2,3-Trichlorobenzene	0.981 U	0.981 U		1 U	0.981 U	0.981 U		1 U	0.981 U	
1,2,3-Trichloropropane	0.29 U	0.29 U		2 U	0.29 U	0.29 U		2 U	0.29 U	
1,2,4-Trichlorobenzene	0.73 U	0.73 U		1 U	0.73 U	0.73 U		1 U	0.73 U	
1,2,4-Trimethylbenzene	1.13	0.99 J		2 U	0.516 U	0.516 U		2 U	0.516 U	
1,2-dibromo-3-Chloropropane	1.63 U	1.63 U		2 U	1.63 U	1.63 U		2 U	1.63 U	
1,2-Dibromoethane	0.363 U	0.363 U		1 U	0.363 U	0.363 U		1 U	0.363 U	
1,2-Dichlorobenzene	0.394 U	0.394 U		1 U	0.394 U	0.394 U		1 U	0.394 U	
1,2-Dichloroethane	0.989 U	0.989 U	1 U	1 U	0.989 U	0.989 U	1 U	1 U	0.989 U	1 U
1,2-Dichloropropane	0.563 U	0.563 U	1 U	1 U	0.563 U	0.563 U	1 U	1 U	0.563 U	1 U
1,3,5-Trimethylbenzene	0.48 J	0.45 J		2 U	0.416 U	0.416 U		2 U	0.416 U	
1,3-Dichlorobenzene	0.502 U	0.502 U		1 U	0.502 U	0.502 U		1 U	0.502 U	
1,3-Dichloropropane	0.28 U	0.28 U		1 U	0.28 U	0.28 U		1 U	0.28 U	
1,4-Dichlorobenzene	11.7	9.85		6	0.412 U	0.412 U		1 U	0.412 U	
2,2-Dichloropropane	0.795 U	0.795 U		1 U	0.795 U	0.795 U		1 U	0.795 U	
2-Butanone	1.64 U	1.64 U	5 U	5 U	1.64 U	1.64 U	5 U	5 U	1.64 U	5 U
2-Chloroethyl Vinyl Ether				5 U				5 U		
2-Chlorotoluene	0.661 U	0.661 U		1 U	0.661 U	0.661 U		1 U	0.661 U	
2-Hexanone	0.935 U	0.935 U	10 U	10 U	0.935 U	0.935 U	10 U	10 U	0.935 U	10 U
4-Chlorotoluene	0.357 U	0.357 U		1 U	0.357 U	0.357 U		1 U	0.357 U	
4-Isopropyltoluene	0.303 U	0.303 U		1 U	0.303 U	0.303 U		1 U	0.303 U	
4-methyl-2-Pentanone	0.323 U	0.323 U	5 U	5 U	0.323 U	0.323 U	5 U	5 U	0.323 U	5 U
Acetone	1.18 U	1.18 U	25 U	25 U	1.18 U	1.18 U	25 U	25 U	1.18 U	25 U
Acrolein				20 U				20 U		
Acrylonitrile				10 U				10 U		
Benzene	15.5	16	12	7	1.16	0.96 J	0.6 I	1 U	0.305 U	1 U
Bromobenzene	0.536 U	0.536 U		1 U	0.536 U	0.536 U		1 U	0.536 U	
Bromochloromethane	0.899 U	0.899 U		1 U	0.899 U	0.899 U		1 U	0.899 U	
Bromodichloromethane	0.452 U	0.452 U	1 U	1 U	0.452 U	0.452 U	1 U	1 U	0.452 U	1 U
Bromoform	0.494 U	0.494 U	1 U	1 U	0.494 U	0.494 U	1 U	1 U	0.494 U	1 U
Bromomethane	1.42 UJ	1.42 UJ	2 U	2 U	1.42 U	1.42 U	2 U	2 U	1.42 UJ	2 U
Carbon Disulfide	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	2 U	2 U	0.5 U	2 U
Carbon Tetrachloride	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	1 U	1 U	0.5 U	1 U
Chlorobenzene	36	32.1	33.6	25	2.95	2.14	6.3	0.83 I	0.32 J	1 U
Chlorodibromomethane	0.374 U	0.374 U	1 U	1 U	0.374 U	0.374 U	1 U	1 U	0.374 U	1 U
Chloroethane	1.01 UJ	1.01 UJ	2 U	2 U	1.01 U	1.01 U	2 U	2 U	1.01 U	2 U

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU227B	OLDOU227B	OLDOU227B	OLDOU227B	OLDOU228B	OLDOU228B	OLDOU228B	OLDOU228B	OLDOU231A	OLDOU231A
SAMPLE ID	OLD-OU2-27B_20080319	OLD-OU2-27B_20080319-D	OLD-OU2-27B_20081002	OLD-OU2-27B_20090327	OLD-OU2-28B1_20080318	OLD-OU2-28B1_20080318-D	OLD-OU2-28B_20081002	OLD-OU2-28B_20090327	OLD-OU2-31A_20080320	OLD-OU2-31A_20081003
SAMPLE DATE	20080319	20080319	20081002	20090327	20080318	20080318	20081001	20090327	20080320	20081003
Chloroform	0.554 U	0.554 U	1 U	1 U	0.554 U	0.554 U	1 U	1 U	0.554 U	1 U
Chloromethane	0.576 U	0.576 U	2 U	2 U	0.576 U	0.576 U	2 U	2 U	0.576 U	2 U
cis-1,2-Dichloroethene	3.18	3.9	0.54 I	1	2.06	1.76	0.29 I	1 U	0.369 U	1 U
cis-1,3-Dichloropropene	0.465 U	0.465 U	1 U	1 U	0.465 U	0.465 U	1 U	1 U	0.465 U	1 U
Cyclohexane										
Dibromomethane	0.261 U	0.261 U		2 U	0.261 U	0.261 U		2 U	0.261 U	
Dichlorodifluoromethane	0.99 J	0.844 UJ		2 U	0.844 U	0.844 U		2 U	0.844 U	
Ethylbenzene	0.48 J	0.4 J	1 U	1 U	0.338 U	0.338 U	1 U	1 U	0.338 U	1 U
Hexachlorobutadiene	1.2 U	1.2 U		2 U	1.2 U	1.2 U		2 U	1.2 U	
Isopropylbenzene	0.78 J	0.58 J		0.24 I	0.365 U	0.365 U		1 U	0.365 U	
m+p-Xylenes				2 U				2 U		
Methyl Acetate										
Methyl Cyclohexane										
Methyl Tert-Butyl Ether	0.336 U	0.336 U		1 U	0.336 U	0.336 U		1 U	0.336 U	
Methylene Chloride	0.834 U	0.834 U	5 U	5 U	0.834 U	0.834 U	5 U	5 U	0.834 U	5 U
n-Butylbenzene	0.319 U	0.319 U		1 U	0.319 U	0.319 U		1 U	0.319 U	
n-Propylbenzene	0.669 U	0.669 U		1 U	0.669 U	0.669 U		1 U	0.669 U	
Naphthalene	10.7	7.66		4 I	0.5 J	0.452 U		5 U	0.452 U	
o-Xylene				1 U				1 U		
sec-Butylbenzene	0.539 U	0.539 U		1 U	0.539 U	0.539 U		1 U	0.539 U	
Styrene	0.203 U	0.203 U	1 U	1 U	0.203 U	0.203 U	1 U	1 U	0.203 U	1 U
tert-Butylbenzene	0.776 U	0.776 U		1 U	0.776 U	0.776 U		1 U	0.776 U	
Tetrachloroethene	0.381 U	0.381 U	1 U	1 U	0.381 U	0.381 U	1 U	1 U	0.381 U	1 U
Toluene	0.35 J	0.36 J	1 U	1 U	0.257 U	0.257 U	1 U	1 U	0.257 U	1 U
Total Xylenes	4.37	4.17	3 U		0.433 U	0.433 U	3 U		0.433 U	3 U
trans-1,2-Dichloroethene	0.244 U	0.244 U	1 U	1 U	0.244 U	0.244 U	1 U	1 U	0.244 U	1 U
trans-1,3-Dichloropropene	0.229 U	0.229 U	1 U	1 U	0.229 U	0.229 U	1 U	1 U	0.229 U	1 U
Trichloroethene	0.574 U	0.574 U	1 U	1 U	0.574 U	0.574 U	1 U	1 U	0.574 U	1 U
Trichlorofluoromethane	0.672 U	0.672 U		2 U	0.672 U	0.672 U		2 U	0.672 U	
Vinyl Acetate				10 U				10 U		
Vinyl Chloride	2.32	2.91	1 U	1 U	2.7	2.33	0.76 I	1 U	0.986 U	1 U
Volatile Gases (µg/L)										
Ethane	0.72		0.39 I	0.35					0.01 U	1 U
Ethene	0.35		1 U	1 U					0.01 U	1 U
Methane	4571.7		2570	1990					0.8	8.07
Petroleum Hydrocarbons (mg/L)										
Total Petroleum Hydrocarbons										
Inorganics (µg/L)										
Iron	1230	1280	1070	888					77	228 I
Manganese	5.5 J	6.2 J	3.8 I	5 I					4.2 J	2.5 I

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU227B	OLDOU227B	OLDOU227B	OLDOU227B	OLDOU228B	OLDOU228B	OLDOU228B	OLDOU228B	OLDOU231A	OLDOU231A
SAMPLE ID	OLD-OU2-27B_20080319	OLD-OU2-27B_20080319-D	OLD-OU2-27B_20081002	OLD-OU2-27B_20090327	OLD-OU2-28B1_20080318	OLD-OU2-28B1_20080318-D	OLD-OU2-28B_20081002	OLD-OU2-28B_20090327	OLD-OU2-31A_20080320	OLD-OU2-31A_20081003
SAMPLE DATE	20080319	20080319	20081002	20090327	20080318	20080318	20081001	20090327	20080320	20081003
Miscellaneous Parameters (mg/L)										
Alkalinity	10.6		6.1	5					0.71 J	19.7
Ammonia-N			1.1	1						0.1 U
Ammonium	0.02 U								0.02 U	
Carbon Dioxide	356.6								22.5	
Chloride	38.2		28.1	30					4	5.9
Dissolved Organic Carbon	13.6								18.9	
Dissolved Oxygen										
Nitrate-N	0.0092 U		0.1 U	0.1 U					0.0092 U	0.1
Nitrite-N	0.0075 U		0.1 U	0.1 U					0.0075 U	0.1 U
Nitrogen	10.7								22.2	
Orthophosphate-P	0.221		1.5	0.52					0.012	0.1 U
Oxygen	3.68								8.87	
Sodium										
Sulfate	5.32		16.4	7					6.66	11.2
Sulfide										
Total Dissolved Solids										
Total Organic Carbon			15.6	14						6.1
Total Suspended Solids										
Field Parameters										
Depth To Groundwater (feet)										
Dissolved Oxygen (mg/L)										
Ferrous Iron (mg/L)										
Final Volume (gallons)										
Oxidation Reduction Potential (mV)										
pH										
Specific Conductance (µmhos)										
Temperature (°C)										
Turbidity (NTU)										

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU231A	OLDOU231B	OLDOU231B	OLDOU231B	OLDOU232A	OLDOU232A	OLDOU232A	OLDOU232B	OLDOU232B	OLDOU232B
SAMPLE ID	OLD-OU2-31A_20090327	OLD-OU2-31B_20080320	OLD-OU2-31B_20081003	OLD-OU2-31B_20090327	OLD-OU2-32A_20080319	OLD-OU2-32A_20081002	OLD-OU2-32A_20090326	OLD-OU2-32B_20080319	OLD-OU2-32B_20081002	OLD-OU2-32B_20090326
SAMPLE DATE	20090327	20080320	20081003	20090327	20080319	20081001	20090326	20080319	20081001	20090326
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane	1 U	0.236 U		1 U	0.236 U		1 U	0.236 U		1 U
1,1,1-Trichloroethane	1 U	0.424 U	1 U	1 U	0.424 U	1 U	1 U	0.424 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U
1,1,2-Trichloroethane	1 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane										
1,1-Dichloroethane	1 U	0.388 U	0.32 I	1 U	0.388 U	1 U	1 U	0.388 U	1 U	1 U
1,1-Dichloroethene	1 U	0.899 U	1 U	1 U	0.899 U	1 U	1 U	0.899 U	1 U	1 U
1,1-Dichloropropene	1 U	0.404 U		1 U	0.404 U		1 U	0.404 U		1 U
1,2,3-Trichlorobenzene	1 U	0.981 U		1 U	0.981 U		1 U	0.981 U		1 U
1,2,3-Trichloropropane	2 U	0.29 U		2 U	0.29 U		2 U	0.29 U		2 U
1,2,4-Trichlorobenzene	1 U	0.73 U		1 U	0.73 U		1 U	0.73 U		1 U
1,2,4-Trimethylbenzene	2 U	0.516 U		2 U	0.516 U		2 U	0.516 U		2 U
1,2-dibromo-3-Chloropropane	2 U	1.63 U		2 U	1.63 U		2 U	1.63 U		2 U
1,2-Dibromoethane	1 U	0.363 U		1 U	0.363 U		1 U	0.363 U		1 U
1,2-Dichlorobenzene	1 U	0.394 U		1 U	0.394 U		1 U	0.394 U		1 U
1,2-Dichloroethane	1 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U
1,2-Dichloropropane	1 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	0.416 U		2 U	0.416 U		2 U	0.416 U		2 U
1,3-Dichlorobenzene	1 U	0.502 U		1 U	0.502 U		1 U	0.502 U		1 U
1,3-Dichloropropane	1 U	0.28 U		1 U	0.28 U		1 U	0.28 U		1 U
1,4-Dichlorobenzene	1 U	6.91		5	0.412 U		1 U	0.412 U		1 U
2,2-Dichloropropane	1 U	0.795 U		1 U	0.795 U		1 U	0.795 U		1 U
2-Butanone	5 U	1.64 U	5 U	5 U	1.64 U	5 U	5 U	1.64 U	5 U	5 U
2-Chloroethyl Vinyl Ether	5 U			5 U			5 U			5 U
2-Chlorotoluene	1 U	0.661 U		1 U	0.661 U		1 U	0.661 U		1 U
2-Hexanone	10 U	0.935 U	10 U	10 U	0.935 U	10 U	10 U	0.935 U	10 U	10 U
4-Chlorotoluene	1 U	0.357 U		1 U	0.357 U		1 U	0.357 U		1 U
4-Isopropyltoluene	1 U	0.303 U		1 U	0.303 U		1 U	0.303 U		1 U
4-methyl-2-Pentanone	5 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U
Acetone	25 U	1.18 U	25 U	25 U	1.18 U	25 U	25 U	1.18 U	25 U	25 U
Acrolein	20 U			20 U			20 U			20 U
Acrylonitrile	10 U			10 U			10 U			10 U
Benzene	1 U	25	20.6	27	0.305 U	1 U	1 U	0.305 U	1 U	1 U
Bromobenzene	1 U	0.536 U		1 U	0.536 U		1 U	0.536 U		1 U
Bromochloromethane	1 U	0.899 U		1 U	0.899 U		1 U	0.899 U		1 U
Bromodichloromethane	1 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U
Bromoform	1 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U
Bromomethane	2 U	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U
Carbon Disulfide	2 U	0.5 U	2 U	2 U	0.5 U	2 U	2 U	0.5 U	2 U	2 U
Carbon Tetrachloride	1 U	0.5 U	1 U	1 U	0.5 U	1 U	1 U	0.5 U	1 U	1 U
Chlorobenzene	1 U	36.3	35.4	39	0.24 J	1 U	1 U	0.182 U	1 U	1 U
Chlorodibromomethane	1 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U
Chloroethane	2 U	1.01 U	2 U	2 U	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU231A	OLDOU231B	OLDOU231B	OLDOU231B	OLDOU232A	OLDOU232A	OLDOU232A	OLDOU232B	OLDOU232B	OLDOU232B
SAMPLE ID	OLD-OU2-31A_20090327	OLD-OU2-31B_20080320	OLD-OU2-31B_20081003	OLD-OU2-31B_20090327	OLD-OU2-32A_20080319	OLD-OU2-32A_20081002	OLD-OU2-32A_20090326	OLD-OU2-32B_20080319	OLD-OU2-32B_20081002	OLD-OU2-32B_20090326
SAMPLE DATE	20090327	20080320	20081003	20090327	20080319	20081001	20090326	20080319	20081001	20090326
Chloroform	1 U	0.554 U	1 U	1 U	0.554 U	1 U	1 U	0.554 U	1 U	1 U
Chloromethane	2 U	0.576 U	2 U	2 U	0.576 U	2 U	2 U	0.576 U	2 U	2 U
cis-1,2-Dichloroethene	1 U	2.4	5.9	2	0.369 U	1 U	1 U	0.369 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U
Cyclohexane										
Dibromomethane	2 U	0.261 U		2 U	0.261 U		2 U	0.261 U		2 U
Dichlorodifluoromethane	2 U	1.44		2 U	0.844 UJ		2 U	0.844 UJ		2 U
Ethylbenzene	1 U	0.338 U	1 U	1 U	0.338 U	1 U	1 U	0.338 U	1 U	1 U
Hexachlorobutadiene	2 U	1.2 U		2 U	1.2 U		2 U	1.2 U		2 U
Isopropylbenzene	1 U	0.365 U		1 U	0.365 U		1 U	0.365 U		1 U
m+p-Xylenes	2 U			2 U			2 U			2 U
Methyl Acetate										
Methyl Cyclohexane										
Methyl Tert-Butyl Ether	1 U	0.336 U		1 U	0.336 U		1 U	0.336 U		1 U
Methylene Chloride	5 U	0.834 U	5 U	5 U	0.834 U	5 U	5 U	0.834 U	5 U	5 U
n-Butylbenzene	1 U	0.57 J		1 U	0.319 U		1 U	0.319 U		1 U
n-Propylbenzene	1 U	0.669 U		1 U	0.669 U		1 U	0.669 U		1 U
Naphthalene	5 U	0.452 U		5 U	0.452 U		5 U	0.452 U		5 U
o-Xylene	1 U			1 U			1 U			1 U
sec-Butylbenzene	1 U	0.539 U		1 U	0.539 U		1 U	0.539 U		1 U
Styrene	1 U	0.203 U	1 U	1 U	0.203 U	1 U	1 U	0.203 U	1 U	1 U
tert-Butylbenzene	1 U	0.776 U		1 U	0.776 U		1 U	0.776 U		1 U
Tetrachloroethene	1 U	3.14	4.7	2	0.381 U	1 U	1 U	0.381 U	1 U	1 U
Toluene	1 U	0.257 U	1 U	1 U	0.257 U	1 U	1 U	0.257 U	1 U	1 U
Total Xylenes		0.433 U	3 U		0.433 U	3 U		0.433 U	3 U	
trans-1,2-Dichloroethene	1 U	0.244 U	1 U	1 U	0.244 U	1 U	1 U	0.244 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U
Trichloroethene	1 U	0.95 J	3.4	1	0.574 U	1 U	1 U	0.574 U	1 U	1 U
Trichlorofluoromethane	2 U	0.672 U		2 U	0.672 U		2 U	0.672 U		2 U
Vinyl Acetate	10 U			10 U			10 U			10 U
Vinyl Chloride	1 U	3.05	6.4	4	0.986 U	1 U	1 U	0.986 U	1 U	1 U
Volatile Gases (µg/L)										
Ethane	1 U	0.3	0.6 I	1	0.01 U	1 U	1 U	0.07	1 U	1 U
Ethene	1 U	0.25	0.45 I	0.59	0.01 U	1 U	1 U	0.02	1 U	1 U
Methane	5	703	1190	2590	6.4	1.7	214	336.8	305	339
Petroleum Hydrocarbons (mg/L)										
Total Petroleum Hydrocarbons										
Inorganics (µg/L)										
Iron	382	1670	2030	1830	115	105 I	289 I	1020	893	921
Manganese	3 I	6 J	7.2 I	6 I	3.1 J	15 U	2 I	8 J	6.5 I	7 I

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU231A	OLDOU231B	OLDOU231B	OLDOU231B	OLDOU232A	OLDOU232A	OLDOU232A	OLDOU232B	OLDOU232B	OLDOU232B
SAMPLE ID	OLD-OU2-31A_20090327	OLD-OU2-31B_20080320	OLD-OU2-31B_20081003	OLD-OU2-31B_20090327	OLD-OU2-32A_20080319	OLD-OU2-32A_20081002	OLD-OU2-32A_20090326	OLD-OU2-32B_20080319	OLD-OU2-32B_20081002	OLD-OU2-32B_20090326
SAMPLE DATE	20090327	20080320	20081003	20090327	20080319	20081001	20090326	20080319	20081001	20090326
Miscellaneous Parameters (mg/L)										
Alkalinity	5 U	14.9	9.2	3 I	1.94	10.9	3 I	13.5	10.7	10
Ammonia-N	0.1 U		0.05 I	0.1 U		0.1 U	0.1 U		0.053 I	0.1 U
Ammonium		0.02 U			0.02 U			0.02 U		
Carbon Dioxide		174.5			60			115.5		
Chloride	4	23.4	19.9	22	4.16	5.1	5	13.5	13.4	9
Dissolved Organic Carbon		9.86			22.3			4.84		
Dissolved Oxygen						8			9.1	
Nitrate-N	0.1	0.0092 U	0.1 U	0.1	0.02	0.14	0.12	0.0092 U	0.1	0.11
Nitrite-N	0.1 U	0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U	0.0075 U	0.1 U	0.1 U
Nitrogen		46.6			11			10.3		
Orthophosphate-P	0.046 I	1.16	1.1	2	0.071	0.2 U	0.1 U	2.06	3	3
Oxygen		15.41			4.67			2.83		
Sodium										
Sulfate	4	24.1	29.4	11	7.15	8.7	7	2.96	9.3	1 I
Sulfide										
Total Dissolved Solids										
Total Organic Carbon	3		12.4	9		22.3	18		4.7	4
Total Suspended Solids										
Field Parameters										
Depth To Groundwater (feet)										
Dissolved Oxygen (mg/L)										
Ferrous Iron (mg/L)										
Final Volume (gallons)										
Oxidation Reduction Potential (mV)										
pH										
Specific Conductance (µmhos)										
Temperature (°C)										
Turbidity (NTU)										

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU233A	OLDOU233A	OLDOU233A	OLDOU233A	OLDOU233B	OLDOU233B	OLDOU233B	OLDOU237B	OLDOU237B	OLDOU237B
SAMPLE ID	OLD-OU2-33A_20080319	OLD-OU2-33A_20081007	OLD-OU2-33A_20081007-D	OLD-OU2-33A_20090327	OLD-OU2-33B_20080319	OLD-OU2-33B_20081007	OLD-OU2-33B_20090327	OLD-OU2-37B1_20080318	OLD-OU2-37B_20081003	OLD-OU2-37B_20090330
SAMPLE DATE	20080319	20081007	20081007	20090327	20080319	20081007	20090327	20080318	20081003	20090330
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane	0.236 U			1 U	0.236 U		1 U	0.236 U		1 U
1,1,1-Trichloroethane	0.424 U	1 U	1 U	1 U	0.424 U	1 U	1 U	0.424 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.226 U	1 U	1 U	1 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U
1,1,2-Trichloroethane	0.312 U	1 U	1 U	1 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane										
1,1-Dichloroethane	0.388 U	1 U	1 U	1 U	0.388 U	1 U	1 U	0.388 U	1 U	1 U
1,1-Dichloroethene	0.899 U	1 U	1 U	1 U	0.899 U	1 U	1 U	0.899 U	1 U	1 U
1,1-Dichloropropene	0.404 U			1 U	0.404 U		1 U	0.404 U		1 U
1,2,3-Trichlorobenzene	0.981 U			1 U	0.981 U		1 U	0.981 U		1 U
1,2,3-Trichloropropane	0.29 U			2 U	0.29 U		2 U	0.29 U		2 U
1,2,4-Trichlorobenzene	0.73 U			1 U	0.73 U		1 U	0.73 U		1 U
1,2,4-Trimethylbenzene	0.516 U			2 U	0.516 U		2 U	0.63 J		2 U
1,2-dibromo-3-Chloropropane	1.63 U			2 U	1.63 U		2 U	1.63 U		2 U
1,2-Dibromoethane	0.363 U			1 U	0.363 U		1 U	0.363 U		1 U
1,2-Dichlorobenzene	0.394 U			1 U	0.394 U		1 U	0.394 U		1 U
1,2-Dichloroethane	0.989 U	1 U	1 U	1 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U
1,2-Dichloropropane	0.563 U	1 U	1 U	1 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U
1,3,5-Trimethylbenzene	0.416 U			2 U	0.416 U		2 U	0.416 U		2 U
1,3-Dichlorobenzene	0.502 U			1 U	0.502 U		1 U	0.502 U		1 U
1,3-Dichloropropane	0.28 U			1 U	0.28 U		1 U	0.28 U		1 U
1,4-Dichlorobenzene	0.412 U			1 U	0.412 U		1 U	2.18		3
2,2-Dichloropropane	0.795 U			1 U	0.795 U		1 U	0.795 U		1 U
2-Butanone	1.64 U	5 U	5 U	5 U	1.64 U	5 U	5 U	1.64 U	5 U	5 U
2-Chloroethyl Vinyl Ether				5 U			5 U			5 U
2-Chlorotoluene	0.661 U			1 U	0.661 U		1 U	0.661 U		1 U
2-Hexanone	0.935 U	10 U	10 U	10 U	0.935 U	10 U	10 U	0.935 U	10 U	10 U
4-Chlorotoluene	0.357 U			1 U	0.357 U		1 U	0.357 U		1 U
4-Isopropyltoluene	0.303 U			1 U	0.303 U		1 U	0.303 U		1 U
4-methyl-2-Pentanone	0.323 U	5 U	5 U	5 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U
Acetone	1.18 U	25 U	25 U	25 U	1.18 U	25 U	25 U	1.18 U	25 U	25 U
Acrolein				20 U			20 U			20 U
Acrylonitrile				10 U			10 U			10 U
Benzene	0.305 U	1 U	1 U	1 U	0.43 J	1 U	1 U	0.93 J	1.2	1
Bromobenzene	0.536 U			1 U	0.536 U		1 U	0.536 U		1 U
Bromochloromethane	0.899 U			1 U	0.899 U		1 U	0.899 U		1 U
Bromodichloromethane	0.452 U	1 U	1 U	1 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U
Bromoform	0.494 U	1 U	1 U	1 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U
Bromomethane	1.42 UJ	2 U	2 U	2 U	1.42 UJ	2 U	2 U	1.42 U	2 U	2 U
Carbon Disulfide	0.5 U	2 U	2 U	2 U	0.5 U	2 U	2 U	0.5 U	2 U	2 U
Carbon Tetrachloride	0.5 U	1 U	1 U	1 U	0.5 U	1 U	1 U	0.5 U	1 U	1 U
Chlorobenzene	0.182 U	1 U	1 U	1 U	7.54	3.8	5	4.42	8	7
Chlorodibromomethane	0.374 U	1 U	1 U	1 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U
Chloroethane	1.01 UJ	2 U	2 U	2 U	1.01 UJ	2 U	2 U	1.01 U	2 U	2 U

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU233A	OLDOU233A	OLDOU233A	OLDOU233A	OLDOU233B	OLDOU233B	OLDOU233B	OLDOU237B	OLDOU237B	OLDOU237B
SAMPLE ID	OLD-OU2-33A_20080319	OLD-OU2-33A_20081007	OLD-OU2-33A_20081007-D	OLD-OU2-33A_20090327	OLD-OU2-33B_20080319	OLD-OU2-33B_20081007	OLD-OU2-33B_20090327	OLD-OU2-37B1_20080318	OLD-OU2-37B_20081003	OLD-OU2-37B_20090330
SAMPLE DATE	20080319	20081007	20081007	20090327	20080319	20081007	20090327	20080318	20081003	20090330
Chloroform	0.554 U	1 U	1 U	1 U	0.554 U	1 U	1 U	0.554 U	1 U	1 U
Chloromethane	0.576 U	2 U	2 U	2 U	0.576 U	2 U	2 U	0.576 U	2 U	2 U
cis-1,2-Dichloroethene	0.369 U	1 U	1 U	1 U	1.19	1.8	1	1.1	1.3	1
cis-1,3-Dichloropropene	0.465 U	1 U	1 U	1 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U
Cyclohexane										
Dibromomethane	0.261 U			2 U	0.261 U		2 U	0.261 U		2 U
Dichlorodifluoromethane	0.844 UJ			2 U	0.844 UJ		2 U	0.844 U		2 U
Ethylbenzene	0.338 U	1 U	1 U	1 U	0.338 U	1 U	1 U	0.338 U	1 U	1 U
Hexachlorobutadiene	1.2 U			2 U	1.2 U		2 U	1.2 U		2 U
Isopropylbenzene	0.365 U			1 U	0.365 U		1 U	0.365 U		1 U
m+p-Xylenes				2 U			2 U			2 U
Methyl Acetate										
Methyl Cyclohexane										
Methyl Tert-Butyl Ether	0.336 U			1 U	0.336 U		1 U	0.336 U		1 U
Methylene Chloride	0.834 U	5 U	5 U	5 U	0.834 U	5 U	5 U	0.834 U	5 U	5 U
n-Butylbenzene	0.319 U			1 U	0.319 U		1 U	0.4 J		1 U
n-Propylbenzene	0.669 U			1 U	0.669 U		1 U	0.669 U		1 U
Naphthalene	0.452 U			5 U	0.452 U		5 U	7.04		4 I
o-Xylene				1 U			1 U			1 U
sec-Butylbenzene	0.539 U			1 U	0.539 U		1 U	0.64 J		1 U
Styrene	0.203 U	1 U	1 U	1 U	0.203 U	1 U	1 U	1.48	1 U	1 U
tert-Butylbenzene	0.776 U			1 U	0.776 U		1 U	0.776 U		1 U
Tetrachloroethene	0.381 U	1 U	1 U	1 U	1.07	0.54 I	0.69 I	0.381 U	1 U	1 U
Toluene	0.257 U	1 U	1 U	1 U	0.257 U	1 U	1 U	0.257 U	1 U	1 U
Total Xylenes	0.433 U	3 U	3 U		0.433 U	3 U		0.48 J	3 U	
trans-1,2-Dichloroethene	0.244 U	1 U	1 U	1 U	0.244 U	1 U	1 U	0.244 U	1 U	1 U
trans-1,3-Dichloropropene	0.229 U	1 U	1 U	1 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U
Trichloroethene	0.574 U	1 U	1 U	1 U	20.6	10.8	16	0.574 U	1 U	1 U
Trichlorofluoromethane	0.672 U			2 U	0.672 UJ		2 U	0.672 U		2 U
Vinyl Acetate				10 U			10 U			10 U
Vinyl Chloride	0.986 U	1 U	1 U	1 U	0.986 U	1 U	1 U	0.986 U	1.5	1
Volatile Gases (µg/L)										
Ethane	0.01 U	1 U		1 U	0.06	1 U	1 U		0.36 I	
Ethene	0.01 U	1 U		1 U	0.06	1 U	1 U		0.51 I	
Methane	24.7	2.58		560	373.5	166	314		2120	
Petroleum Hydrocarbons (mg/L)										
Total Petroleum Hydrocarbons										
Inorganics (µg/L)										
Iron	1380	1100	1910	2160	1670	1850	1810			
Manganese	6.6 J	6.9 I	8.6 I	10 I	7.5 J	8.7 I	12 I			

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU233A	OLDOU233A	OLDOU233A	OLDOU233A	OLDOU233B	OLDOU233B	OLDOU233B	OLDOU237B	OLDOU237B	OLDOU237B
SAMPLE ID	OLD-OU2-33A_20080319	OLD-OU2-33A_20081007	OLD-OU2-33A_20081007-D	OLD-OU2-33A_20090327	OLD-OU2-33B_20080319	OLD-OU2-33B_20081007	OLD-OU2-33B_20090327	OLD-OU2-37B1_20080318	OLD-OU2-37B_20081003	OLD-OU2-37B_20090330
SAMPLE DATE	20080319	20081007	20081007	20090327	20080319	20081007	20090327	20080318	20081003	20090330
Miscellaneous Parameters (mg/L)										
Alkalinity	0.368 U	5 U		5 U	8.55	2.9 I	2 I			
Ammonia-N		0.1 U		0.1 U		0.1 U	0.051 I			
Ammonium	0.02 U				0.02 U					
Carbon Dioxide	74.9				149.5					
Chloride	7.3	11.7		16	14.9	16.1	13			
Dissolved Organic Carbon	18.7				6.96					
Dissolved Oxygen										
Nitrate-N	1.17	2.1		0.1 U	0.0092 U	0.1 U	0.1 U			
Nitrite-N	0.0075 U	0.1 U		0.1 U	0.0075 U	0.1 U	0.1 U			
Nitrogen	10.8				15.4					
Orthophosphate-P	0.018	0.1 U		0.1 U	0.51	1.4	0.66			
Oxygen	3.05				4.45					
Sodium										
Sulfate	23.9	14.1		7	27.7	32.6	22			
Sulfide										
Total Dissolved Solids										
Total Organic Carbon		7.5		9		10.7	5			
Total Suspended Solids										
Field Parameters										
Depth To Groundwater (feet)										
Dissolved Oxygen (mg/L)										
Ferrous Iron (mg/L)										
Final Volume (gallons)										
Oxidation Reduction Potential (mV)										
pH										
Specific Conductance (µmhos)										
Temperature (°C)										
Turbidity (NTU)										

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU239B	OLDOU240B	OLDOU240B	OLDOU242B	OLDOU243B	OLDOU245B	OLDOU249A	OLDOU249B	OLDOU249B	OLDOU250A
SAMPLE ID	TO02OU239BEQ109	TO02MW40BEQ109	TO2OU240BEQ209	TO02OU242BEQ109	TO02OU243BEQ109	TO02MW45BEQ109	TO02OU2MW49ABL	TO02OU2MW49BBL	TO02MW49BEQ109	TO02OU2MW50ABL
SAMPLE DATE	20090123	20090122	20090423	20090123	20090123	20090121	20080613	20080610	20090121	20080611
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane										
1,1,1-Trichloroethane	1 U	10 U	3.4 U	6.8 U	8.5 U	12 U	1 U	2 U	4 U	1 U
1,1,2,2-Tetrachloroethane	0.25 U	2.5 U	2 U	4 U	5 U	3.1 U	0.25 U	0.5 U	1 U	0.25 U
1,1,2-Trichloroethane	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
1,1,2-Trichlorotrifluoroethane	1 U	10 U	3.6 U	7.2 U	9 U	12 U	1 U	2 U	4 U	1 U
1,1-Dichloroethane	1 U	10 U	2.4 U	4.8 U	6 U	12 U	1 U	2 U	4 U	1 U
1,1-Dichloroethene	1 U	10 U	3 U	6 U	7.5 U	12 U	1 U	2 U	0.8 J	1 U
1,1-Dichloropropene										
1,2,3-Trichlorobenzene	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
1,2,3-Trichloropropane										
1,2,4-Trichlorobenzene	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
1,2,4-Trimethylbenzene										
1,2-dibromo-3-Chloropropane	0.5 U	5 U	2.2 U	4.4 U	5.5 U	6.2 U	0.5 U	1 U	2 U	0.5 U
1,2-Dibromoethane	0.25 U	2.5 U	2 U	4 U	5 U	3.1 U	0.25 U	0.5 U	1 U	0.25 U
1,2-Dichlorobenzene	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
1,2-Dichloroethane	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
1,2-Dichloropropane	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
1,3,5-Trimethylbenzene										
1,3-Dichlorobenzene	1 U	10 U	2.6 U	5.2 U	6.5 U	12 U	1 U	2 U	4 U	1 U
1,3-Dichloropropane										
1,4-Dichlorobenzene	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 UJ	4 U	1 U
2,2-Dichloropropane										
2-Butanone	10 U	100 U	20 U	40 U	50 U	120 U	10 U	20 U	40 U	10 U
2-Chloroethyl Vinyl Ether										
2-Chlorotoluene										
2-Hexanone	5 U	50 U	6 U	12 U	15 U	62 U	5 U	10 U	20 U	5 U
4-Chlorotoluene										
4-Isopropyltoluene										
4-methyl-2-Pentanone	5 U	50 U	5.8 U	12 U	14 U	62 U	5 U	10 U	20 U	5 U
Acetone	5.1 JB	21 JB	17 UJ	34 U	42 U	120 U	3.7 J	3.2 JB	40 U	1.6 J
Acrolein										
Acrylonitrile										
Benzene	1 U	10 U	2.2 U	4.4 U	5.5 U	1.7 J	0.64 J	0.42 J	4 U	0.28 J
Bromobenzene										
Bromochloromethane	1 U	10 U	2.2 U	4.4 U	5.5 U	12 U	1 U	2 U	4 U	1 U
Bromodichloromethane	0.6 U	6 U	2 U	4 U	5 U	7.5 U	0.6 U	1.2 U	2.4 U	0.6 U
Bromoform	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
Bromomethane	1 UJ	10 UJ	6.4 U	13 UJ	16 UJ	12 UJ	1 UJ	2 U	4 UJ	1 UJ
Carbon Disulfide	1 U	10 U	2.6 U	5.2 U	6.5 U	12 U	0.22 J	2 U	4 U	0.18 J
Carbon Tetrachloride	1 U	10 U	3 U	6 U	7.5 U	12 U	1 U	2 U	4 U	1 U
Chlorobenzene	1 U	3.1 J	5 J	4 U	37 J	3.3 J	6.4	6.2	5.5	5.1
Chlorodibromomethane	0.4 U	4 U	2 U	4 U	5 U	5 U	0.4 U	0.8 U	1.6 U	0.4 U
Chloroethane	1 U	10 U	3.6 U	7.2 U	9 U	12 U	1 U	2 U	4 U	1 U

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU239B	OLDOU240B	OLDOU240B	OLDOU242B	OLDOU243B	OLDOU245B	OLDOU249A	OLDOU249B	OLDOU249B	OLDOU250A
SAMPLE ID	TO02OU239BEQ109	TO02MW40BEQ109	TO2OU240BEQ209	TO02OU242BEQ109	TO02OU243BEQ109	TO02MW45BEQ109	TO02OU2MW49ABL	TO02OU2MW49BBL	TO02MW49BEQ109	TO02OU2MW50ABL
SAMPLE DATE	20090123	20090122	20090423	20090123	20090123	20090121	20080613	20080610	20090121	20080611
Chloroform	1 U	5.5 J	2.8 J	4.4 U	5.5 U	12 U	0.47 J	2 U	4 U	1.2
Chloromethane	1 U	10 UJ	5.8 U	12 UJ	14 U	12 UJ	1 U	2 U	4 UJ	1 U
cis-1,2-Dichloroethene	15	1000	1200	420	160	130	12	15	370	2
cis-1,3-Dichloropropene	0.5 U	5 U	2.2 U	4.4 U	5.5 U	6.2 U	0.5 U	1 U	2 U	0.5 U
Cyclohexane	0.5 U	5 U	4 U	8 U	10 U	6.2 U	0.5 U	1 U	2 U	0.5 U
Dibromomethane										
Dichlorodifluoromethane	1 U	10 U	4.4 U	8.8 UJ	11 U	12 U	1 U	2 UJ	4 U	1 U
Ethylbenzene	1 U	10 U	2.6 U	5.2 U	6.5 U	12 U	1 U	2 U	4 U	1 U
Hexachlorobutadiene										
Isopropylbenzene	0.8 U	8 U	3 U	6 U	7.5 U	10 U	0.8 U	0.11 J	3.2 U	0.8 U
m+p-Xylenes										
Methyl Acetate	1 U	10 U	6 U	12 U	15 U	12 U	1 U	2 U	4 U	1 U
Methyl Cyclohexane	0.6 U	6 U	3.4 U	6.8 U	8.5 U	7.5 U	0.6 U	1.2 U	2.4 U	0.6 U
Methyl Tert-Butyl Ether	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
Methylene Chloride	1 U	12 JB	21 JB	44 JB	160 JB	7.5 JB	0.29 JB	2.4 JB	2.5 JB	1 U
n-Butylbenzene										
n-Propylbenzene										
Naphthalene										
o-Xylene										
sec-Butylbenzene										
Styrene	1 U	10 U	2 U	4 U	5 U	12 U	1 U	2 U	4 U	1 U
tert-Butylbenzene										
Tetrachloroethene	1 U	11	9.1 J	10 J	57	13	1.5	5.1	6.6	0.35 J
Toluene	1 U	1.2 J	2 U	4 U	5 U	1.5 J	1 U	2 U	4 U	1 U
Total Xylenes	1 U	10 U		8.8 U	11 U	12 U	1 U	2 U	4 U	1 U
trans-1,2-Dichloroethene	1 U	10 U	2.6 U	5.2 U	6.5 U	12 U	0.57 J	2 U	4 U	1 U
trans-1,3-Dichloropropene	0.7 U	7 U	2 U	4 U	5 U	8.8 U	0.7 U	1.4 U	2.8 U	0.7 U
Trichloroethene	5.9	1200	1300	3900	6300	1700	77	310	330	30
Trichlorofluoromethane	1 U	10 U	3.4 U	6.8 U	8.5 U	12 U	1 U	2 U	4 U	1 U
Vinyl Acetate										
Vinyl Chloride	1.1	18	26	30 J	51	8.6 J	3.5	3.8	3.2 J	1.1
Volatile Gases (µg/L)										
Ethane	1 U	1 U	1 U	1 U	1 U	1 U			1 U	
Ethene	1 U	4.7	7.1	5.7	8.2	2.9			1 U	
Methane	1100 JB	1500 B	1100 JB	2600 JB	1700 JB	3100 JB			450 B	
Petroleum Hydrocarbons (mg/L)										
Total Petroleum Hydrocarbons							0.29 J	0.26 J		0.49 U
Inorganics (µg/L)										
Iron										
Manganese										

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU239B	OLDOU240B	OLDOU240B	OLDOU242B	OLDOU243B	OLDOU245B	OLDOU249A	OLDOU249B	OLDOU249B	OLDOU250A
SAMPLE ID	TO02OU239BEQ109	TO02MW40BEQ109	TO2OU240BEQ209	TO02OU242BEQ109	TO02OU243BEQ109	TO02MW45BEQ109	TO02OU2MW49ABL	TO02OU2MW49BBL	TO02MW49BEQ109	TO02OU2MW50ABL
SAMPLE DATE	20090123	20090122	20090423	20090123	20090123	20090121	20080613	20080610	20090121	20080611
Miscellaneous Parameters (mg/L)										
Alkalinity							24.4	26.5		11.3
Ammonia-N										
Ammonium										
Carbon Dioxide										
Chloride										
Dissolved Organic Carbon										
Dissolved Oxygen										
Nitrate-N										
Nitrite-N										
Nitrogen										
Orthophosphate-P										
Oxygen										
Sodium							22.3	8.64		11.9
Sulfate	25 U	25 U	3.18 J	25 U	15.9 J	10.9 J			13.4 J	
Sulfide	0.73 J	4.8 J	5.2	1.5 J	2 J	0.69 J			1.9 J	
Total Dissolved Solids							1930 J	89 J		465 J
Total Organic Carbon	6.1 JB	103	198	6.5 JB	5.6 JB	6.3	11.6	8.5	5.8	4.7
Total Suspended Solids							18 J	4 U		15.2
Field Parameters										
Depth To Groundwater (feet)	6.7	7.69	7.96	7.71	6.8	8.01		6.69	6.09	
Dissolved Oxygen (mg/L)	0.31	0.32	0.27	0.45	0.31	0.23		1.66	1	
Ferrous Iron (mg/L)	0.5	3.5	4.25	1	1.1				4	
Final Volume (gallons)	10.5	5	6.5	15	22	4		6.93	10.5	
Oxidation Reduction Potential (mV)	-112.1	-230	-271	-182	-190	-206		-100	-156	
pH	5.31	4.77	4.8	5.29	5.09	5.3		5.26	5.12	
Specific Conductance (µmhos)	84	207	216	97	130	126		149	100	
Temperature (°C)	22.8	23.98	24.9	23.9	24.3	22.6		17.74	23.2	
Turbidity (NTU)	2.2	1.07	1.86	3.99	0.97	2.5		17.3	42.9	

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU250B	OLDOU250B	OLDOU250B	OLDOU251A	OLDOU251B	OLDOU251B	OLDOU251B	OLDOU252A	OLDOU252B	OLDOU252B
SAMPLE ID	TO02OU2MW50BBL	TO02MW50BEQ109	TO2OU250BEQ209	TO02OU2MW51ABL	TO02OU2MW51BBL	TO02MW51BEQ109	TO2OU251BEQ209	TO02OU2MW52ABL	TO02OU2MW52BBL	TO02MW52BEQ109
SAMPLE DATE	20080611	20090121	20090423	20080613	20080612	20090121	20090423	20080610	20080610	20090121
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane										
1,1,1-Trichloroethane	20 U	2 U	0.85 U	1 U	5 U	1 U	0.42 U	1 U	2 U	2 U
1,1,2,2-Tetrachloroethane	5 U	0.5 U	0.5 U	0.25 U	1.2 U	0.25 U	0.25 U	0.25 U	0.5 U	0.5 U
1,1,2-Trichloroethane	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 U	2 U
1,1,2-Trichlorotrifluoroethane	20 U	2 U	0.9 U	1 U	5 U	1 U	0.45 U	1 U	2 U	2 U
1,1-Dichloroethane	20 U	2 U	0.6 U	1 U	5 U	1 U	0.3 U	1 U	2 U	2 U
1,1-Dichloroethene	20 U	2 U	0.75 U	1 U	5 U	0.23 J	0.38 U	1 U	2 U	2 U
1,1-Dichloropropene										
1,2,3-Trichlorobenzene	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 U	2 U
1,2,3-Trichloropropane										
1,2,4-Trichlorobenzene	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 U	2 U
1,2,4-Trimethylbenzene										
1,2-dibromo-3-Chloropropane	10 U	1 U	0.55 U	0.5 U	2.5 U	0.5 U	0.28 U	0.5 U	1 U	1 U
1,2-Dibromoethane	5 U	0.5 U	0.5 U	0.25 U	1.2 U	0.25 U	0.25 U	0.25 U	0.5 U	0.5 U
1,2-Dichlorobenzene	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	0.26 J	0.5 J	0.62 J
1,2-Dichloroethane	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 U	2 U
1,2-Dichloropropane	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 U	2 U
1,3,5-Trimethylbenzene										
1,3-Dichlorobenzene	20 U	2 U	0.65 U	1 U	5 U	1 U	0.32 U	1 U	2 U	2 U
1,3-Dichloropropane										
1,4-Dichlorobenzene	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 UJ	2.1
2,2-Dichloropropane										
2-Butanone	200 U	37	140	10 U	50 U	10 U	2.5 U	10 U	20 U	20 U
2-Chloroethyl Vinyl Ether										
2-Chlorotoluene										
2-Hexanone	100 U	10 U	1.5 U	5 U	25 U	5 U	0.75 U	5 U	10 U	10 U
4-Chlorotoluene										
4-Isopropyltoluene										
4-methyl-2-Pentanone	100 U	10 U	1.4 U	5 UJ	25 U	5 U	0.72 U	5 U	10 U	10 U
Acetone	200 U	12 JB	20 JB	4.6 J	50 U	2.5 JB	2.1 UJ	2.9 JB	20 U	2.2 JB
Acrolein										
Acrylonitrile										
Benzene	20 U	2 U	0.55 U	1 U	5 U	1 U	0.28 U	0.59 J	0.25 J	0.24 J
Bromobenzene										
Bromochloromethane	20 U	0.66 J	0.55 U	1 U	5 U	1 U	0.28 U	1 U	2 U	2 U
Bromodichloromethane	12 U	1.2 U	0.5 U	0.6 U	3 U	0.6 U	0.25 U	0.6 U	1.2 U	1.2 U
Bromoform	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 U	2 U
Bromomethane	20 UJ	2 UJ	1.6 U	1 U	5 UJ	1 UJ	0.8 U	1 U	2 U	2 UJ
Carbon Disulfide	20 U	2 U	0.65 U	1 U	5 U	1 U	0.32 U	1 U	2 U	2 U
Carbon Tetrachloride	20 U	2 U	0.75 U	1 U	5 U	1 U	0.38 U	1 U	2 U	2 U
Chlorobenzene	20 U	0.64 J	2.8 J	1 U	4.4 J	3.6	2.2 J	8.9	5.9	3.5
Chlorodibromomethane	8 U	0.8 U	0.5 U	0.4 U	2 U	0.4 U	0.25 U	0.4 U	0.8 U	0.8 U
Chloroethane	20 U	2 U	0.9 U	1 U	5 U	1 U	0.45 U	1 U	2 U	2 U

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU250B	OLDOU250B	OLDOU250B	OLDOU251A	OLDOU251B	OLDOU251B	OLDOU251B	OLDOU252A	OLDOU252B	OLDOU252B
SAMPLE ID	TO02OU2MW50BBL	TO02MW50BEQ109	TO2OU250BEQ209	TO02OU2MW51ABL	TO02OU2MW51BBL	TO02MW51BEQ109	TO2OU251BEQ209	TO02OU2MW52ABL	TO02OU2MW52BBL	TO02MW52BEQ109
SAMPLE DATE	20080611	20090121	20090423	20080613	20080612	20090121	20090423	20080610	20080610	20090121
Chloroform	20 U	6.8	3.7 J	0.61 J	5 U	1 U	0.28 U	0.62 JB	2 U	2 U
Chloromethane	20 U	2 UJ	1.4 U	1 U	5 U	1 UJ	0.72 U	1 U	2 U	2 UJ
cis-1,2-Dichloroethene	84	370	370	1	24	130 J	110	11	14	100
cis-1,3-Dichloropropene	10 U	1 U	0.55 U	0.5 U	2.5 U	0.5 U	0.28 U	0.5 U	1 U	1 U
Cyclohexane	10 U	1 U	1 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U
Dibromomethane										
Dichlorodifluoromethane	20 U	2 U	1.1 U	1 U	5 U	1 U	0.55 U	1 UJ	2 UJ	2 U
Ethylbenzene	20 U	0.36 J	0.65 U	1 U	5 U	1 U	0.32 U	1 U	2 U	2 U
Hexachlorobutadiene										
Isopropylbenzene	16 U	1.6 U	0.75 U	0.8 U	4 U	0.8 U	0.38 U	0.8 U	0.14 J	1.6 U
m+p-Xylenes										
Methyl Acetate	20 U	2 U	1.5 U	1 U	5 U	1 U	0.75 U	1 U	2 U	2 U
Methyl Cyclohexane	12 U	1.2 U	0.85 U	0.6 U	3 U	0.6 U	0.42 U	0.6 U	1.2 U	1.2 U
Methyl Tert-Butyl Ether	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 U	2 U
Methylene Chloride	8.4 JB	4.1 JB	12 JB	0.39 JB	2.2 JB	1 U	2.5 JB	0.42 JB	2.3 JB	1.8 JB
n-Butylbenzene										
n-Propylbenzene										
Naphthalene										
o-Xylene										
sec-Butylbenzene										
Styrene	20 U	2 U	0.5 U	1 U	5 U	1 U	0.25 U	1 U	2 U	2 U
tert-Butylbenzene										
Tetrachloroethene	13 J	0.45 J	0.75 U	0.34 J	9.4	4.4	6.2	4.3	8.1	7.8
Toluene	20 U	1.4 J	4.7 J	1 U	5 U	0.16 J	0.25 U	1 U	2 U	0.31 J
Total Xylenes	20 U	2 U		1 U	5 U	1 U		1 U	2 U	2 U
trans-1,2-Dichloroethene	20 U	0.4 J	0.65 U	1 U	5 U	1 U	0.32 U	0.46 J	2 U	2 U
trans-1,3-Dichloropropene	14 U	1.4 U	0.5 U	0.7 U	3.5 U	0.7 U	0.25 U	0.7 U	1.4 U	1.4 U
Trichloroethene	1800	46	49	12	550	77	270	98	350	340
Trichlorofluoromethane	20 U	2 U	0.85 U	1 UJ	5 U	1 U	0.42 U	1 U	2 U	2 U
Vinyl Acetate										
Vinyl Chloride	22	2.3	4 J	1 U	5.8	1.4	5.4	2	4	2 U
Volatile Gases (µg/L)										
Ethane		1 U	1 U			1 U	1 U			1 U
Ethene		1 U	1.7			1 U	3			1 U
Methane		630 B	3300 JB			600 B	750 JB			520 B
Petroleum Hydrocarbons (mg/L)										
Total Petroleum Hydrocarbons	0.19 J			0.35 J	0.49 U			1.2	0.32 J	
Inorganics (µg/L)										
Iron										
Manganese										

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU250B	OLDOU250B	OLDOU250B	OLDOU251A	OLDOU251B	OLDOU251B	OLDOU251B	OLDOU252A	OLDOU252B	OLDOU252B
SAMPLE ID	TO02OU2MW50BBL	TO02MW50BEQ109	TO2OU250BEQ209	TO02OU2MW51ABL	TO02OU2MW51BBL	TO02MW51BEQ109	TO2OU251BEQ209	TO02OU2MW52ABL	TO02OU2MW52BBL	TO02MW52BEQ109
SAMPLE DATE	20080611	20090121	20090423	20080613	20080612	20090121	20090423	20080610	20080610	20090121
Miscellaneous Parameters (mg/L)										
Alkalinity	18.5			30.7	15.6			32.4	15.1	
Ammonia-N										
Ammonium										
Carbon Dioxide										
Chloride										
Dissolved Organic Carbon										
Dissolved Oxygen										
Nitrate-N										
Nitrite-N										
Nitrogen										
Orthophosphate-P										
Oxygen										
Sodium	16.9			30.5	10.1			8.25	8.16	
Sulfate		25 U	1.15 J			2.8 J	12.2			18.3 J
Sulfide		9.9	7.1 J			3	3.5			1.5 J
Total Dissolved Solids	266 J			2360 J	112 J			120 J	68 J	
Total Organic Carbon	4.8	371	238	24.9	3.7	3.9	3.32	11.8	6.1	5.3
Total Suspended Solids	4 U			32.8 J	4 UJ			6.8	4 U	
Field Parameters										
Depth To Groundwater (feet)	5.8	6.09	5.99		9.68	8.64	9		7.43	6.43
Dissolved Oxygen (mg/L)	0.15	0.99	0.38		0.29	0.94	0.42		0.88	0.68
Ferrous Iron (mg/L)		3	4.5				3			
Final Volume (gallons)	19	5.5	6		16.5	7.5	4.5		4.1	7.5
Oxidation Reduction Potential (mV)	-98.5	-159	-179		-113	-182	-215		-17.4	88.3
pH	5.58	4.37	4.62		5.36	4.88	4.94		5.28	4.96
Specific Conductance (µmhos)	186	482	482		134	166	170		132	103
Temperature (°C)	34.72	23.2	24.7		38.35	23.5	24.5		23.31	22.58
Turbidity (NTU)	128	2.6	1.95		1.79	1.24	1.97		5.57	1.09

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU253A	OLDOU253B	OLDOU253B	OLDOU253B	OLDOU2DP01A	OLDOU2DP01A	OLDOU2DP01A	OLDOU2DP02A	OLDOU2DP02A	OLDOU2DP02A
SAMPLE ID	TO02OU2MW53ABL	TO02OU2MW53BBL	TO02MW53BEQ109	TO2OU253BEQ209	OLD-OU2-DP01A_20080319	OLD-OU2-DP01A_20081006	OLD-OU2-DP01A_20090326	OLD-OU2-DP02A_20080319	OLD-OU2-DP02A_20081006	OLD-OU2-DP02A_20090326
SAMPLE DATE	20080611	20080611	20090121	20090423	20080319	20081006	20090326	20080319	20081006	20090326
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane					0.236 U		1 U	0.236 U		1 U
1,1,1-Trichloroethane	1 U	40 U	20 U	2.6 J	0.424 U	1 U	1 U	0.424 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.25 UJ	10 U	5 U	1 U	0.226 U	1 U	1 U	0.226 U	1 U	1 U
1,1,2-Trichloroethane	1 U	40 U	20 U	1 U	0.312 U	1 U	1 U	0.312 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	1 U	40 U	20 U	1.8 U						
1,1-Dichloroethane	1 U	40 U	20 U	1.2 U	0.388 U	1 U	1 U	0.388 U	1 U	1 U
1,1-Dichloroethene	1 U	40 U	20 U	2.9 J	0.899 U	1 U	1 U	0.899 U	1 U	1 U
1,1-Dichloropropene					0.404 U		1 U	0.404 U		1 U
1,2,3-Trichlorobenzene	1 UJ	40 U	20 U	1 U	0.981 U		1 U	0.981 U		1 U
1,2,3-Trichloropropane					0.29 U		2 U	0.29 U		2 U
1,2,4-Trichlorobenzene	1 UJ	40 U	20 U	1.4 JB	0.73 U		1 U	0.73 U		1 U
1,2,4-Trimethylbenzene					0.516 U		2 U	0.516 U		2 U
1,2-dibromo-3-Chloropropane	0.5 U	20 U	10 U	1.1 U	1.63 U		2 U	1.63 U		2 U
1,2-Dibromoethane	0.25 U	10 U	5 U	1 U	0.363 U		1 U	0.363 U		1 U
1,2-Dichlorobenzene	1 U	40 U	20 U	1 U	0.394 U		1 U	0.394 U		1 U
1,2-Dichloroethane	1 U	40 U	20 U	1 U	0.989 U	1 U	1 U	0.989 U	1 U	1 U
1,2-Dichloropropane	1 U	40 U	20 U	1 U	0.563 U	1 U	1 U	0.563 U	1 U	1 U
1,3,5-Trimethylbenzene					0.416 U		2 U	0.416 U		2 U
1,3-Dichlorobenzene	1 U	40 U	20 U	1.3 U	0.502 U		1 U	0.502 U		1 U
1,3-Dichloropropane					0.28 U		1 U	0.28 U		1 U
1,4-Dichlorobenzene	1 U	40 U	20 U	1.1 J	0.412 U		1 U	0.412 U		1 U
2,2-Dichloropropane					0.795 U		1 U	0.795 U		1 U
2-Butanone	10 UJ	400 U	200 U	48 J	1.64 U	5 U	5 U	1.64 U	5 U	5 U
2-Chloroethyl Vinyl Ether							5 U			5 U
2-Chlorotoluene					0.661 U		1 U	0.661 U		1 U
2-Hexanone	5 U	200 U	100 U	3 U	0.935 U	10 U	10 U	0.935 U	10 U	10 U
4-Chlorotoluene					0.357 U		1 U	0.357 U		1 U
4-Isopropyltoluene					0.303 U		1 U	0.303 U		1 U
4-methyl-2-Pentanone	5 UJ	200 U	100 U	2.9 U	0.323 U	5 U	5 U	0.323 U	5 U	5 U
Acetone	5 J	400 U	200 U	21 JB	1.18 U	25 U	25 U	1.18 U	25 U	25 U
Acrolein							20 U			20 U
Acrylonitrile							10 U			10 U
Benzene	0.49 J	40 U	20 U	3.5 JB	4.96	1.8	1 U	0.305 U	1 U	1 U
Bromobenzene					0.536 U		1 U	0.536 U		1 U
Bromochloromethane	1 U	40 U	20 U	1.1 U	0.899 U		1 U	0.899 U		1 U
Bromodichloromethane	0.6 U	24 U	12 U	1 U	0.452 U	1 U	1 U	0.452 U	1 U	1 U
Bromoform	1 U	40 U	20 U	1 U	0.494 U	1 U	1 U	0.494 U	1 U	1 U
Bromomethane	1 UJ	40 UJ	20 UJ	3.2 U	1.42 UJ	2 U	2 U	1.42 UJ	2 U	2 U
Carbon Disulfide	1 UJ	40 U	20 U	4 J	0.5 U	2 U	2 U	0.5 U	2 U	2 U
Carbon Tetrachloride	1 U	40 U	20 U	2.1 J	0.5 U	1 U	1 U	0.5 U	1 U	1 U
Chlorobenzene	6.8	40 U	5.2 J	3.2 J	2.17	0.56 I	1 U	0.2 J	1 U	1
Chlorodibromomethane	0.33 J	16 U	8 U	1 U	0.374 U	1 U	1 U	0.374 U	1 U	1 U
Chloroethane	1 U	40 U	20 U	1.8 U	1.01 UJ	2 U	2 U	1.01 UJ	2 U	2 U

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU253A	OLDOU253B	OLDOU253B	OLDOU253B	OLDOU2DP01A	OLDOU2DP01A	OLDOU2DP01A	OLDOU2DP02A	OLDOU2DP02A	OLDOU2DP02A
SAMPLE ID	TO02OU2MW53ABL	TO02OU2MW53BBL	TO02MW53BEQ109	TO2OU253BEQ209	OLD-OU2-DP01A_20080319	OLD-OU2-DP01A_20081006	OLD-OU2-DP01A_20090326	OLD-OU2-DP02A_20080319	OLD-OU2-DP02A_20081006	OLD-OU2-DP02A_20090326
SAMPLE DATE	20080611	20080611	20090121	20090423	20080319	20081006	20090326	20080319	20081006	20090326
Chloroform	6.3	40 U	20 U	11	0.554 U	1 U	1 U	0.554 U	1 U	1 U
Chloromethane	1 U	40 U	20 UJ	4.9 J	0.576 U	2 U	2 U	0.576 U	2 U	2 U
cis-1,2-Dichloroethene	8.7	130 J	150	760 J	2.88	1.2	1 U	14.7	21.6	218
cis-1,3-Dichloropropene	0.5 U	20 U	10 U	1.1 U	0.465 U	1 U	1 U	0.465 U	1 U	1 U
Cyclohexane	0.5 U	20 U	10 U	2 U						
Dibromomethane					0.261 U		2 U	0.261 U		2 U
Dichlorodifluoromethane	1 UJ	40 U	20 U	2.2 U	0.844 UJ		2 U	0.844 UJ		2 U
Ethylbenzene	1 U	40 U	20 U	2.5 JB	0.338 U	1 U	1 U	0.338 U	1 U	1 U
Hexachlorobutadiene					1.2 U		2 U	1.2 U		2 U
Isopropylbenzene	0.8 U	32 U	16 U	2.5 J	0.365 U		1 U	0.365 U		1 U
m+p-Xylenes							2 U			2 U
Methyl Acetate	1 U	40 U	20 U	3 U						
Methyl Cyclohexane	0.6 U	24 U	12 U	1.7 U						
Methyl Tert-Butyl Ether	1 U	40 U	20 U	1 U	0.336 U		1 U	0.336 U		1 U
Methylene Chloride	1 U	14 JB	17 JB	15 JB	0.834 U	5 U	5 U	0.834 U	5 U	5 U
n-Butylbenzene					0.319 U		1 U	0.319 U		1 U
n-Propylbenzene					0.669 U		1 U	0.669 U		1 U
Naphthalene					0.452 U		5 U	0.452 U		5 U
o-Xylene							1 U			1 U
sec-Butylbenzene					0.539 U		1 U	0.539 U		1 U
Styrene	1 U	40 U	20 U	1 U	0.203 U	1 U	1 U	0.203 U	1 U	1 U
tert-Butylbenzene					0.776 U		1 U	0.776 U		1 U
Tetrachloroethene	1.5	28 J	19 J	3.8 J	0.381 U	1 U	1 U	1.13	0.35 I	1 U
Toluene	1 U	40 U	20 U	2.8 J	0.257 U	1 U	1 U	0.257 U	1 U	1 U
Total Xylenes	1 U	40 U	20 U		0.433 U	3 U		0.433 U	3 U	
trans-1,2-Dichloroethene	1 U	40 U	20 U	3.2 J	0.244 U	1 U	1 U	0.244 U	1 U	1
trans-1,3-Dichloropropene	0.7 U	28 U	14 U	1 U	0.229 U	1 U	1 U	0.229 U	1 U	1 U
Trichloroethene	35	3700 J	2100	110 J	15.5	1 U	1 U	22.7	4.4	35
Trichlorofluoromethane	1 U	40 U	20 U	1.7 U	0.672 U		2 U	0.672 U		2 U
Vinyl Acetate							10 U			10 U
Vinyl Chloride	2.4	40 J	18 J	10 J	4.26	3.4	0.32 I	0.986 U	0.42 I	3
Volatile Gases (µg/L)										
Ethane			1 U	1 U				0.01 U	1 U	1 U
Ethene			2.2	3				0.04	1 U	1 U
Methane			590 B	610 JB				44	38.5	429
Petroleum Hydrocarbons (mg/L)										
Total Petroleum Hydrocarbons	0.25 J	0.49 U								
Inorganics (µg/L)										
Iron								7820	3130	1950
Manganese								4.8 J	3.1 I	1 I

AREA	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH	OU2-SOUTH
LOCATION	OLDOU253A	OLDOU253B	OLDOU253B	OLDOU253B	OLDOU2DP01A	OLDOU2DP01A	OLDOU2DP01A	OLDOU2DP02A	OLDOU2DP02A	OLDOU2DP02A
SAMPLE ID	TO02OU2MW53ABL	TO02OU2MW53BBL	TO02MW53BEQ109	TO2OU253BEQ209	OLD-OU2-DP01A_20080319	OLD-OU2-DP01A_20081006	OLD-OU2-DP01A_20090326	OLD-OU2-DP02A_20080319	OLD-OU2-DP02A_20081006	OLD-OU2-DP02A_20090326
SAMPLE DATE	20080611	20080611	20090121	20090423	20080319	20081006	20090326	20080319	20081006	20090326
Miscellaneous Parameters (mg/L)										
Alkalinity	40.8	26.9						0.368 U	5 U	43
Ammonia-N									0.1 U	0.1 U
Ammonium								0.02 U		
Carbon Dioxide								104.6		
Chloride								49.9	42.4	23
Dissolved Organic Carbon								5.49		
Dissolved Oxygen										
Nitrate-N								0.041	0.1 U	0.1 U
Nitrite-N								0.0075 U	0.1 U	0.1 U
Nitrogen								11.8		
Orthophosphate-P								0.008	0.067 I	0.038 I
Oxygen								3.57		
Sodium	9.73	9.15								
Sulfate			9.6 J	5 U				41.4	26	14
Sulfide			7.6	5.4						
Total Dissolved Solids	144 J	105 J								
Total Organic Carbon	4	5.3	6.9	356					11.7	4
Total Suspended Solids	4 U	4 U								
Field Parameters										
Depth To Groundwater (feet)		7.94	6.09	7.95						
Dissolved Oxygen (mg/L)		0.42	0.6	0.4						
Ferrous Iron (mg/L)			2.5	2.5						
Final Volume (gallons)		3.5	6	5						
Oxidation Reduction Potential (mV)		-109	-155	-188						
pH		5.5	5.15	5.33						
Specific Conductance (µmhos)		152	118	126						
Temperature (°C)		25.42	23.5	25.2						
Turbidity (NTU)		4.31	2.17	1.79						

Notes:

Abbreviations:

°C = degrees centigrade
L = liter
mg = milligram
mV = millivolt
µg = microgram
µmhos = micromhos
NTU = nephelometric turbidity unit

Qualifiers:

B = between the laboratory method detection limit and the reporting limit
I = between the laboratory detection limit and the laboratory practical quantitation limit
J = estimated
U = not detected

APPENDIX B

UCL CALCULATIONS

SURFACE SOIL

FDEP UCL Calculator Version 1.0

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for Acetone	
Number of Samples	42
Number of Censored Data	30
Minimum	39.5
Maximum	51400
Mean	3597.6
Median	11
Standard Deviation	10236.87
Variance	
Coefficient of Variation	2.845473
Skewness	3.356923

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	10482.85
Bounding (1/2 DL)	10480.33

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:
10482.85

FDEP UCL Calculator Version 1.0

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for BaP	
Number of Samples	99
Number of Censored Data	86
Minimum	0.21
Maximum	1.7
Mean	0.169626
Median	0.094
Standard Deviation	0.26155
Variance	
Coefficient of Variation	1.541922
Skewness	4.565484

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	0.284208
Bounding (1/2 DL)	0.245117

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:
0.284208

FDEP UCL Calculator Version 1.0

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for Floruanthe	
Number of Samples	99
Number of Censored Data	90
Minimum	0.509
Maximum	1.67
Mean	0.441434
Median	0.37
Standard Deviation	0.26511
Variance	
Coefficient of Variation	0.600566
Skewness	3.909349

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	0.557575
Bounding (1/2 DL)	0.374186

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:
0.557575

FDEP UCL Calculator Version 1.0

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for Pyrene	
Number of Samples	99
Number of Censored Data	92
Minimum	0.509
Maximum	1.6
Mean	0.42049
Median	0.37
Standard Deviation	0.210795
Variance	
Coefficient of Variation	0.501309
Skewness	4.360199

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	0.512836
Bounding (1/2 DL)	0.316072

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:
0.512836

FDEP UCL Calculator Version 1.0

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for 4,4-DDE	
Number of Samples	99
Number of Censored Data	80
Minimum	0.0034
Maximum	0.041
Mean	0.002366
Median	0.00099
Standard Deviation	0.00452
Variance	
Coefficient of Variation	1.910485
Skewness	6.864792

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	0.004346
Bounding (1/2 DL)	0.003814

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:
0.004346

FDEP UCL Calculator Version 1.0

Summary Statistics for Arsenic	
Number of Samples	99
Number of Censored Data	34
Minimum	0.12
Maximum	4.8
Mean	1.326616
Median	1.03
Standard Deviation	1.175139
Variance	1.380951
Coefficient of Variation	0.885817
Skewness	0.997983

95% UCL (Assuming Normal Data)	
Student's-t	1.522737

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	1.53356
Modified-t	1.524711

95% Non-parametric UCL	
CLT	1.5209
Jackknife	NA
Standard Bootstrap	1.485183
Bootstrap-t	1.629594
Chebyshev (Mean, Std)	1.84144

Summary Statistics for ln(Arsenic)	
Minimum	-2.12026
Maximum	1.568616
Mean	-0.20824
Standard Deviation	1.087391
Variance	1.18242

Goodness-of-Fit Results	
Distribution Recommended	Neither
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	1.466627
MLE Standard Deviation	2.205926
MLE Median	0.812008
MLE Coefficient of Variation	1.504081
MVUE Estimate of Mean	1.446069
MVUE Estimate of Std. Dev.	2.059017
MVUE Estimate of SE	0.23691
MVUE Coefficient of Variation	1.423871

UCL Assuming Lognormal Distribution	
95% H-UCL	1.888305
95% Chebyshev (MVUE) UCL	2.478739
99% Chebyshev (MVUE) UCL	3.803305

FDEP Recommended UCL to Use:
1.84144

FDEP UCL Calculator Version 1.0

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for Mercury	
Number of Samples	99
Number of Censored Data	91
Minimum	0.1
Maximum	0.22
Mean	0.089646
Median	0.09
Standard Deviation	0.022304
Variance	
Coefficient of Variation	0.248795
Skewness	1.293712

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	0.099868
Bounding (1/2 DL)	0.059942

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:
0.099868

FDEP UCL Calculator Version 1.0

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for Selenium	
Number of Samples	99
Number of Censored Data	85
Minimum	0.45
Maximum	0.62
Mean	0.41851
Median	0.41
Standard Deviation	0.055401
Variance	
Coefficient of Variation	0.132376
Skewness	0.14912

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	0.449468
Bounding (1/2 DL)	0.283796

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:
0.449468

FDEP UCL Calculator Version 1.0

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for Silver	
Number of Samples	99
Number of Censored Data	88
Minimum	0.28
Maximum	2.4
Mean	0.274949
Median	0.22
Standard Deviation	0.286319
Variance	
Coefficient of Variation	1.04135
Skewness	6.230383

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	0.400382
Bounding (1/2 DL)	0.31223

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:
0.400382

APPENDIX C

COST ESTIMATES

OPERABLE UNIT 2
NAVAL TRAINING CENTER
ORLANDO, FL

ALTERNATIVE N-2: LANDFILL CONTAINMENT, LAND USE CONTROLS, AND MONITORING

PAGE 1, OPERATION AND MAINTENANCE COSTS

Item	Qty	Unit	Unit Cost	Subtotal Cost
GROUNDWATER AND SURFACE WATER MONITORING, YEARS 1-10				
Maintenance/Repair of Monitoring Wells	1	ls	$1,000	$1,000
Sampling				
Semi-annual Sampling of 8 Wells	16	sample	$130	$2,080
Semi-annual Sampling of 3 Surface Water sample points	6	sample	$622	$3,732
Analysis				
Groundwater sample analysis (16 samples + 2 QA/QC)	18	sample	$273	$4,914
Surface Water sample analysis (6 samples + 2 QA/QC)	8	sample	$138	$1,104
Semi-annual Sample Report	2	report	$4,470	$8,940
Subtotal				$21,770
G&A and Profit @ 15%				$3,266
Total Groundwater and Surface Water Monitoring Cost, Years 1-10				**$25,036**
MAINTENANCE OF LANDFILL CONTAINMENT	1	ls	$5,000	$5,000
Subtotal				$5,000
G&A and Profit @ 15%				$750
Total Landfill Containment Maintenance Cost				**$5,750**
TOTAL ANNUAL O&M, YEARS 1-10				**$30,786**
TOTAL ANNUAL O&M, YEARS 11-30				**$5,750**

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ALTERNATIVE N-2: LANDFILL CONTAINMENT, LAND USE CONTROLS, AND MONITORING

PAGE 2, PERIODIC COSTS

Cost Item	Quantity	Unit	Unit Cost[a]	Total Cost
LANDFILL CONTAINMENT AND LAND USE CONTROL MONITORING				
Quarterly Site Inspections				
Project Manager (8 hrs for each Inspection)	32	hr	$83	$2,657
ODCs (travel, etc.)	1	ls	$3,000	$3,000
Annual Review and Report				
Project Manager	12	hr	$83	$996
Senior Staff Engineer	24	hr	$68	$1,634
ODCs (photocopies, telephone, etc.)	1	ls	$500	$500
Subtotal				$8,788
G&A and Profit @ 15%				$1,318
Total Landfill Containment and Land Use Control Monitoring Cost				**$10,106**
FIVE YEAR SITE REVIEW				
Site Review Meeting (2-persons for 2-days)				
Project Manager	16	hr	$83	$1,329
Senior Staff Engineer	16	hr	$68	$1,090
ODCs (travel, etc.)	1	ls	$1,000	$1,000
Review Report				
Project Manager	16	hr	$83	$1,329
Senior Staff Engineer	32	hr	$68	$2,179
ODCs (photocopies, telephone, etc.)	1	ls	$500	$500
Subtotal				$7,426
G&A and Profit @ 15%				$1,114
Total Five Year Review Cost				**$8,540**

[a] Includes overhead on professional labor @ 100%.

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ALTERNATIVE N-2: LANDFILL CONTAINMENT, LAND USE CONTROLS, AND MONITORING

PAGE 3, PRESENT WORTH ANALYSIS

Year	Capital Cost	Operation and Maintenance Cost	Annual Cost	Total Yearly Cost	Present-Worth Factor (i = 7%)	Present Worth
0	$0			$0	1.000	$0
1		$30,786	$10,106	$40,892	0.969	$39,624
2		$30,786	$10,106	$40,892	0.939	$38,395
3		$30,786	$10,106	$40,892	0.910	$37,205
4		$30,786	$10,106	$40,892	0.882	$36,051
5		$30,786	$18,646	$49,432	0.854	$42,229
6		$30,786	$10,106	$40,892	0.828	$33,850
7		$30,786	$10,106	$40,892	0.802	$32,800
8		$30,786	$10,106	$40,892	0.777	$31,783
9		$30,786	$10,106	$40,892	0.753	$30,798
10		$30,786	$18,646	$49,432	0.730	$36,075
11		$5,750	$10,106	$15,856	0.707	$11,213
12		$5,750	$10,106	$15,856	0.685	$10,865
13		$5,750	$10,106	$15,856	0.664	$10,529
14		$5,750	$10,106	$15,856	0.643	$10,202
15		$5,750	$18,646	$24,396	0.623	$15,210
16		$5,750	$10,106	$15,856	0.604	$9,579
17		$5,750	$10,106	$15,856	0.585	$9,282
18		$5,750	$10,106	$15,856	0.567	$8,994
19		$5,750	$10,106	$15,856	0.550	$8,715
20		$5,750	$18,646	$24,396	0.533	$12,994
21		$5,750	$10,106	$15,856	0.516	$8,183
22		$5,750	$10,106	$15,856	0.500	$7,930
23		$5,750	$10,106	$15,856	0.485	$7,684
24		$5,750	$10,106	$15,856	0.470	$7,445
25		$5,750	$18,646	$24,396	0.455	$11,100
26		$5,750	$10,106	$15,856	0.441	$6,991
27		$5,750	$10,106	$15,856	0.427	$6,774
28		$5,750	$10,106	$15,856	0.414	$6,564
29		$5,750	$10,106	$15,856	0.401	$6,361
30		$5,750	$18,646	$24,396	0.389	$9,483
				TOTAL PRESENT WORTH		**$544,909**

OPERABLE UNIT 2
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ALTERNATIVE S-2: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTAINMENT THROUGH MONITORED NATURAL ATTENUATION, LAND USE CONTROLS, AND MONITORING

PAGE 1, OPERATION AND MAINTENANCE COSTS

Item	Qty	Unit	Unit Cost	Subtotal Cost
GROUNDWATER AND SURFACE WATER MONITORING, YEARS 1-10				
Maintenance/Repair of Monitoring Wells	1	ls	$1,000	$1,000
Sampling				
Semi-annual Sampling of 8 Wells	16	sample	$130	$2,080
Semi-annual Sampling of 3 surface water sample points	6	sample	$622	$3,732
Analysis				
Groundwater sample analysis (16 samples + 2 QA/QC)	18	sample	$273	$4,914
Surface Water sample analysis (6 samples + 2 QA/QC)	8	sample	$138	$1,104
Semi-annual Sample Report	2	report	$4,470	$8,940
Subtotal				$21,770
G&A and Profit @ 15%				$3,266
Total Groundwater and Surface Water Monitoring Cost, Years 1-10				**$25,036**
MAINTENANCE OF LANDFILL CONTAINMENT	1	ls	$5,000	$5,000
Subtotal				$5,000
G&A and Profit @ 15%				$750
Total Soil Cover Maintenance Cost				**$5,750**
TOTAL ANNUAL O&M, YEARS 1-10				**$30,786**
TOTAL ANNUAL O&M, YEARS 11-30				**$5,750**

OPERABLE UNIT 2
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ALTERNATIVE S-2: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTAINMENT THROUGH MONITORED NATURAL ATTENUATION, LAND USE CONTROLS, AND MONITORING

PAGE 2, PERIODIC COSTS

Cost Item	Quantity	Unit	Unit Cost[a]	Total Cost
LANDFILL CONTAINMENT AND LAND USE CONTROL MONITORING				
Quarterly Site Inspections				
Project Manager (8 hrs for each Inspection)	32	hr	$83	$2,657
ODCs (travel, etc.)	1	ls	$3,000	$3,000
Annual Review and Report				
Project Manager	12	hr	$83	$996
Senior Staff Engineer	24	hr	$68	$1,634
ODCs (photocopies, telephone, etc.)	1	ls	$500	$500
Subtotal				$8,788
G&A and Profit @ 15%				$1,318
Total Landfill Containment and Land Use Control Monitoring Cost				**$10,106**
FIVE YEAR SITE REVIEW				
Site Review Meeting (2-persons for 2-days)				
Project Manager	16	hr	$83	$1,329
Senior Staff Engineer	16	hr	$68	$1,090
ODCs (travel, etc.)	1	ls	$1,000	$1,000
Review Report				
Project Manager	16	hr	$83	$1,329
Senior Staff Engineer	40	hr	$68	$2,724
ODCs (photocopies, telephone, etc.)	1	ls	$1,000	$1,000
Subtotal				$8,471
G&A and Profit @ 15%				$1,271
Total Five Year Review Cost				**$8,471**

[a] Includes overhead on professional labor @ 100%.

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ORLANDO, FL

ALTERNATIVE S-2: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTAINMENT THROUGH MONITORED NATURAL ATTENUATION, LAND USE CONTROLS, AND MONITORING

PAGE 3, PRESENT WORTH ANALYSIS

Year	Capital Cost	Operation and Maintenance Cos	Annual Cost	Total Yearly Cost	Present-Worth Factor (i = 7%)	Present Worth
0	$0			$0	1.000	$0
1		$30,786	$10,106	$40,892	0.969	$39,624
2		$30,786	$10,106	$40,892	0.939	$38,395
3		$30,786	$10,106	$40,892	0.910	$37,205
4		$30,786	$10,106	$40,892	0.882	$36,051
5		$30,786	$18,577	$49,363	0.854	$42,170
6		$30,786	$10,106	$40,892	0.828	$33,850
7		$30,786	$10,106	$40,892	0.802	$32,800
8		$30,786	$10,106	$40,892	0.777	$31,783
9		$30,786	$10,106	$40,892	0.753	$30,798
10		$30,786	$18,577	$49,363	0.730	$36,025
11		$5,750	$10,106	$15,856	0.707	$11,213
12		$5,750	$10,106	$15,856	0.685	$10,865
13		$5,750	$10,106	$15,856	0.664	$10,529
14		$5,750	$10,106	$15,856	0.643	$10,202
15		$5,750	$18,577	$24,327	0.623	$15,167
16		$5,750	$10,106	$15,856	0.604	$9,579
17		$5,750	$10,106	$15,856	0.585	$9,282
18		$5,750	$10,106	$15,856	0.567	$8,994
19		$5,750	$10,106	$15,856	0.550	$8,715
20		$5,750	$18,577	$24,327	0.533	$12,957
21		$5,750	$10,106	$15,856	0.516	$8,183
22		$5,750	$10,106	$15,856	0.500	$7,930
23		$5,750	$10,106	$15,856	0.485	$7,684
24		$5,750	$10,106	$15,856	0.470	$7,445
25		$5,750	$18,577	$24,327	0.455	$11,069
26		$5,750	$10,106	$15,856	0.441	$6,991
27		$5,750	$10,106	$15,856	0.427	$6,774
28		$5,750	$10,106	$15,856	0.414	$6,564
29		$5,750	$10,106	$15,856	0.401	$6,361
30		$5,750	$18,577	$24,327	0.389	$9,456
TOTAL PRESENT WORTH						**$544,662**

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ALTERNATIVE S-3: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTAINMENT THROUGH A BIOBARRIER, LAND USE CONTROLS, AND MONITORING

PAGE 1, CAPITAL COSTS

Item	Quantity	Unit	Unit Price	Cost
INSTALLATION OF BIOBARRIER				
Project Planning	1	LS	$55,000	$55,000
Mobilization/Demobilization	1	LS	$22,000	$22,000
Injection Well Installation (DPT)	18	Well	$8,000	$144,000
Monitoring Well Installation	12	Well Pair	$10,000	$120,000
Waste Disposal	1	LS	$15,000	$15,000
Construction Management	1	LS	$100,000	$100,000
Subtotal				$456,000
G&A and Profit @ 15%				$68,400
Total Biobarrier Installation Cost				**$524,400**
EOS INJECTION				
EOS Procurement/Injection	5000	gallon	$100	$500,000
Equipment mobilization/demobilization	1	LS	$16,000	$16,000
Personnel mobilization/demobilization	1	LS	$12,000	$12,000
Travel and Per Diem	30	day	$1,000	$30,000
Technical Support/Consulting	1	LS	$12,000	$12,000
Subtotal				$570,000
G&A and Profit @ 15%				$85,500
Total EOS Injection Cost				**$655,500**
TOTAL CAPITAL COSTS				**$1,179,900**

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ALTERNATIVE S-3: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTAINMENT THROUGH A BIOBARRIER, LAND USE CONTROLS, AND MONITORING

PAGE 2, OPERATION AND MAINTENANCE COSTS

Item	Qty	Unit	Unit Cost	Subtotal Cost
GROUNDWATER AND SURFACE WATER MONITORING, YEARS 1-10				
Maintenance/Repair of Monitoring Wells	1	ls	$5,000	$5,000
Sampling				
Semi-annual Sampling of 49 Wells	98	sample	$130	$12,740
Semi-annual Sampling of 7 Surface Water sample points	14	sample	$622	$8,708
Analysis				
Groundwater sample analysis (98 samples + 10 QA/QC)	108	sample	$273	$29,484
Surface Water sample analysis (14 samples + 2 QA/QC)	14	sample	$138	$1,932
Semi-annual Sample Report	2	report	$4,470	$8,940
Subtotal				$66,804
G&A and Profit @ 15%				$10,021
Total Groundwater and Surface Water Monitoring Cost, Years 1-10				**$76,825**
GROUNDWATER AND SURFACE WATER MONITORING, YEARS 11-30				
Maintenance/Repair of Monitoring Wells	1	ls	$5,000	$5,000
Sampling				
Semi-annual Sampling of 25 Wells	50	sample	$130	$6,500
Semi-annual Sampling of 4 Surface Water sample points	8	sample	$622	$4,976
Analysis				
Groundwater sample analysis (50 samples + 5 QA/QC)	55	sample	$273	$15,015
Surface Water sample analysis (8 samples + 1 QA/QC)	9	sample	$138	$1,242
Semi-annual Sample Report	2	report	$4,470	$8,940
Subtotal				$41,673
G&A and Profit @ 15%				$6,251
Total Groundwater and Surface Water Monitoring Cost, Years 11-30				**$47,924**
MAINTENANCE OF LANDFILL CONTAINMENT	1	ls	$5,000	$5,000
Subtotal				$5,000
G&A and Profit @ 15%				$750
Total Landfill Containment Maintenance Cost				**$5,750**
TOTAL ANNUAL O&M, YEARS 1-10				**$82,575**
TOTAL ANNUAL O&M, YEARS 11-30				**$53,674**

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ORLANDO, FLORIDA

ALTERNATIVE S-3: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTAINMENT THROUGH A BIOBARRIER, LAND USE CONTROLS, AND MONITORING

PAGE 3, PERIODIC COSTS

Cost Item	Quantity	Unit	Unit Cost*	Total Cost
LANDFILL CONTAINMENT AND LAND USE CONTROL MONITORING				
Quarterly Site Inspections				
Project Manager (8 hrs for each Inspection)	32	hr	$83.04	$2,657
ODCs (travel, etc.)	1	ls	$3,000.00	$3,000
Annual Review and Report				
Project Manager	12	hr	$83.04	$996
Senior Staff Engineer	24	hr	$68.10	$1,634
ODCs (photocopies, telephone, etc.)	1	ls	$500.00	$500
Subtotal				$8,788
G&A and Profit @ 15%				$1,318
Total Landfill Containment and Land Use Control Monitoring Cost				**$10,106**
FIVE YEAR SITE REVIEW				
Site Review Meeting (2-persons for 2-days)				
Project Manager	16	hr	$83.04	$1,329
Senior Staff Engineer	16	hr	$68.10	$1,090
ODCs (travel, etc.)	1	ls	$1,000.00	$1,000
Review Report				
Project Manager	16	hr	$83.04	$1,329
Senior Staff Engineer	60	hr	$68.10	$4,086
ODCs (photocopies, telephone, etc.)	1	ls	$1,000.00	$1,000
Subtotal				$9,833
G&A and Profit @ 15%				$1,475
Total Five Year Review Cost				**$11,308**
EOS REINJECTION, YEARS 2, 4, AND 6				
EOS Procurement/Injection	5000	gallon	$100.00	$500,000
Equipment mobilization/demobilization	1	ls	$16,000.00	$16,000
Personnel mobilization/demobilization	1	ls	$12,000.00	$12,000
Travel and Per Diem	30	day	$1,000.00	$30,000
Technical Support/Consulting	1	ls	$12,000.00	$12,000
Subtotal				$570,000
G&A and Profit @ 15%				$85,500
Total EOS Reinjection Cost				**$655,500**

Includes overhead on professional labor @ 100%.

OPERABLE UNIT 2
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

ALTERNATIVE S-3: LANDFILL CONTAINMENT, SOURCE AREA GROUNDWATER CONTAINMENT THROUGH A BIOBARRIER, LAND USE CONTROLS, AND MONITORING

PAGE 4, PRESENT WORTH ANALYSIS

Year	Capital Cost	Operation and Maintenance Cost	Annual Cost	Total Yearly Cost	Present-Worth Factor (i = 3.5%)	Present Worth
0	$1,179,900			$1,179,900	1.000	$1,179,900
1		$82,575	$10,106	$92,681	0.966	$89,547
2		$82,575	$665,606	$748,181	0.934	$698,435
3		$82,575	$10,106	$92,681	0.902	$83,593
4		$82,575	$665,606	$748,181	0.871	$651,997
5		$82,575	$21,414	$103,989	0.842	$87,556
6		$82,575	$665,606	$748,181	0.814	$608,646
7		$82,575	$10,106	$92,681	0.786	$72,846
8		$82,575	$10,106	$92,681	0.759	$70,383
9		$82,575	$10,106	$92,681	0.734	$68,003
10		$82,575	$21,414	$103,989	0.709	$73,720
11		$53,674	$10,106	$63,780	0.685	$43,686
12		$53,674	$10,106	$63,780	0.662	$42,209
13		$53,674	$10,106	$63,780	0.639	$40,781
14		$53,674	$10,106	$63,780	0.618	$39,402
15		$53,674	$21,414	$75,088	0.597	$44,819
16		$53,674	$10,106	$63,780	0.577	$36,782
17		$53,674	$10,106	$63,780	0.557	$35,539
18		$53,674	$10,106	$63,780	0.538	$34,337
19		$53,674	$10,106	$63,780	0.520	$33,176
20		$53,674	$21,414	$75,088	0.503	$37,737
21		$53,674	$10,106	$63,780	0.486	$30,970
22		$53,674	$10,106	$63,780	0.469	$29,923
23		$53,674	$10,106	$63,780	0.453	$28,911
24		$53,674	$10,106	$63,780	0.438	$27,933
25		$53,674	$21,414	$75,088	0.423	$31,773
26		$53,674	$10,106	$63,780	0.409	$26,076
27		$53,674	$10,106	$63,780	0.395	$25,194
28		$53,674	$10,106	$63,780	0.382	$24,342
29		$53,674	$10,106	$63,780	0.369	$23,519
30		$53,674	$21,414	$75,088	0.356	$26,752
TOTAL PRESENT WORTH						**$4,348,486**