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REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOIL SITES 3, 4, 6, 30, 32, AND 33 NAS WHITING FIELD FL

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REMEDIAL INVESTIGATION REPORT

FOR

SURFACE AND SUBSURFACE SOIL SITES 3, 4, 6, 30, 32, AND 33

Naval Air Station
Whiting Field
Milton, Florida

VOLUME I OF II

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order CTO-0028

SEPTEMBER 1999

Rev. 1
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REMEDIAL INVESTIGATION REPORT

FOR

SURFACE AND SUBSURFACE SOIL
SITES 3, 4, 6, 30, 32, AND 33

NAVAL AIR STATION
WHITING FIELD
MILTON, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
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North Charleston, South Carolina 29406

Submitted by:

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FOREWORD

To meet its mission objectives, the U.S. Navy performs a variety of operations, some requiring the use, handling, storage, or disposal of hazardous materials. Through accidental spills and leaks and conventional methods of past disposal, hazardous materials may have entered the environment in ways unacceptable by today's standards. With growing knowledge of the long-term effects of hazardous materials on the environment, the Department of Defense (DOD) initiated various programs to investigate and remediate conditions related to suspected past releases of hazardous materials at their facilities.

One of these programs is the Installation Restoration (IR) program. This program complies with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA), the Resource Conservation and Recovery Act (RCRA), and the Hazardous and Solid Waste Amendments (HSWA) of 1984. These acts establish the means to assess and clean up hazardous waste sites for both private-sector and Federal facilities. The CERCLA and SARA acts form the basis for what is commonly known as the Superfund program.

Originally, the Navy's part of this program was called the Naval Assessment and Control of Installation Pollutants (NACIP) program. Early reports reflect the NACIP process and terminology. The Navy eventually adopted the program structure and terminology of the standard IR program.

The IR program is conducted in several stages as follows:

- preliminary assessment (PA),
- site inspection (SI) (formerly the PA and SI steps were called the initial assessment study under the NACIP program),
- remedial investigation and feasibility study (RI/FS), and
- remedial design and remedial action (RD/RA).

The Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) manages and the U.S. Environmental Protection Agency (USEPA) and the Florida Department of Environmental Protection (formerly Florida Department of Environmental Regulation) oversee the Navy environmental program at Naval Air Station (NAS) Whiting Field. All aspects of the program are conducted in compliance with State and Federal regulations, as ensured by the participation of these regulatory agencies.

Questions regarding the CERCLA program at NAS Whiting Field should be addressed to Ms. Linda Martin, Code 1859, at (843) 820-5574.

TABLE OF CONTENTS

VOLUME I

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLES

TABLE OF CONTENTS (Continued)

TABLES

TABLE OF CONTENTS (Continued)

TABLES

FIGURES

ACRONYMS

AIMD	Aircraft Intermediate Maintenance Department
ABB-ES	ABB Environmental Services, Inc.
APU	all-purpose universal
ARAR	applicable or relevant and appropriate requirement
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
AVGAS	aviation gasoline
BAF	bioaccumulation factor
BAT	Bengt-Arne-Torstensson
BERA	baseline ecological risk assessment
BEHP	bis(2-ethylhexyl)phthalate
bgs	below ground surface
BRA	baseline risk assessment
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
CLP	Contract Laboratory Program
cm/sec	centimeters per second
COPC	chemical of potential concern
CRDL	contract-required detection limit
CRQL	contract-required quantitation limit
CTE	central tendency exposure
%D	percent Difference
DEHP	diethylhexylphthalate
DON	Department of the Navy
DQO	data quality objective
EDB	ethylene dibromide
ECAO	(USEPA) Environmental Criteria and Assessment Office
ECPC	ecological contaminant of potential concern
Eh	redox potential
ELCR	excess lifetime cancer risk
EM	electromagnetic
EPC	exposure point concentration
ERA	ecological risk assessment
EP TOX	Extraction Procedure Toxicity
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FR	*Federal Register*
FS	feasibility study
ft/day	feet per day
ft/ft	feet per foot
ft/yr	feet per year
GC	gas chromatograph
GIR	General Information Report

ACRONYMS (Continued)

HEAST	Health Effects Assessment Summary Tables
HHCPC	human health chemical of potential concern
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
HRS	Hazard Ranking System
IAS	initial assessment study
ICP	inductively coupled plasma
IDL	instrument detection limit
IR	Installation Restoration
IRIS	Integrated Risk Information System
LD_{50}	lethal dose to 50 percent of test population
LOEC	lowest observed effects concentrations
LOAEL	lowest observed adverse effects level
MAG	magnetometry
MCL	maximum contaminant level
MEK	methyl ethyl ketone
MHSP&E	Ministry of Housing, Spatial Planning and Environment
MIBK	methyl isobutyl ketone
mg/kg	milligrams per kilogram
MS/MSD	matrix spike/matrix spike duplicate
NAS	Naval Air Station
NCEA	National Center for Environmental Assessment
NCP	National Oil and Hazardous Substances Contingency Plan
NEESA	Naval Energy and Environmental Support Activity
NFA	no further action
NOAEL	no observable adverse effects level
NPL	National Priorities List
NTU	nephelometric turbidity unit
NGVD	National Geodetic Vertical Datum
ORNL	Oak Ridge National Laboratory
OSHA	Occupational Safety and Health Act
OVA	organic vapor analyzer
PA	Preliminary Assessment
PAH	polyaromatic hydrocarbon
PARCC	precision, accuracy, representativeness, completeness, and comparability
PCB	polychlorinated biphenyl
PCE	tetrachloroethene (or perchloroethene)
PCPT	piezocone penetrometer test
PDE	potential dietary exposure
QA	quality assurance
QC	quality control
QAPP	Quality Assurance Program Plan

ACRONYMS (Continued)

RBC	risk-based concentration
RfD	reference dose
RGO	remedial goal option
%RSD	percent Relative Standard Deviation
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
RME	reasonable maximum exposure
RPD	relative percent difference
SARA	Superfund Amendments and Reauthorization Act
SCTL	Soil Cleanup Target Levels
SDG	sample delivery group
SFF	site foraging frequency
SMDP	Scientific/Management Decision Points
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
SQL	sample quantitation limit
SSL	soil screening level
SU	standard unit
SVOC	semivolatile organic compound
TAL	target analyte list
TCA	trichloroethane
TCE	trichloroethene
TCL	target compound list
TCLP	Toxicity Characteristic Leaching Procedure
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TRPH	total recoverable petroleum hydrocarbons
TRV	toxicity reference value
UCL	Upper Confidence Limit
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
µmho/cm	micromhos per centimeter
USCS	Unified Soil Classification System
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound

EXECUTIVE SUMMARY

A remedial investigation and feasibility study (RI/FS) is being conducted at Naval Air Station (NAS) Whiting Field in Milton, Florida, by Southern Division, Naval Facilities Engineering Command as part of the Department of Defense Installation Restoration (IR) program. The IR program was designed to identify and abate or control contaminant migration resulting from past operations at naval installations.

A phased approach was implemented to conduct the RI. Phase I was completed in May 1992. The subsequent phases of the RI were designated as Phase II-A, Phase II-B, and Phase II-C. Fieldwork for Phase II-A was completed in March 1994. Fieldwork for Phase II-B was completed in November 1996. Fieldwork for Phase II-C started in February 1998 and was completed in May 1998.

The purpose of the RI is to identify and characterize the nature and extent of chemicals in surface and subsurface soil and to assess the threat(s) to human health and the environment resulting from toxic or hazardous chemicals that might be present at Sites 3, 4, 6, 30, 32, and 33. Assessment of groundwater at these sites will be performed as part of the ongoing Site 40, Basewide Groundwater investigation. The data collected during the RI field program will also be used, if required, in an FS to screen, evaluate, and select remedial alternatives to provide permanent, feasible solutions to environmental impacts resulting from past operational practices or spills at NAS Whiting Field.

This RI Report contains the results of assessment activities used to characterize site-specific chemicals detected in the soil at the following sites:

- Site 3, Underground Waste Solvent Storage Area
- Site 4, North AVGAS Tank Sludge Disposal Area
- Site 6, South Transformer Oil Disposal Area
- Site 30, South Field Maintenance Hangar
- Site 32, North Field Maintenance Hangar
- Site 33, Midfield Maintenance Hangar

Site 3 is located adjacent to Building 2941 and just north of the Paint Locker, Building 2987. The site includes an area where two 500-gallon underground metal tanks were used from 1980 to April of 1984 for the storage of waste solvents and residue generated from paint-stripping operations conducted at Building 2941. Wastes from the tanks were periodically pumped out for off-base disposal. In April of 1984, use of the underground tanks was discontinued and the two tanks were removed from the site. Site 3 also includes an area where an underground waste oil tank was located at the southwestern corner of Building 2941. This tank was used for storage of airframe, power plant, and ground support equipment liquid waste from 1968, and possibly earlier, until 1987. During expansion of the hardstand in 1987, this tank was reportedly removed.

Site 4 is a former underground storage tank (UST) facility located north of Tow Lane at North Field. The former tank farm which is within the fenced North Field restricted area covers approximately 2.5 acres and is currently covered with grass. Site 4 contained nine 23,700-gallon steel tanks dating back to 1943 when NAS Whiting Field first began operations. Eight of the nine USTs at this site were used for aviation gasoline storage. Past use(s) of the ninth tank for anything other than storage of contaminated jet fuel is unknown. All USTs and associated piping were removed in 1992. There are no records of spills or leaks at Site 4, but petroleum contamination was observed when the USTs were removed.

Site 6 is located southeast of the Midfield Maintenance Hanger, Building 1454. At Site 6, from the 1940s until 1964, transformers were reportedly drained into the grassed "0-2" ditch southeast of Building 1454. It is likely the dielectric fluid from the transformers contained polychlorinated biphenyls. Runoff from the grassed ditch drains in a northeasterly direction eventually into Big Coldwater Creek which is located approximately 2.3 miles east of the disposal site (Geraghty & Miller, 1984).

Site 30 is located at the South Field Maintenance Hangar, Building 1406. The site includes Building 1406, the adjacent wash rack area, and the location of the abandoned waste oil tanks west of Building 1406. The South Field Maintenance Hangar was constructed in the middle 1940s to support maintenance service to training aircraft. Activities at this site included engine maintenance, corrosion control, and aircraft cleaning. These activities generated waste stripping compounds, cleaning solvents, paint wastes, alkaline cleaners, detergents, oil, and hydraulic fluids.

Site 32 is located at the North Field Maintenance Hangar, Building 1424. The site includes Building 1424, the adjacent wash rack area, and the location of the abandoned waste oil tanks east of Building 1424. The North Field Maintenance Hangar was constructed in the middle 1940s to support maintenance service to training aircraft. Activities at this site included engine maintenance, corrosion control, and aircraft cleaning. These activities generated waste stripping compounds, cleaning solvents, paint wastes, alkaline cleaners, detergents, oil, and hydraulic fluids. Before Aircraft Intermediate Maintenance Department activities began, aircraft maintenance wastes from Hangar 1424 were reportedly sent to base landfills; however, spills and uncontrolled disposal of solvents at or near the sites of generation were common occurrences in the 1940s and 1950s.

Site 33 is located at the Midfield Maintenance Hangar, Building 1454. The site includes Building 1454 and the location of the abandoned waste oil tank north of Building 1454. The Midfield Maintenance Hangar was constructed in the middle 1940s to support maintenance service of assigned aircraft and line maintenance on transient aircraft. Activities at this site included engine maintenance, corrosion control, and aircraft cleaning.

The fieldwork conducted during the RI included the following tasks:

- Soil gas survey
- Surface soil sampling
- Subsurface soil sampling

Soil gas samples were analyzed for methane and other volatile organic compounds. Surface and subsurface soil samples were analyzed for target compound list organic analytes, TPH, and target analyte list inorganic analytes.

The following conclusions are based on results of the RI investigation activities at Sites 3, 4, 6, 30, 32, and 33 at NAS Whiting Field.

Current Conditions

- The data generated during the RI meet established data quality objectives and are acceptable for use in site characterizations, risk assessments, and evaluation of corrective measures.

- Cancer risk estimates developed for receptors exposed to chemicals of potential concern (COPCs) in surface soils and subsurface soils are less than the U.S. Environmental Protection Agency (USEPA) target risk range of 10^{-4} to 10^{-6} for all sites.

- Chromium and lead appear to be present in the surface soil at several of the sites in concentrations posing potential risk to terrestrial receptors. However, each of the six sites is limited in the quantity and quality of habitat since the sites are characterized by concrete, asphalt, buildings, mowed turfgrass, and heavy human activity. Most importantly, the sites comprise only a small portion of the home ranges of most of the terrestrial wildlife species found on base. Therefore, reduction in growth, survival, and reproduction of small mammal and bird populations at and near the sites is unlikely. For these reasons, potential risks appear to be acceptable and further ecological study is unwarranted.

- Cancer risk estimates for COPCs in surface soil are greater than the State of Florida risk benchmark of 10^{-6} for all receptors except the construction worker and the site maintenance worker. The primary carcinogenic risk driver at all sites, for all receptors, is arsenic. However, this risk may be due to naturally occurring or anthropogenic background levels of arsenic since there are no documented uses of arsenic at any of the sites. Therefore, the risk calculated due to the presence of arsenic may be overestimated.

- Dieldrin is a carcinogenic risk driver at Site 4 for the resident. Dieldrin has not been associated with any past operations at the site and may reflect historical pesticide applications, such as fire ant control. At Site 6, carcinogenic risk for the resident is driven by benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and Aroclor-1260, in addition to arsenic. Benzo(a)pyrene and arsenic are the risk drivers for the occupational worker at Site 6.

- HIs for COPCs in surface soil and subsurface soil are less than the USEPA and State of Florida target benchmark of less than 1.0 for older child trespasser, the adult trespasser, the occupational worker, the site maintenance worker, the construction worker, and the adult resident. Additionally, the child resident at Site 4 has a noncarcinogenic risk of less than 1.0. No adverse health effects would be expected to occur to these receptors from exposure to surface and subsurface soils.

- HIs are only marginally more than unity (1.0) for the child resident at Sites 3 (HI = 1.0), 6 (HI = 1.1), and 30 (HI = 1.3). *HIs developed on a target organ specific basis are less than unity.* This indicates adverse noncarcinogenic effects would not be expected to occur from exposure to surface soils for the child resident.

- TPH is an HI driver at Sites 6 and 30 for the child resident. The HIs at Sites 6 and 30 (1.7 and 1.3, respectively) are greater than unity (1.0). For all other receptors and sites where TPH is greater than screening criteria, the TPH HI is less than unity. However, due to the uncertainty associated with the TPH reference dose, the HI is likely to be overestimated.

- Iron is an HI driver at Site 30 for the child resident receptor. The iron HI for the child resident receptor at Site 30 (1.1) is greater than unity (1.0). For all other receptors and sites where iron is more than screening criteria, the iron HI is less than unity. However, due to the uncertainty associated with the TPH reference dose, the HI is likely to be overestimated.

Hypothetical Future Conditions Assuming Concrete Removal at Sites 30, 32, and 33

Although it is unlikely the concrete will be removed from Sites 30, 32, and 33 in the future, exposure to surface soils under this scenario was evaluated for those soils independently. The following conclusions were drawn based on this scenario.

- Cancer risk estimates developed for receptors exposed to COPCs in surface soils at Site 30 are not greater than the USEPA target risk range of 10^{-4} to 10^{-6}.

- Cancer risk estimates developed for the trespasser (older child/adult), the occupational worker, and the on-site resident exposed to COPCs in surface soils at Site 30 are greater than the State of Florida risk benchmark of 10^{-6}. HIs for Site 30 receptors are all less than 1.0, except for the on-site child resident. The on-site child resident HI was 1.4. HIs developed on a target organ specific basis are less than unity.

- Cancer risk estimates developed for the adult trespasser, occupational worker, and on-site resident exposed to COPCs in surface soils are greater than the State of Florida risk benchmark of 10^{-6}. HIs for all Site 32 receptors were less than 1.0.

- The cancer risk estimates developed for all Site 33 receptors, except for the construction worker, are greater than the State of Florida benchmark of 10^{-6}. HIs for Site 33 receptors were all less than 1.0, except for the on-site child resident. The on-site child resident HI was 1.27. However, HIs calculated on a target organ specific basis for the on-site child resident are less than unity. Consequently, adverse noncarcinogenic health effects are not anticipated under the conditions established in the exposure assessment.

- Arsenic is the carcinogenic risk driver for Sites 30, 32, and 33. However, this risk may be due to naturally occurring or anthropogenic background levels of arsenic since there are no documented uses of arsenic at any of the sites. Therefore, the risk calculated due to the presence of arsenic may be overestimated.

- TPH is an HI risk driver for the child resident at Sites 30, 32, and 33 and for the adult resident at Site 32. The HI for the child receptor was 4.7 at Site 30, 6.0 at Site 32, and 1.1 at Site 33. The HI for the adult resident was 1.1 at Site 32. For all other receptors at Sites 30, 32, and 33, the TPH HI is less than unity. However, due to the uncertainty associated with the TPH reference dose, the HI is likely to be overestimated.

- Iron is an HI driver at Site 30 for the child resident receptor. The iron risk for the child resident receptor at Site 30 (1.9) is more than unity (1.0). For all other receptors and sites where iron is more than screening criteria, the iron HI is less than unity. Iron risks are highly uncertain due to the uncertainty associated with the iron reference dose.

Based on the findings of the baseline human health and screening level ecological risk assessments performed for each of the sites, preparation of an FS is required for each of the sites investigated.

1.0 INTRODUCTION

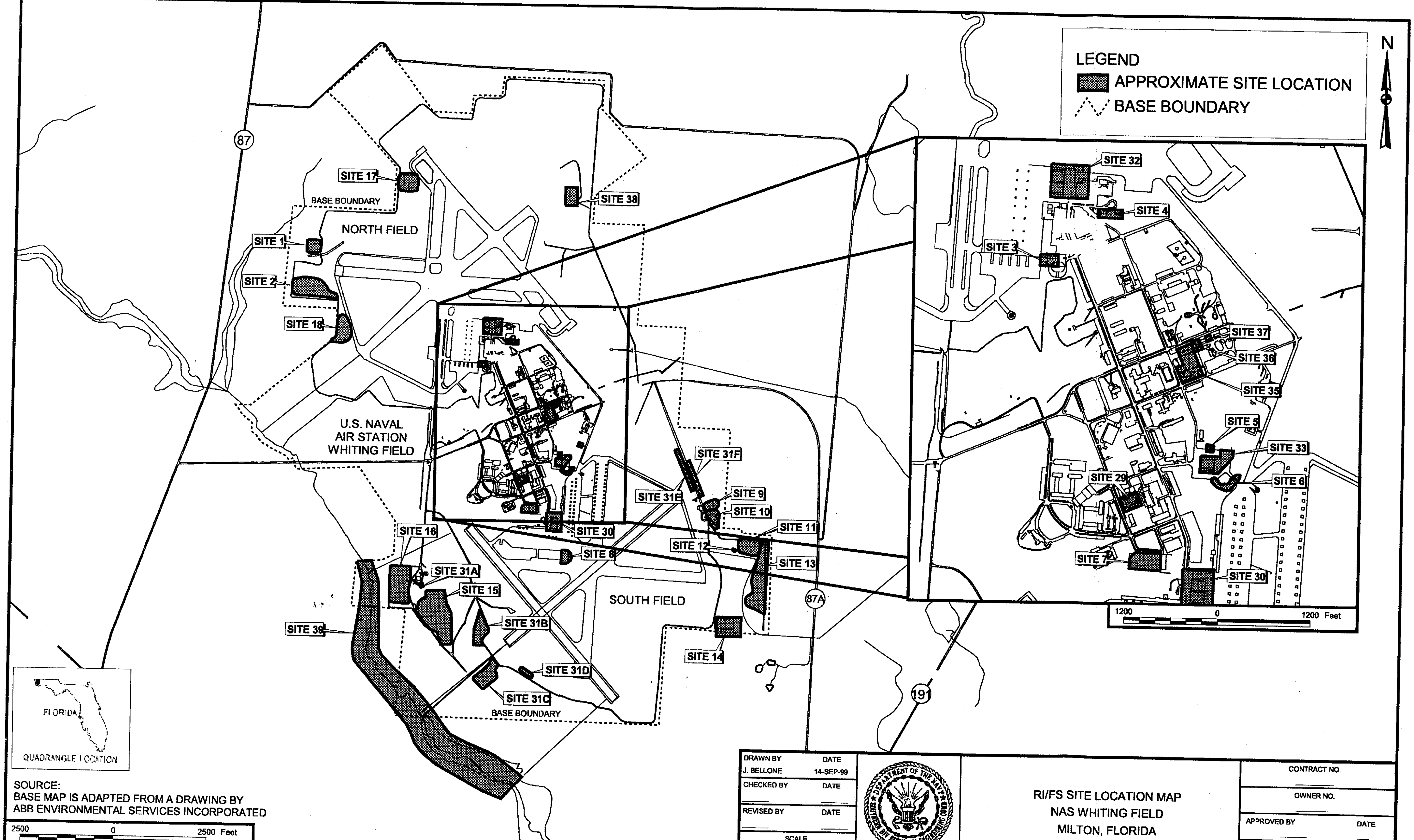
Tetra Tech NUS, Inc., under contract to the Department of Navy, Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) is submitting this Remedial Investigation (RI) Report for Surface and Subsurface Soils at Sites 3, 4, 6, 30, 32, and 33, at Naval Air Station (NAS) Whiting Field located in Milton, Florida. Assessment of the groundwater at these sites is being performed as part of the ongoing Site 40, Basewide Groundwater investigation. The RI Report for these sites is one in a series of site-specific reports being completed in conjunction with the NAS Whiting Field General Information Report (GIR) (ABB-ES, 1998) to summarize the previous investigations and to present the results of the RI.

The RI and Feasibility Study (RI/FS) is being conducted on behalf of the Navy at NAS Whiting Field under contract No. N62467-94-D-0888. The RI was conducted in four phases. The Phase I RI field program was completed in May 1992. The Phase II-A RI field program was conducted between May 1992 and March 1994. The Phase II-B RI field program was completed in November 1996. The Phase II-C RI field program was completed in May 1998.

1.1 FACILITY BACKGROUND

NAS Whiting Field is located in Santa Rosa County, in Florida's northwest coastal area, approximately 5.5 miles north of Milton and 25 miles northeast of Pensacola. Mobile, Alabama, is approximately 70 miles west of the air station, and Tallahassee, the capital of Florida, is 174 miles to the east. The installation was constructed in the early 1940s and has served as a naval aviation training facility since then. NAS Whiting Field presently consists of two air fields (North and South Fields) separated by an industrial area. The installation is approximately 3,842 acres in size. NAS Whiting Field provides the support facilities for flight and academic training. Figure 1-1 presents the installation layout and locations of RI/FS sites at NAS Whiting Field. A summary of the Installation Restoration (IR) sites and a complete description of historic operations at the facility are presented in Table 1-1 and Appendix A of the NAS Whiting Field GIR (ABB-ES, 1998), respectively. A historic record of the underground storage tanks (USTs) installed at Sites 3, 4, 6, 30, 32, and 33 is presented in Table 1-2.

Land surrounding NAS Whiting Field consists primarily of agricultural land to the northwest, residential and forested area to the south and southwest, and forests along the remaining boundaries. Located on an upland area, elevations at Whiting Field range from 50 to 190 feet above sea level. The facility is bounded by low-lying receiving water: Clear Creek to the west and south and Big Coldwater Creek to the east. These two streams are tributaries of the Blackwater River which discharges to the estuarine waters of the East Bay



DRAWN BY	DATE
J. BELLONE	14-SEP-99
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REVISED BY	DATE
SCALE AS NOTED	

RI/FS SITE LOCATION MAP
NAS WHITING FIELD
MILTON, FLORIDA

CONTRACT NO.	
OWNER NO.	
APPROVED BY	DATE
DRAWING NO. FIGURE 1-1	REV. 0

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TABLE 1-1
SUMMARY OF INSTALLATION RESTORATION SITES
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 3

Site No.	Site Name and Type	Location	Period of Operation	Types of Material Disposed of	Comments
1	Northwest Disposal Area (landfill)	North Field, west side	1943–1965	Refuse, waste paints, thinners, solvents, waste oils, and hydraulic fluids.	Secondary disposal area during this period; site covers 5 acres.
2	Northwest Open Disposal Area (landfill)	North Field, west side	1976–1984	Construction and demolition debris, tires, and furniture.	Former borrow pit location, commonly referred to as the "Wood Dump."
3	Underground Waste Solvent Storage Area (tank)	North Field, south of Building 2941	1980–1984	Waste solvents, paint stripping residue, and 120-gallon spill.	Wastes generated by paint stripping operations.
4	North AVGAS Tank Sludge Disposal Area	North Field, north of Tow Lane	1943–1968	Tank-bottom sludge containing tetraethyl lead.	Sludge disposal in shallow holes near tanks.
5	Battery Acid Seepage Pit (contaminated soil)	South Field, southwest of Building 1454	1964–1984	Waste electrolyte solution containing heavy metals and waste battery acid.	Pits located 110 feet from potable supply well (W-S2).
6	South Transformer Oil Disposal Area (contaminated soil)	Midfield, southeast of Building 1454	1940s–1960s	PCB-contaminated dielectric fluid.	Disposal in drainage ditch.
7	South AVGAS Tank Sludge Disposal Area (landfill and tanks)	South Field, west of Building 1406	1943–1968	Tank-bottom sludge containing tetraethyl lead.	Sludge disposed of in shallow holes near tanks.
8	AVGAS Fuel Spill Area (contaminated soil)	South Field, south of Building 1406	Summer 1972	AVGAS containing tetraethyl lead.	Fuel spill of about 25,000 gallons on an area of about 2 acres.
9	Waste Fuel Disposal Pit (landfill)	South Field, east side	1950s–1960s	Waste AVGAS containing tetraethyl lead.	Fuel disposed of in former borrow pit.
10	Southeast Open Disposal Area (A) (landfill)	South Field, southeast area	1965–1975	Construction and demolition debris, waste solvents, paint, oils, hydraulic fluid, PCBs, pesticides, and herbicides.	Secondary disposal area during this period; site covers about 4 acres.
11	Southeast Open Disposal Area (B) (landfill)	South Field, southeast area	1943–1970	Construction and demolition debris, waste solvents, paint, oils, hydraulic fluid, and PCBs.	Secondary disposal area during this period; site covers about 3 acres.
12	Tetraethyl Lead Disposal Area (waste pile)	South Field, southeast area	May 1, 1968	Tank-bottom sludge and fuel filters contaminated with tetraethyl lead.	Disposal area posted with warning; site consists of two earth-covered mounds; 25-foot by 25-foot area.
13	Sanitary Landfill (landfill)	South Field, southeast area	1979–1984	Refuse, waste solvents, paint, hydraulic fluids, and asbestos.	Primary sanitary landfill that potentially received hazardous wastes the first year of operation.

TABLE 1-1
SUMMARY OF INSTALLATION RESTORATION SITES
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 3

Site No.	Site Name and Type	Location	Period of Operation	Types of Material Disposed of	Comments
14	Short-Term Sanitary Landfill (landfill)	South Field, southeast area	1978–1979	Refuse, waste solvents, oils, paint, and hydraulic fluids.	Primary sanitary landfill for brief period; relocated due to drainage problems.
15	Southwest Landfill (landfill)	South Field, southwest area	1965–1979	Refuse, waste paints, oils, solvents, thinners, asbestos, and hydraulic fluid.	Primary landfill for this time period; covers about 15 acres.
16	Open Disposal and Burning Area (landfill)	South Field, southwest area	1943–1965	Refuse, waste paints, oils, solvents, thinners, PCBs, and hydraulic fluid.	Primary disposal area for this time period; covers about 10 acres.
17	Crash Crew Training Area (contaminated soil)	North Field, west side	1951–1991	JP-5 fuel.	Waste fuels and some solvents ignited, then extinguished.
18	Crash Crew Training Area (contaminated soil)	North Field, west side	1951–1991	JP-5 fuel.	Waste fuels and some solvents ignited, then extinguished.
29	Auto Hobby Shop	Area around Building 1404	1943–present	Paint, oils, and solvents.	Abandoned underground waste oil tanks.
30	South Field Maintenance Hangar	Area around Building 1406	1943–present	Fuels, solvents, and oils.	Abandoned underground waste oil tanks.
31	Sludge Drying Beds and Disposal Areas	Wastewater Treatment Plant and along perimeter road	1943–1990	Wastewater Treatment Plant sludge.	Sludge from beds spread on ground along perimeter road.
32	North Field Maintenance Hangar	Area around Building 1424	1943–present	Fuels, solvents, and oils.	Abandoned underground waste oil tanks.
33	Midfield Maintenance Hangar	Area around Building 1454	1943–present	Fuels, solvents, and oils.	Abandoned underground waste oil tanks.
35	Public Works Maintenance Facility, Building 1429	Industrial Area, Building 1429	1943–present	Fuel, soil, solvents.	A service station with a pump island and seven USTs was formerly at this site. The station was used for maintenance of vehicles and equipment. Three USTs were abandoned in 1984.
36	Auto Repair Booth, Building 1440A	Industrial Area, Building 1440A	1943–to early 1980s	Oil, grease, fuel, and solvents.	Site was used as auto repair booth and has a UST located on the east side of the building.

TABLE 1-1
SUMMARY OF INSTALLATION RESTORATION SITES
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 3 OF 3

Site No.	Site Name and Type	Location	Period of Operation	Types of Material Disposed of	Comments
37	Paint Spray Booth, Building 1486	Industrial Area, Building 1486	1943–present	Paint and solvents.	This building contained a furniture shop and paint spray booth. Fumes from the painting operations were captured and combined with water, then discharged to the sanitary sewer.
38	Golf Course Maintenance Building, Building 2877	Northeast Perimeter Road, golf course	Unknown to 1994	Metals, solvents, grease, and pesticides.	Battery reconditioning was conducted in this building until 1979. Pesticides were also stored and mixed in the building until 1983.
39	Clear Creek Floodplain	Southwest Perimeter Road	Unknown	Potential solvents, oil, and fuel.	Storm water has been discharged to the area, and rusted drums were found in the floodplain in 1992.
40	Basewide Groundwater	Basewide		Chemicals potentially migrating to the groundwater include solvents, fuel, and metals.	This site is comprised of all groundwater at NAS Whiting Field. No chemicals were directly discharged to the groundwater. Chemicals have been detected in the basewide groundwater.

Notes: AVGAS – aviation gasoline
JP-5 – jet propellant 5
PCB – polychlorinated biphenyl
UST – underground storage tank

TABLE 1- 2
SUMMARY OF UNDERGROUND STORAGE TANK CONTENTS AND DISPOSITION FOR SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Site No.	Site Name and Type	Site Location	Tank Number and Size	Period of Operation	Contents	Disposition
3	Underground Waste Solvent Storage Area	North Field, south of Building 2941	Two 500-gallon waste solvent tanks. One waste oil tank size unknown	Two 500-gallon waste solvent tanks: 1980 - 1984 One waste oil tank: 1968 - 1986	The two 500-gallon waste solvent tanks: waste solvents and residue generated from paint stripping operations at Building 2941. The one waste oil tank: airframe, power plant, and ground support equipment liquid waste including waste oil, spent hydraulic fluids, and possibly some solvents.	Waste in the two 500-gallon USTs was periodically pumped out for off-base disposal. The tanks were excavated and disposed of off-base in 1984. The one underground waste oil tank was removed in January 1986.
4	North AVGAS Tank Sludge Disposal Area	North Field, north of Tow Lane	1467 - ~25,000-gallon 1467A - ~25,000-gallon 1467B - ~25,000-gallon 1467C - ~25,000-gallon 1467D - ~ 25,000-gallon 1467E - ~ 25,000-gallon 1467F - ~ 25,000-gallon 1467G - ~ 25,000-gallon 1467H - 15,000-gallon 1467I - 750-gallon	1943 -1968	1467 - AVGAS 1467A - AVGAS 1467B - AVGAS 1467C - AVGAS 1467D - AVGAS 1467E - AVGAS 1467F - AVGAS 1467G - AVGAS 1467H - AVGAS 1467I - contaminated jet fuel	1467 - removed in 1992 1467A - removed in 1992 1467B - removed in 1992 1467C - removed in 1992 1467D - removed in 1992 1467E - removed in 1992 1467F - removed in 1994 1467G - removed in 1994 1467H - removed in 1992 1467I - removed in 1994
6	South Transformer Oil Disposal Area (contaminated soil)	Midfield, southeast of Building 1454	AVGAS tank (size not known)	Not known	AVGAS	Former AVGAS tank removed (date not known)
30	South Field Maintenance Hangar	Area around Building 1406	1406F - 846-gallon tank 1406G - 846-gallon tank 1406H - 1,868-gallon tank 1406 I - 1,000-gallon tank	1943 - 1986	1406F- new/used oil/kerosene 1406G-new/used oil/kerosene 1406H- new/used oil/kerosene 1406 I- new/used oil/kerosene	The contents of the tanks were removed from all the USTs and sent for off-base disposal. The USTs were abandoned in place and filled with sand and the aperture filled with concrete in 1986.
32	North Field Maintenance Hangar	Area around Building 1424	1424E - 846-gallon tank 1424F - 1000-gallon tank 1424G - 1,868-gallon tank 1424H - volume not available	1943 - 1986	1424E-used/new oil/kerosene 1424F-used/new oil/kerosene 1424G-used/new oil/kerosene 1424H-used/new oil/kerosene	The contents of the tanks were removed from the USTs for off-base disposal. The USTs were abandoned in place and filled with sand and the aperture filled with concrete in 1986.
33	Midfield Maintenance Hangar	Area around Building 1454	1454A - 846-gallon tank	1943 - 1986	1454A - waste oil, lubricating oil, antifreeze, hydraulic fluid, transmission fluid, and possibly cleaning solvent.	The contents were removed from the UST for off-base disposal. The UST was abandoned in place and filled with sand and the aperture filled with concrete in 1986.

Note: AVGAS - aviation gasoline

of the Escambia Bay coastal system. Both Clear Creek and Big Coldwater Creek are classified by the Florida Department of Environmental Protection (FDEP) as Class II Waters Recreation-Propagation and Management of Fish and Wildlife. Blackwater River is classified as an Outstanding Florida Water. Outstanding Waters are considered to be of exceptional recreational and ecological significance.

1.2 PURPOSE OF THE RI/FS

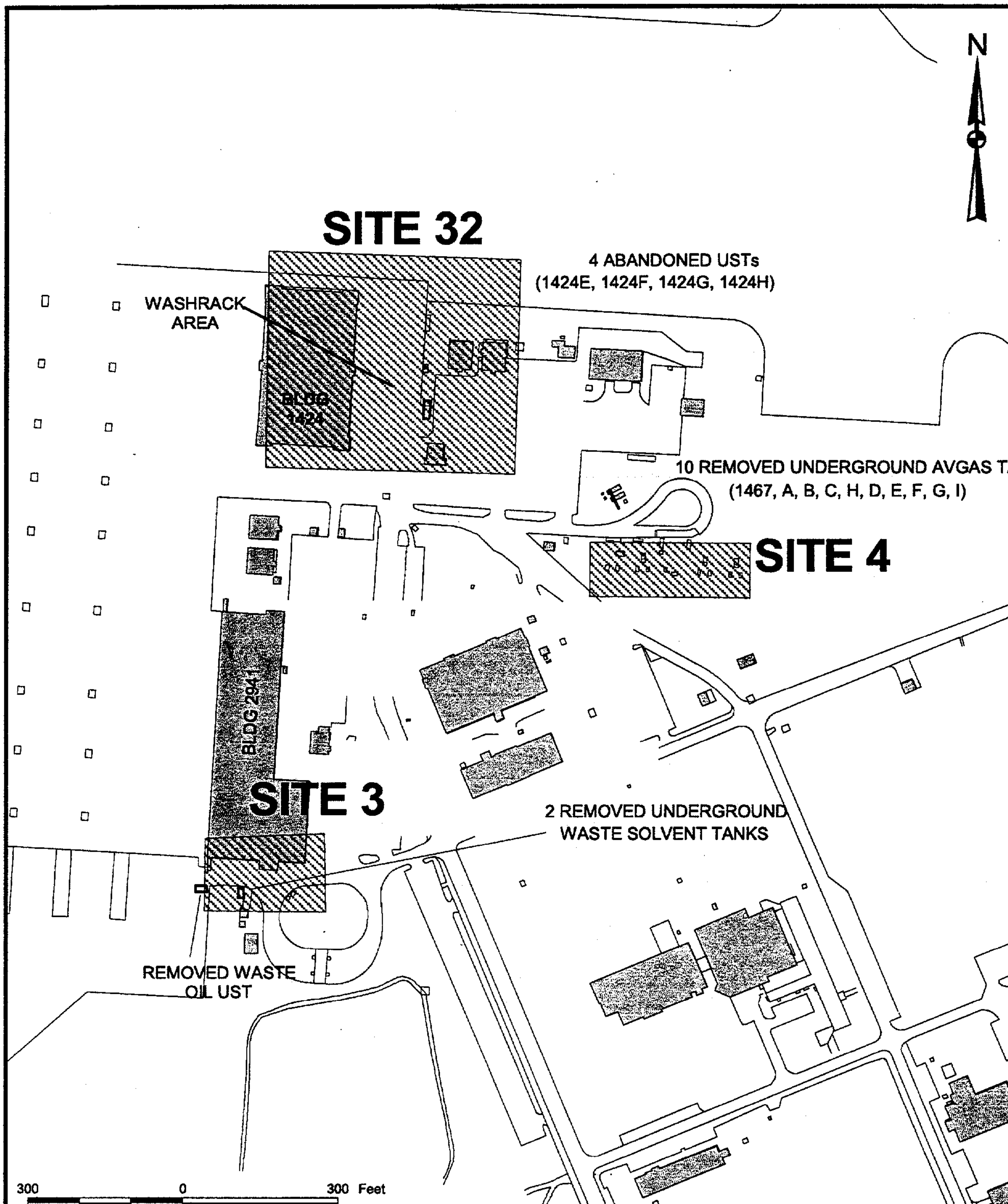
The purpose of the RI is to identify and characterize the nature and extent of chemicals in surface and subsurface soil and to assess the threat(s) to human health and the environment resulting from toxic or hazardous chemicals that might be present at Sites 3, 4, 6, 30, 32, and 33. Assessment of groundwater at these sites will be performed as part of the ongoing Site 40 basewide groundwater investigation. The data collected during the RI field program will also be used in an FS (if necessary) to screen, evaluate, and select remedial alternatives to provide permanent, feasible solutions to environmental impacts resulting from past operational practices or spills at NAS Whiting Field.

1.3 SITE DESCRIPTIONS

1.3.1 Site 3 - Underground Waste Solvent Storage Area

Site 3 is located adjacent to Building 2941 and just north of the Paint Locker, Building 2987 (Figure 1-2). The site includes an area where two 500-gallon underground metal tanks were used from 1980 to April of 1984 for the storage of waste solvents and residue generated from paint-stripping operations conducted at Building 2941. Wastes from the tanks were periodically pumped out for off-base disposal. In April of 1984, use of the underground tanks was discontinued and the two tanks were removed from the site. During excavation operations at the site, one of the tanks was punctured by a backhoe, resulting in the spillage of approximately 120 gallons of waste solvents onto the ground. Cleanup operations conducted at the site resulted in the recovery of approximately 50 gallons of the waste solvent and approximately 6 cubic yards of contaminated soil. This material was removed from the site for disposal. Examination of the tanks revealed holes up to 0.5 inches in diameter apparently caused by the waste solvents corroding through the metal tanks. The volume of leakage from the tanks before their removal is not known.

Site 3 also includes an area where an underground waste oil tank was located near the southwestern corner of Building 2941. The location of the waste oil tank is shown on Figure 1-2. This tank was used for storage of airframe, power plant, and ground support equipment liquid waste from 1968, and possibly earlier, until 1986. This tank was reportedly removed prior to the expansion of the hardstand in 1987.



DRAWN BY D. PERRY	DATE 11-MAY-99			CONTRACT NUMBER	
CHECKED BY	DATE		SITES 3, 4, AND 32 LOCATION MAP NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY	DATE
COST/SCHEDULE-AREA				APPROVED BY	DATE
SCALE AS NOTED				DRAWING NO. FIGURE 1-2	REV 0

1.3.2 Site 4 - North AVGAS Tank Sludge Disposal Area

Site 4 is a former UST facility located north of Tow Lane at North Field (Figure 1-2). The former tank farm, within the fenced North Field restricted area, covers approximately 2.5 acres, and is currently covered with grass.

Site 4 contained eight 23,700-gallon steel tanks, one 15,000-gallon steel tank, and one 750-gallon tank, dating back to 1943 when NAS Whiting Field first began operations. Nine USTs at this site were used for aviation gasoline (AVGAS) storage, and one UST was used for storage of contaminated jet fuel. All USTs and associated piping were removed in the mid-1990s. There are no records of spills or leaks at Site 4, but petroleum contamination was observed when the USTs were removed.

From 1943 to 1968, the nine AVGAS tanks were cleaned out approximately every 4 years. The tank bottom sludge probably containing tetraethyl lead was buried at shallow depths in the area immediately adjacent to the surrounding tanks. Navy personnel estimated 1,000 to 2,000 gallons of sludge were disposed of in this manner (Geraghty & Miller, 1986).

1.3.3 Site 6 - South Transformer Oil Disposal Area

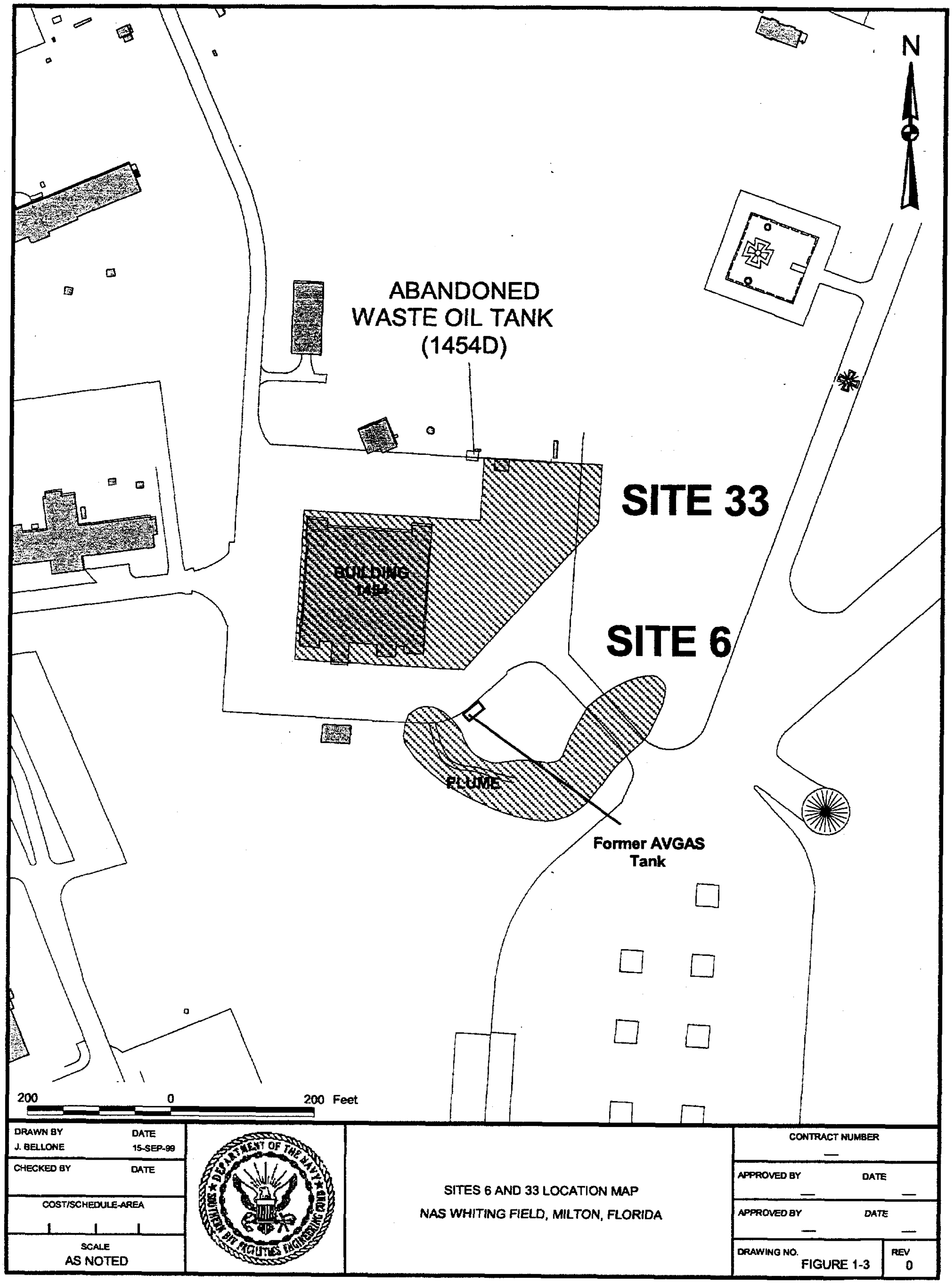
Site 6 is located southeast of the Midfield Maintenance Hangar, Building 1454 (Figure 1-3). At Site 6, from the 1940s until 1964, transformers were reportedly drained into the grassed "0-2" ditch located approximately 500 feet southeast of the former transformer repair shop, Building 1478, and southeast of Building 1454. It is likely the dielectric fluid from the transformers contained polychlorinated biphenyls (PCBs). Runoff from the grassed ditch drains in a northeasterly direction eventually into Big Coldwater Creek, located approximately 2.3 miles east of the disposal site (Geraghty & Miller, 1984).

The former AVGAS storage tank location is adjacent to Site 6. No information regarding the size or removal date of this tank is available.

1.3.4 Site 30 - South Field Maintenance Hangar

Site 30 is located at the South Field Maintenance Hangar, Building 1406 (Figure 1-4). The site includes Building 1406, the wash rack area, and the adjacent abandoned waste oil tanks west of Building 1406.

The South Field Maintenance Hangar was constructed in the mid-1940s to support maintenance service to training aircraft. Activities at this site included engine maintenance, corrosion control, and aircraft cleaning. Maintenance activities generated waste engine oil, cleaning solvents, and paint stripping wastes. Other wastes generated by the maintenance operations included mineral spirits, methyl ethyl ketone (MEK), hydraulic fluid, and all-purpose universal (APU) thinner. The waste oil from fixed-wing and helicopter


N
ABANDONED
WASTE OIL TANK
(1454D)
SITE 33
SITE 6
BUILDING
1454
PLUME
Former AVGAS
Tank
200 0 200 Feet
DRAWN BY
J. BELLONE
DATE
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CHECKED BY
DATE
COST/SCHEDULE-AREA
SCALE
AS NOTED
SITES 6 AND 33 LOCATION MAP
NAS WHITING FIELD, MILTON, FLORIDA
CONTRACT NUMBER
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FIGURE 1-3
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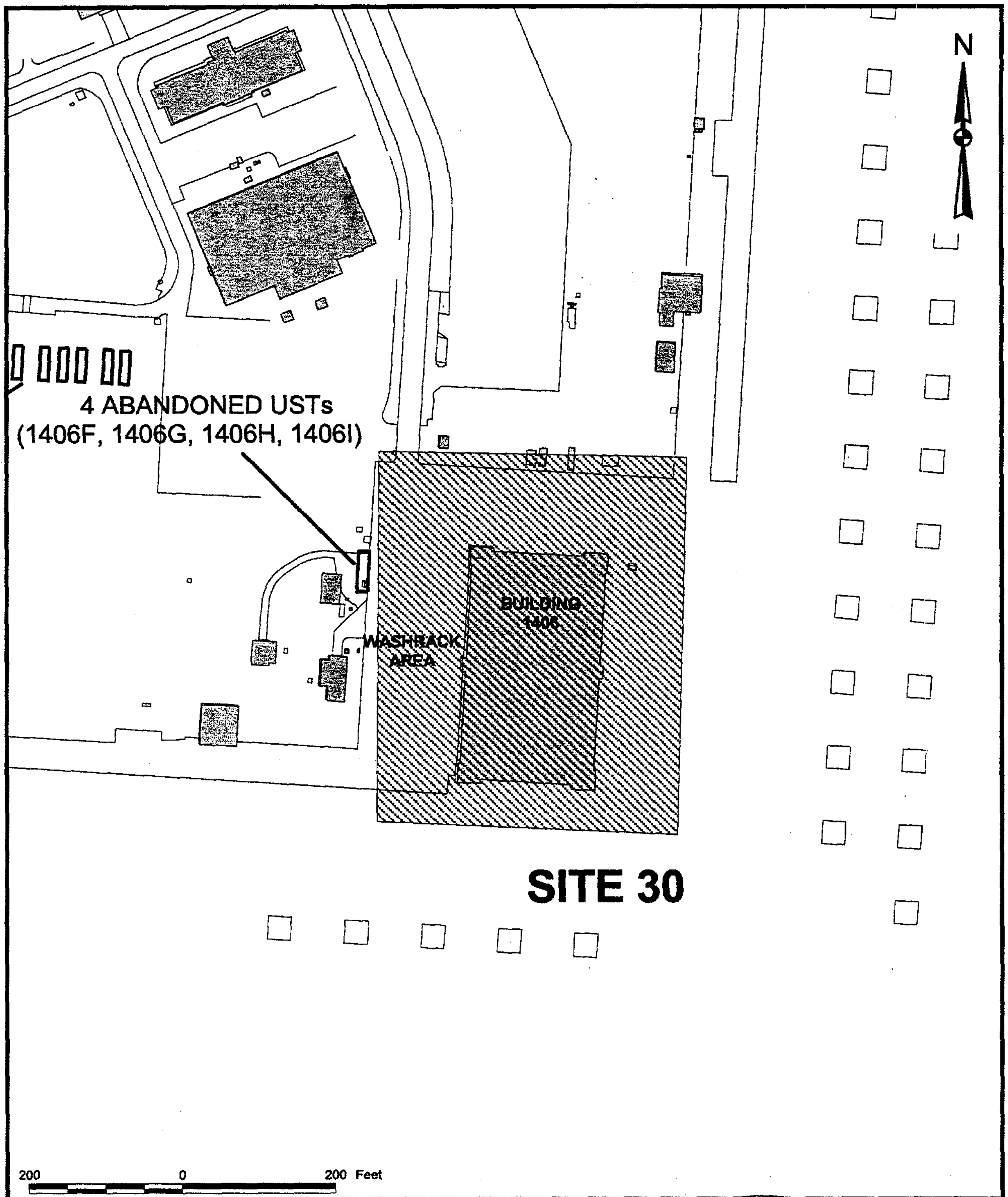


DRAWN BY D. PERRY — DATE 11-MAY-98		SITE 30 LOCATION MAP NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER —
CHECKED BY — DATE			APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 1-4 — REV 0

maintenance was reportedly poured into the underground waste oil tanks located adjacent to the wash rack until the tanks were abandoned in the 1980s. The waste oil was removed from the tanks by a contractor for off-base disposal.

1.3.5 Site 32 - North Field Maintenance Hangar

Site 32 is located at the North Field Maintenance Hangar, Building 1424 (Figure 1-2). The site includes Building 1424, the adjacent wash rack area, and the location of the abandoned waste oil tanks east of Building 1424. The North Field Maintenance Hangar was constructed in the mid-1940s to support maintenance service to training aircraft. Activities at this site included engine maintenance, corrosion control, and aircraft cleaning. These activities generated waste stripping compounds, cleaning solvents, paint wastes, alkaline cleaners, detergents, oil, and hydraulic fluids. Before Aircraft Intermediate Maintenance Department activities began, aircraft maintenance wastes from Hangar 1424 were reportedly sent to base landfills; however, spills and uncontrolled disposal of solvents at or near the sites of generation were common occurrences in the 1940s and 1950s.

Oil changes were routinely performed on the fixed-wing aircraft as part of the normal maintenance activities. The waste oil was reportedly poured into the underground waste oil tanks located adjacent to the wash rack until the tanks were abandoned in the 1980s. The waste oil was removed from the tanks by a contractor for off-base disposal.

Other wastes generated by maintenance activities included mineral spirits, MEK, hydraulic fluids, APU thinner, and paint strippers. Contaminated fuel obtained during the collection of fuel samples was placed in a line shack tank or in 55-gallon drums. The fuel was routinely collected by the fuels contractor and hauled to the Firefighter Training Area for use in fire drills. A summary of the estimated quantities and ultimate disposition of these wastes is presented in the Initial Assessment Study (IAS) (Envirodyne Engineers, 1985).

Fixed-wing aircraft are still washed at the wash rack area located east of Building 1424. Aircraft washing is performed on each aircraft on a 14-day cycle. The aircraft cleaning solution (detergent/soap) is consumed at a rate of about 4,200 gallons/year. Before approximately 1972, the wastewater from this operation was discharged to the storm sewer. Subsequently the wash rack was disconnected from the storm sewer and connected to the sanitary sewer system, allowing the wastewater to be treated at the sewage treatment plant.

1.3.6 Site 33 - Midfield Maintenance Hangar

Site 33 is located at the Midfield Maintenance Hangar, Building 1454 (Figure 1-3). The site includes Building 1454 and the adjacent abandoned waste oil tank north of Building 1454. The Midfield Maintenance Hangar was constructed in the middle 1940s to support maintenance service of assigned aircraft and line maintenance on transient aircraft. Activities at this site included engine maintenance, corrosion control, and aircraft cleaning. Maintenance activities typically generated less than 5 gallons/month of mixed waste paint and stripper, methyl isobutyl ketone (MIBK), MEK, toluene, and naphtha.

Oil changes were routinely performed on aircraft as part of the normal maintenance activities. The waste oil from aircraft maintenance was reportedly poured into bowsers (mobile storage tanks) or the underground waste oil tank located north of Building 1454 until the tank was abandoned in the 1980s. The waste oil was removed from the tank by a contractor for off-base disposal.

In the early 1970s the Ground Support Equipment shop moved from Hangar Building 2941 to the Midfield Maintenance Hangar. The Ground Support Equipment shop was responsible for the maintenance on all ground support equipment (e.g., tow tractors, aircraft jacks, and maintenance stands). The shop routinely generated an estimated 30 gallons of waste PD-680 cleaning solvent per month and about 15 gallons of waste aircraft cleaning compound per month. Other wastes generated included lubricating oil (20 gallons/month), antifreeze (9 gallons/month), hydraulic fluid (25 gallons/month), and transmission fluid (6 gallons/month). All of these wastes were disposed of either in a bowser or in the underground waste oil tank.

1.4 REGULATORY SETTING

The Navy IR program was designed to identify and abate or control contaminant migration resulting from past operations at naval installations, with the goal of expediting and improving environmental response actions while protecting human health and the environment. The IR program is conducted in accordance with Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 and Executive Order 12580. CERCLA requires federal facilities to comply with the act, both procedurally and substantively. SOUTHNAVFACENGCOM is the agency responsible for the Navy IR program in the southeastern United States; therefore, SOUTHNAVFACENGCOM has the responsibility of processing NAS Whiting Field through the Preliminary Assessment, Site Inspection, RI/FS, and remedial response selection in compliance with the guidelines of the National Oil and Hazardous Substances Contingency Plan (NCP) [40 *Code of Federal Regulations* (CFR) 300].

Section 105(a)(8)(A) of SARA required the U. S. Environmental Protection Agency (USEPA) to develop criteria to set priorities for remedial action based on relative risk to public health and the environment. To meet this requirement, USEPA has established the Hazard Ranking System (HRS) as Appendix A to the NCP. First promulgated in 1982, the HRS was amended in December 1990, effective March 14, 1991 [55 *Federal Register* (FR) No. 241:51532-51667], to comply with requirements of Section 105(c)(1) of SARA to increase the accuracy of the assessment of relative risk.

The HRS score for NAS Whiting Field was generated in 1993. The score was sufficient to place NAS Whiting Field on the National Priorities List (NPL); therefore, in January 1994, USEPA placed NAS Whiting Field on a list of sites proposed for inclusion on the NPL (40 CFR 300; FR 18 January 1994), and on May 31, 1994, NAS Whiting Field was placed on the NPL effective June 30, 1994 (40 CFR 300; FR 31 May 1994). As a result, the RI/FS for NAS Whiting Field must follow the requirements of the NCP, as amended by SARA, and guidance for conducting an RI/FS under CERCLA (USEPA, 1988).

Per CERCLA Section 121(d), the Navy will follow all applicable or relevant and appropriate requirements (ARARs) of the State of Florida for all IR program activities at NAS Whiting Field.

1.5 REPORT ORGANIZATION

The RI Report is organized into ten chapters (Chapters 1.0 to 10.0). Chapter 1.0 presents the purpose, site description, and regulatory setting for the RI at NAS Whiting Field. Chapter 2.0 summarizes previous investigations. Chapter 3.0 presents the investigative methodology for conducting the assessment. Chapter 4.0 presents the site-specific data quality assessment. Chapter 5.0 discusses the investigative results of the assessment. Chapter 6.0 presents the Human Health Risk Assessment (HHRA), and Chapter 7.0 presents the Ecological Risk Assessment (ERA). Chapter 8.0 discusses the fate and transport of chemicals determined to be human and/or ecological chemicals of potential concern (COPCs). Chapter 9.0 provides a summary of the conclusions and recommendations. Chapter 10.0 presents the professional review certification.

The RI Report also includes six Appendices (A-F). Appendix A provides soil boring logs for the sites in this report. Appendix B contains quality control data, and Appendix C contains surface and subsurface soil analytical data. Appendix D, which has nine subparts, includes human health risk data. Appendix E provides a table summarizing soil leachability screening exceedences. Appendix F includes USEPA and FDEP comments and responses on the draft RI Report.

2.0 PREVIOUS INVESTIGATIONS

This chapter and Table 2-1 summarize previous investigations applicable to Sites 3, 4, 6, 30, 32, and 33 at NAS Whiting Field. Previous investigations include an IAS; a Verification Study; a UST Investigation; and RI/FS Phases I, II-A, and II-B completed in response to CERCLA requirements.

2.1 INITIAL ASSESSMENT STUDY, 1985

Historical records were reviewed during the IAS (Envirodyne Engineers, Inc., 1985) by conducting a record search. The record search indicated that throughout its years of operation, NAS Whiting Field generated a variety of wastes related to pilot training, the operation and maintenance of aircraft and ground support equipment, and the facility maintenance programs.

Interviews with facility personnel and reviews of the records indicated that before the 1970s and the establishment of hazardous waste programs, most of the hazardous waste was disposed of at various locations on-site. Waste materials were disposed of either in dumpsters emptied into on-site disposal areas or in waste oil bowsers presumably used for crash crew training. Envirodyne Engineers, Inc. (1985) estimated thousands of gallons of wastes including waste paints, paint thinners, solvents, waste oils, waste gasoline, hydraulic fluids, AVGAS, tank-bottom sludges, PCB transformer fluids, and paint stripping wastewater were potentially dumped into on-site disposal areas. These disposal areas consisted of natural or man-made depressions located within the confines of the air station. Additional materials were reportedly released on-site as the result of accidents or equipment failure.

Based on a review of historical data, aerial photographs, field inspections, and interviews with facility personnel, 16 potentially contaminated disposal or spill sites, and/or sources for contaminant migration, were initially identified at NAS Whiting Field by the IAS team (Envirodyne Engineers, Inc., 1985).

The IAS Report (Envirodyne Engineers, Inc., 1985) concluded 15 of 16 sites warranted further investigation under the Navy's IR program to assess potential long-term impacts. Only Site 2, the Northwest Open Disposal Area, was determined not to warrant further consideration.

To evaluate the 15 sites requiring further investigation, the IAS recommended a Confirmation Study (Verification) including sampling and monitoring of the sites to confirm the presence or absence of suspected contamination and to further quantify the extent of any problems.

TABLE 2-1

SUMMARY OF SITE INVESTIGATIONS FOR SITES 3, 4, 6, 30, 32, AND 33 NAS WHITING FIELD, MILTON, FLORIDA

Site Number	Site Name	Previous Studies			RI/FS Phase I	Navy's UST Program	RI/FS Phase II-A	RI/FS Phase II-B
		IAS	Verification Study	Consent Order				
1	Northwest Disposal Area	*	*		*		*	
2	Northwest Open Disposal Area	*			*		*	
3	Underground Waste Solvent Storage Area	*	*		*		*	
4	North AVGAS Tank Sludge Disposal Area	*	*			*		
5	Battery Acid Seepage Pit	*		*			*	
6	South Transformer Oil Disposal Area	*	*		*		*	
7	South AVGAS Tank Sludge Disposal Area	*	*			*		
8	AVGAS Fuel Spill Area	*	*			*		
9	Waste Fuel Disposal Pit	*	*		*		*	
10	Southeast Open Disposal Area (A)	*	*		*		*	
11	Southeast Open Disposal Area (B)	*	*		*		*	
12	Tetraethyl Lead Disposal Area	*	*		*		*	
13	Sanitary Landfill	*	*		*		*	
14	Short-Term Sanitary Landfill	*	*		*		*	
15	Southwest Landfill	*	*		*		*	
16	Open Disposal and Burning Area	*	*		*		*	
17	Crash Crew Training Area		*		*		*	
18	Crash Crew Training Area		*		*		*	
29	Auto Hobby Shop						*	
30	South Field Maintenance Hangar Area						*	*
31	Sludge Drying Beds and Disposal Areas						*	
32	North Field Maintenance Hangar Area						*	
33	Midfield Maintenance Hangar Area						*	*
35	Public Works Maintenance Facility, Building 1429							*
36	Auto Repair Booth, Building 1440A							*
37	Paint Spray Booth, Building 1486							*
38	Golf Course Maintenance Building, Building 2877							*
39	Clear Creek Floodplain							*
40	Basewide Groundwater							*

Notes: Sites 19 through 28 are located at Outlying Landing Field Barin and are being addressed under a separate investigation.

AVGAS – aviation gasoline
IAS – Initial Assessment Study
RI/FS – Remedial Investigation and Feasibility Study
UST – underground storage tank

Relevant to the sites addressed in this report, the following recommendations were made in the IAS:

Site 3 For Site 3, the IAS recommended the installation of two groundwater monitoring wells, one east of the site between the site and the north potable supply well (W-N4) and one west of the site. Installation of these wells was recommended to detect possible contaminant migration toward the supply well. Additionally, it was recommended that representative soil samples be collected at the site in the area of the underground tank locations (Figure 1-2) to determine if solvent contamination was still present.

Site 4 For Site 4, the IAS recommended soil sampling designed to detect the presence of tetraethyl lead contaminants in the soil around the tanks (Figure 1-2).

Site 6 For Site 6, the IAS recommended soil sampling of the grassed "0-2" ditch southeast of Building 1478 and east of Building 1454 (Figure 1-3) to determine if PCB contamination was present.

2.2 VERIFICATION STUDY, 1985-1986

The results of the Verification Study (Geraghty & Miller, 1986) provided an assessment of the physical and chemical conditions at NAS Whiting Field. A brief description of the site assessments performed for Sites 3, 4, and 6 during the Verification Study is presented below.

Site 3 At Site 3, a soil boring was drilled and split-spoon core samples were collected at 5-foot intervals to a total depth of 25 feet. The only organic analytes detected in the soil samples were phenols at the surface, attributed to vegetative matter in the soil. Of nine metals analyzed for, zinc, chromium, silver, cadmium, and mercury were detected. Zinc, chromium, and cadmium decreased to nondetectable levels with depth; silver and mercury were detected to 25 feet depth.

Also during the Verification Study at Site 3, two monitoring wells (WHF-3-1 and WHF-3-2) were installed near the USTs in the intermediate water-bearing zone of the upper sand and gravel aquifer at a depth of approximately 153 feet below ground surface (bgs). Groundwater samples were analyzed for priority pollutants. Except for trace concentrations of arsenic and lead, no priority pollutants were detected in the groundwater from WHF-3-2. Three volatile organic compounds (VOCs) [1,1,1-trichloroethane (TCA) at 13 μg/L; 1,1,2-TCA at 111 μg/L; and trichloroethene (TCE) at 18 μg/L] were detected at concentrations exceeding federal and Florida maximum containment levels (MCLs) at WHF-3-1.

Site 4 At Site 4, 28 surface soil samples were collected and mixed to produce one composite sample during the 1986 Verification Study. This sample was split into two parts and each was analyzed for total lead content and Extraction Procedure Toxicity (EP Tox) for lead. Laboratory analytical results of the soil samples showed total lead concentrations were 15 and 27 mg/kg. Lead was not detected in the EP Tox test leachate above the method detection limit of 0.01 mg/L.

Monitoring well WHF-4-1 was installed along the southern perimeter of the USTs during the 1986 study. This well was installed in the intermediate zone of the upper sand-and-gravel aquifer at a depth of 152 feet bgs. One groundwater sample was collected from this well and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene, ethylene dibromide (EDB), and lead. Benzene (17 μg/L) and toluene (10 μg/L) were detected in the water samples. Trace concentrations of lead below FDEP's drinking water standard were also detected.

Site 6 At Site 6, ten composite soil samples consisting of sandy clay were collected along the flanks of the paved ditch at the site during the 1986 Verification Study. Samples were collected from the surface to a depth of 2 feet and analyzed for PCBs. Results did not detect any PCBs above the detection limit of 0.2 mg/kg.

2.3 PHASE I REMEDIAL INVESTIGATION, 1990-1992

In December 1990, ABB-ES, under contract to the Department of the Navy, SOUTHNAVFACENGCOM, initiated a Phase I RI at NAS Whiting Field. The objective of the Phase I RI was to characterize the nature and extent of contamination at sites identified during the IAS.

The Phase I RI addressed 12 of the 16 sites described in the IAS. Two additional sites, 17 and 18, identified during the Verification Study, were also included in the Phase I RI. Sites 4, 7, and 8 (referred to as UST Sites 1467, 1466, and 3054, respectively) were investigated under the Navy's UST program and, therefore, were not incorporated into the Phase I RI. Also, Site 5 was not included in the Phase I RI. The presence of benzene in samples from the existing monitoring wells surrounding the seepage pit at Site 5, however, warranted further consideration in the Phase II investigation of nearby Site 33.

Site 3 At Site 3, monitoring well WHF-3-3 was installed in the intermediate zone of the aquifer at a depth of approximately 154 feet bgs. Bengt-Arne-Torstensson (BAT) groundwater samples were also collected at Site 3 during this phase of the investigation using a cone penetrometer rig. Analysis of groundwater samples revealed VOC contamination in the shallow and intermediate zones of the aquifer.

Site 6 At Site 6, 12 surface soil samples, as described in *Technical Memorandum No. 3, Soil Assessment, NAS Whiting Field, Milton, Florida* (ABB-ES, 1992d) were collected and analyzed for PCBs. Analytical results revealed extremely low concentrations of PCBs ranging from 6.9 to 33 μg/kg. However, additional soil sampling deeper in the soil column and further down-ditch was recommended to completely define the extent of PCB contamination.

2.4 UNDERGROUND STORAGE TANK INVESTIGATIONS, 1991–1994

Site 4 (also referred to as UST Site 1467) was investigated under the Navy's UST program and, therefore, was not incorporated into the Navy's IR program. During a Project Managers' meeting at Whiting Field on July 7, 1992, an agreement was reached between the Navy, USEPA, and FDEP to sample monitoring wells at Site 4 for full-scan target compound list (TCL) and target analyte list (TAL) analytes. Based on the results of these analyses, a decision was to be made regarding whether Site 4 should remain in the Navy's UST program or be transferred into the Navy's IR program. The UST fieldwork was completed between August 16 and 30, 1993, and included the collection of groundwater samples from 11 monitoring wells at Site 4 (UST Site 1467).

The results of the UST program investigation were reported in the *Jurisdiction Assessment Report* (ABB-ES, 1994a). The report concluded the BTEX and TCE plumes at Sites 4 and 7 are commingled and petroleum contaminants could not be remediated without design considerations for TCE contamination. Based on these findings, sites 4 and 7 were returned to the IR program.

2.5 PHASE I AND PHASE II REMEDIAL INVESTIGATION, 1992-PRESENT

Phase II of the RI/FS, as outlined in the NAS Whiting Field Work Plan (E.C. Jordan, 1990), was to consist of the following elements:

- Potential receptors survey
- Plume delineation
- Production well investigation
- Source area characterization

Phase II of the RI/FS was comprised of two parts: A and B. The Phase II-A RI/FS was an extension of the investigation begun in Phase I. The objective of Phase II-A was to perform the additional investigation and site characterization required to determine the nature and extent of contamination at NAS Whiting Field and to support a baseline risk assessment and FS. Five additional sites (Sites 29-33) were identified during the Phase I RI and subsequently added to the Phase II-A RI program for investigation. A total of 20 sites were investigated in Phase II-A (Table 2-1). Phase II-A was also designed to confirm no release had occurred or is likely to occur at Sites 1, 9, 10, 11, 13, and 14; previous investigations already indicated environmental contamination had occurred at the remaining sites included in Phase II-A. At the end of Phase II-A, another set of technical memoranda was prepared to present the results of the field investigation. Identified data gaps were to be addressed during Phase II-B of the RI/FS.

Site 3 Phase II-A RI/FS activities conducted by ABB Environmental Services, Inc. (ABB-ES) at Site 3 included a soil gas survey, soil borings, subsurface soil sampling, monitoring well installation, and groundwater sampling.

Results of the soil gas survey conducted in locations considered to be potential source areas indicated the following groups of target organic compounds: BTEX, tetrachloroethene (PCE), cycloalkanes, and naphthalenes. Details of the soil gas investigation are presented in the *Soil Gas Survey Technical Report* (ABB-ES, 1993b).

Ten soil borings (3SB01 through 3SB10) were drilled, and 33 subsurface soil samples were collected around Building 2941 during Phase II-A. Three VOCs, 10 semivolatile organic compounds (SVOCs), 7 pesticide compounds, and total petroleum hydrocarbons (TPH) were detected in the subsurface soil samples. TPH were present in 4 of the 10 soil borings at depths less than 7 feet bgs. The maximum TPH concentration of 27.8 mg/kg was observed at 3SB02 at a depth of 1–2 feet. Twenty-three inorganic analytes were detected in subsurface soil samples. Concentrations of organic and inorganic analytes in soil are presented in *Technical Memorandum No. 3, Soil Assessment* (ABB-ES, 1995e).

Site 6 At the completion of the Phase I RI field investigation, recommendations for additional sampling in Phase II-A were identified. Phase II-A activities at Site 6 included a soil gas survey, soil borings, subsurface soil sampling, monitoring well installation, and groundwater sampling.

Soil gas sampling at Site 6 was done in conjunction with soil gas sampling at Sites 5 and 33, with the focus being on Site 33 because of the nature of the associated wastes (i. e., solvents and fuels). Soil gas screening indicated a hot spot at Site 6 with ion counts over 100,000 for cycloalkanes/naphthalenes. Details of the soil gas investigation are presented in *Soil Gas Survey Technical Report* (ABB-ES, 1993b).

Four soil borings (6SB-1 through 6SB-4) were drilled and 17 subsurface soil samples were collected during Phase II-A. Four VOCs, 19 SVOCs, 3 pesticides, 1 PCB, and TPH were detected in the subsurface soil samples from Phase II-A (ABB-ES, 1995e). Twenty-one inorganic analytes were detected in subsurface soil samples. Concentrations of organic and inorganic analytes detected in soil are presented in *Technical Memorandum No. 3, Soil Assessment* (ABB-ES, 1995e).

<u>Site 30</u> At the completion of the Phase I RI field investigation, Site 30 was added to the Phase II-A RI program for contamination assessment. Phase II-A activities at Site 30 included a soil gas survey, soil borings and subsurface soil sampling, monitoring well installation, and groundwater sampling.

Fifty-six soil gas samplers were placed on approximately 80-foot centers surrounding Building 1406. Soil gas screening indicated several hot spots with ion counts over 100,000 for BTEX, PCE, TCE, and cycloalkanes/naphthalenes. Details of the soil gas investigation are presented in *Soil Gas Survey Technical Report* (ABB-ES, 1993b).

Seven soil borings (30SB01 through 30SB07) were drilled, and 23 subsurface soil samples were collected during Phase II-A. The soil borings were drilled in soil gas hot spot areas around the abandoned waste oil tanks, Building 1406, and the helicopter wash rack area. Three VOCs, 12 SVOCs, 2 pesticides, and TPH were detected in the subsurface soil samples from Phase II-A. Concentrations of organic and inorganic analytes detected in soil are presented in *Technical Memorandum No. 3, Soil Assessment* (ABB-ES, 1995e).

In 1994, nine soil borings were drilled and soil samples were collected by ABB-ES at the wash rack area as part of a contamination assessment of shallow soils for construction activities. Results of the investigation were presented in a letter report (ABB-ES, 1994b). Five VOCs were detected in the soil samples collected for field gas chromatograph (GC) screening. Six VOCs and one SVOC were detected in the soil samples collected for fixed-base analysis.

Six additional soil borings (30B001 through 30B006) were drilled at the abandoned waste oil tanks and wash rack locations in May 1996 during Phase II-B. Eight VOCs, 7 SVOCs, and lead were detected in 23 subsurface soil samples (including 4 duplicates) collected from these borings.

Four shallow monitoring wells were installed and sampled during Phase II-A. Three VOCs (1,1-dichloroethene; TCE; and benzene) were detected at concentrations exceeding federal and Florida MCLs (ABB-ES, 1995e). No SVOCs, pesticides, or PCBs were detected in the groundwater samples at Site 30; however, six inorganic analytes were detected at concentrations exceeding federal and Florida MCLs. Concentrations of organic and inorganic analytes at Site 30 are presented in the RI/FS Phase II-C Work Plan for Sites 3, 4, 30, 32, and 33 (Brown & Root Environmental, 1997b).

Site 32 At the completion of the Phase I RI field investigation, Site 32 was added to the Phase II-A RI program for contamination assessment. Phase II-A activities at Site 32 included a soil gas survey, soil borings and subsurface soil sampling, monitoring well installation, and groundwater sampling.

Soil gas samplers were placed on approximately 80-foot centers surrounding Building 1424. Soil gas screening indicated several hot spots with ion counts over 100,000 for BTEX, PCE, TCE, and cycloalkanes/naphthalenes. Details of the soil gas investigation are presented in *Soil Gas Survey Technical Report* (ABB-ES, 1993b).

Eight soil borings (32SB01 through 32SB08) were drilled in January 1993 during Phase II-A. The soil borings were drilled in soil gas hot spot areas around the abandoned waste oil tanks, Building 1424, and the wash rack area. Three additional soil borings (WRSB01 through WRSBB03) were drilled at the abandoned waste oil tanks and wash rack locations in August 1993 during Phase II-A. Fifty-three subsurface soil samples were collected during Phase II-A. Six VOCs, 13 SVOCs, 2 pesticides, 1 PCB, and TPH were detected in the subsurface soil samples. Twenty-three inorganic analytes were detected in the subsurface soil samples. Detected concentrations of organic and inorganic analytes from borings 32SB01 through 32SB08 are presented in *Technical Memorandum No. 3, Soil Assessment* (ABB-ES, 1995b).

In 1994, 13 shallow soil borings were drilled and soil samples were collected at a dry well inlet and a buried fuel trench as part of a contamination assessment of shallow soils in preparation for construction activities. Results of the investigation were presented in a letter report (ABB-ES, 1994b). Six VOCs were detected in the soil samples collected for field GC screening. Five VOCs and four SVOCs were detected in the soil samples collected for fixed-base analysis.

Site 33 At the completion of the Phase I RI field investigation, Site 33 was added to the Phase II-A RI program for contamination assessment. Phase II-A activities at Site 33 included a soil gas survey, soil borings and subsurface soil sampling, monitoring well installation, and groundwater sampling.

Forty-four soil gas samplers were placed on approximately 80-foot centers in the area surrounding Building 1454. Sampler density was increased surrounding the aboveground and underground waste oil tanks and in an area south of Building 1454. Soil gas screening indicated several hot spots with ion counts over 10,000 for PCE and over 50,000 for BTEX, TCE, and cycloalkanes/naphthalenes. Details of the soil gas investigation are presented in *Soil Gas Survey Technical Report* (ABB-ES, 1993b).

Five soil borings (33SB01 through 33SB05) were drilled, and 22 subsurface soil samples were collected during Phase II-A. The soil borings were drilled in soil gas hot spot areas around the abandoned waste oil tanks and Building 1454. Four VOCs, seven SVOCs, six pesticides, and TPH were detected in the subsurface soil samples from Phase II-A (ABB-ES, 1995b). The pesticides were all detected in samples from one boring located in a grass-covered area. Twenty inorganic analytes were also detected in the subsurface soils. None of the metal concentrations analyzed by Toxicity Characteristic Leaching Procedure (TCLP) exceeded the regulatory criteria. Concentrations of organic and inorganic analytes are presented in *Technical Memorandum No. 3, Soil Assessment* (ABB-ES, 1995e).

In 1994, 20 shallow soil borings were drilled (1 to 8 feet bgs, 3 to 4 feet bgs, and 16 from 0.5 to 3 feet bgs), and soil samples were collected by ABB-ES at the apron located east of Building 1454 as part of a contamination assessment of shallow soils for construction activities. Results of the investigation were presented in two letter reports (ABB-ES, 1994b; ABB-ES, 1994c). Two VOCs (benzene and TCE) were detected in the soil samples collected for field GC screening. Three VOCs and one SVOC (di-n-butylphthalate) were detected in the soil samples collected for fixed-base analysis. Di-n-butylphthalate is a common laboratory contaminant and was detected in the laboratory blank. Consequently, the detections of di-n-butylphthalate were not believed to be site derived.

Three additional soil borings (33B001 through 33B003) were drilled along the eastern side of Building 1454 in June 1996 during Phase II-B. Six VOCs and lead were detected in 16 subsurface soil samples (including 2 duplicates) collected from these borings. The highest VOC concentration was of TCE (130 μg/kg) in a soil sample near the surface at 33SB002.

3.0 FIELD INVESTIGATIVE METHODS

Field investigative techniques used during the RI to collect the data are described in the RI/FS Work Plan, Volume I (E.C. Jordan, 1990); the RI/FS Phase II-C Work Plan for Sites 3, 4, 30, 32, and 33 (Brown & Root Environmental, 1997b); and in the NAS Whiting Field GIR (ABB-ES, 1998). These reports provide descriptions of sampling methods, field personnel responsibilities, sample management, chain of custody, project documentation, change in field methods, protocols on corrective actions, decontamination procedures, waste management handling, and other general project standards and procedures.

Field and laboratory quality assurance (QA) and quality control (QC) requirements for the RI activities comply with the RI/FS Quality Assurance Program Plan (QAPP) located in Appendix B of the RI/FS Work Plan, Volume II (E.C. Jordan, 1990) and the FDEP *Comprehensive Quality Assurance Plan* (DEP-QA-001/92, Brown & Root Environmental, 1997a). Health and safety requirements were in accordance with the general Health and Safety Plan located in Volume III of the RI/FS Work Plan (E.C. Jordan, 1990) and the *Health and Safety Plan for RI/FS Field Investigation* (Brown & Root Environmental, 1998).

These field and laboratory investigation techniques are in general conformance with USEPA standard operating procedures (USEPA, 1991a and 1996), and the standard operating procedures issued by the QA Section of the FDEP *Comprehensive Quality Assurance Plan* (DEP-QA-001/92, Brown & Root Environmental, 1997a) and were followed during the RI sampling and analysis program.

The following provides a brief description of the number and types of environmental samples and the analytical methodology for the RI for Sites 3, 5, 4, 6, 29, 30, 32, and 33.

3.1 SOIL GAS SURVEY

Soil gas surveys were performed by Northeast Research Institute under the direction of ABB Environmental Services at Sites 3, 5, 6, 29, 30, 32, and 33 in June 1992 (ABB-ES, 1993b). The survey was conducted using Petrex™ passive soil gas samplers at 221 points total. A total of 206 of the samples were collected at Sites 3, 6, 30, 32, and 33. The survey identified BTEX, PCE, TCE, cycloalkanes, and naphthalenes in the subsurface soil gas at the North Field, South Field, and Midfield Maintenance areas. Some soil boring locations for 1998 RI fieldwork were based on uninvestigated soil gas hot spots. Results of the soil gas survey are described in the *Soil Gas Survey Technical Report* (ABB-ES, 1993b).

3.1.1 North Field Industrial Area Sites 3 and 32

At Sites 3 and 32 (North Field Maintenance Hangar Area), 106 Petrex™ passive soil gas samplers were installed. These samplers were placed on approximately 80-foot centers surrounding the maintenance hangar buildings. At Site 3, the grid extended approximately 200 feet south of Building 2941 and encompassed the abandoned underground waste oil tank, the paint locker, the former underground waste solvent storage tank area, and parking areas. The grid also surrounded Building 2941 as well as the eastern parking area.

At Site 32, the soil gas sample grid extended east of the North Field Maintenance Hangar to encompass the wash rack, an area of aboveground and abandoned underground waste oil storage tanks, the current fuel transfer station, and parking areas. Toward the west, the soil gas sampling extended approximately 100 feet in the airfield area.

3.1.2 South Field Maintenance Hangar Site 30

At Site 30, 56 soil gas samples were collected on approximately 80-foot centers surrounding the South Field Maintenance Hangar and South Control Tower Building 1406. This sample grid extended approximately 120 feet east of the South Control Tower Building onto the airfield, and encompassed the wash rack and hazardous waste storage area, located west of the South Field Maintenance Hangar. In addition, aboveground and abandoned underground waste oil tanks located west of Building 1406 and the abandoned underground waste oil tanks located south of the same building were also included in the sampling grid.

3.1.3 Midfield Maintenance Hangar Sites 5, 6 and 33

Sites within the boundary of the Midfield Maintenance Hangar Area soil gas grid included Sites 5, 6, and 33. Although Sites 5 and 6 are within the soil gas survey grid, the focus of the survey was on Site 33 because of the nature of the associated wastes (i.e., solvents and fuels). Forty-four soil gas samplers were installed at the Midfield Maintenance Hangar encompassing Sites 5, 6, and 33 and including the buildings, the installation water supply well, the former AVGAS storage tank location, the abandoned underground waste oil tanks, and the drainage ditch located to the southwest. Samplers were installed with approximately 80-foot centers throughout the survey area. Sampler density was increased surrounding the aboveground and underground waste oil tanks and in an area south of the hangar.

Soil gas sample results were contoured to evaluate the soil gas measurements. The results of the soil gas survey and other details are presented in the *Soil Gas Survey Technical Report* (ABB-ES, 1993b).

3.2 SURFACE SOIL ASSESSMENT

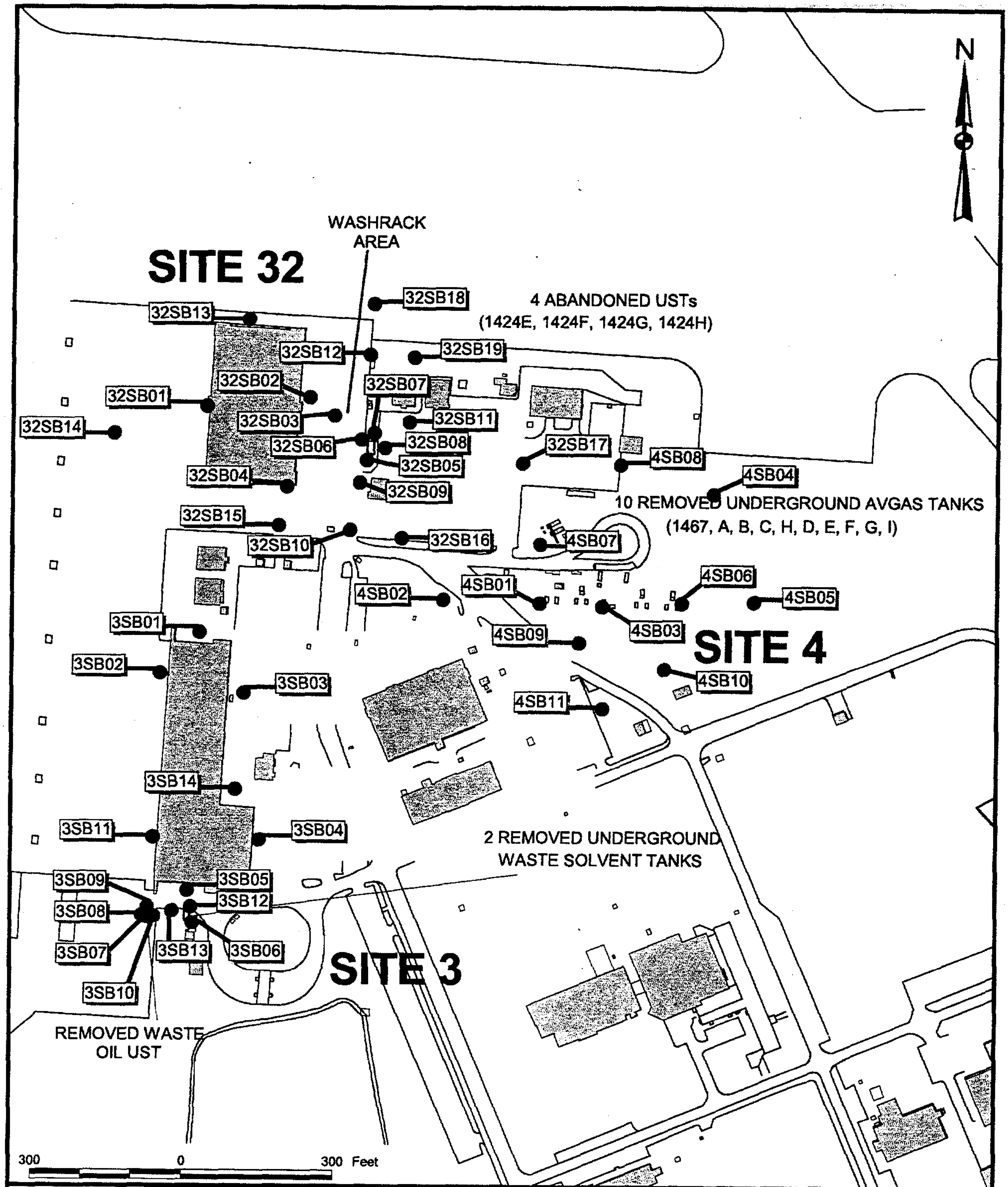
The surface soil assessment includes the results of Phase II-A and Phase II-B RI activities, briefly described in Section 2.0 of this report; in the NAS Whiting Field GIR (ABB-ES, 1998); and in *Technical Memorandum No. 3* (ABB-ES, 1995e); and additional samples collected during Phase II-C. This section describes the rationale and sampling methods related to the Phase II-C surface soil assessment. Surface soil sampling results are discussed in Section 5.2 of this report.

The Phase II-C soil samples were collected primarily to define the lateral and vertical extents of soil contamination previously discovered. Evaluation of the previous investigation data suggested additional data were needed to define the concentrations of constituents in soil to regulatory-defined or risk-based concentrations and to improve the certainty of data interpretation in support of the FS engineering analysis design.

The surface soil samples, including the environmental and QC samples, were collected and analyzed at an off-site laboratory using Contract Laboratory Program (CLP) methodology for analysis of VOCs, SVOCs, pesticides, PCBs, TPH, metals, and cyanide. GC and/or mass spectroscopy methods were used for analysis of VOCs by Method 8240, SVOCs by Method 8270, and organochlorine pesticides/PCBs by Method 8080. Inorganic analytes were analyzed by inductively coupled plasma, graphite furnace atomic absorption, or cold vapor atomic absorption, as appropriate (e.g., Methods 6010, 7420, or 7470). Cyanide analyses were performed using Method 9010 and TPH analyses were performed using Florida Pro or Method 418.1. The laboratory analytical program is described in more detail in Section 2.2 of the NAS Whiting Field GIR (ABB-ES, 1998).

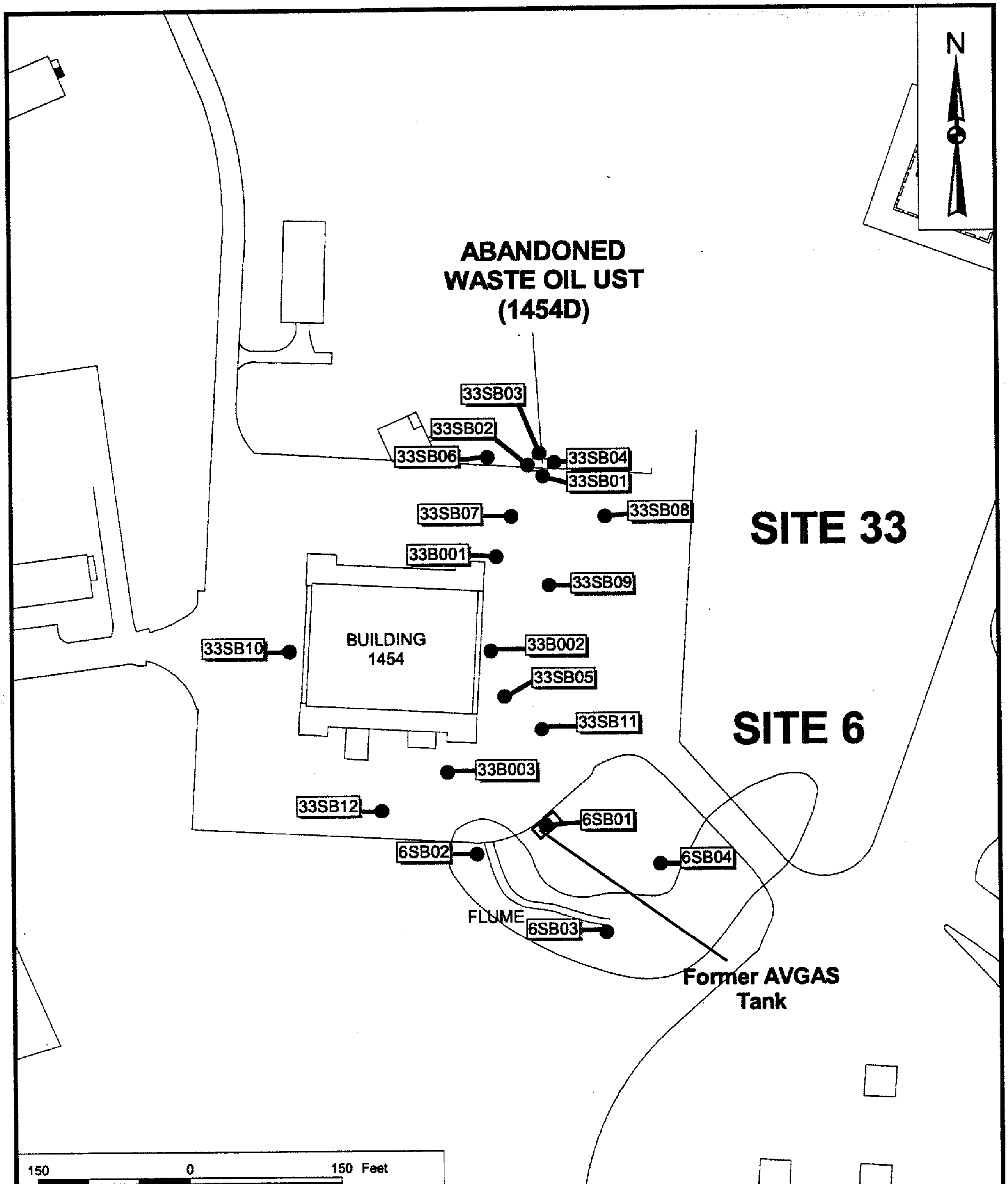
Background screening criteria were established by collecting background samples across the installation from each U.S. Department of Agriculture (USDA) soil type identified at NAS Whiting Field. These data are presented in Subsection 3.3.1 of the GIR (ABB-ES, 1998). The arithmetic mean of analytes detected in the background soil samples was calculated by summing individual analyte concentrations and then dividing the sum by the number of samples from which the analytes were detected. Investigation samples were then compared to twice the arithmetic mean of analyte concentrations detected in background surface soil samples associated with specific soil types.

Phases II-A, II-B, and II-C soil sample locations are shown in Figures 3-1 through 3-3. A total of 15 surface soil samples were collected at Sites 3, 4, 30, and 33 in areas not covered with asphalt or concrete pavement. Each sample was collected from the land surface to a maximum depth of 2 feet bgs using a decontaminated stainless steel split-spoon. To minimize volatilization, samples for VOC analyses were transferred directly to



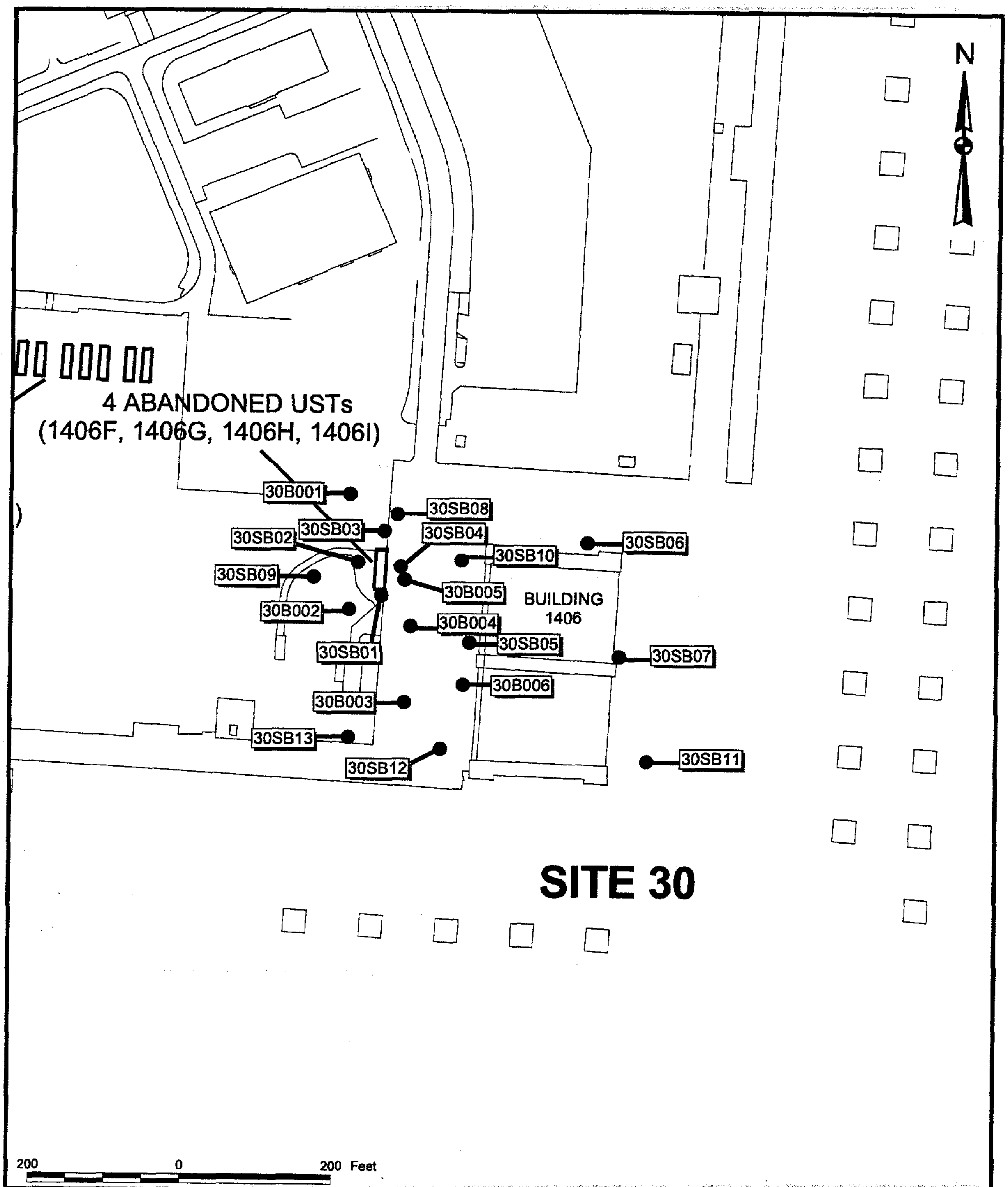
DRAWN BY D. PERRY — DATE 11-MAY-99		SITES 3, 4, AND 32 SOIL BORING LOCATION MAP NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER —
CHECKED BY — DATE			APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 3-1 — REV 0

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 11-MAY-99 DNP SITES 3, 4, AND 32 SOIL BORING LOCATION MAP LAYOUT



DRAWN BY J. BELLONE	DATE 14-SEP-99	SITES 6 AND 33 SOIL BORING LOCATION MAP	CONTRACT NUMBER —
CHECKED BY	DATE	NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 3-2 / REV 0

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 11-MAY-99 DNP SITES 6 AND 33 SOIL BORING LOCATION MAP LAYOUT



DRAWN BY D. PERRY / DATE 11-MAY-99		SITE 30 SOIL BORING LOCATION MAP NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER
CHECKED BY / DATE			APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-3 / REV 0

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 11-MAY-99 DNP SITE 30 SOIL BORING LOCATION MAP LAYOUT sample jars. Soil samples were described using the Unified Soil Classification System (USCS) and recorded in a bound field logbook. The samples were analyzed at a laboratory for VOCs, SVOCs, TPH, pesticides, PCBs, and inorganics. Surface soil sampling results are discussed in Section 5.0 of this report.

3.3 SUBSURFACE SOIL ASSESSMENT

The subsurface soil assessment included soil boring installation, split spoon sampling, and geotechnical sampling. The results of the Phase II-A and Phase II-B subsurface soil assessment activities are briefly described in Section 2.0 of this report; in the NAS Whiting Field GIR (ABB-ES, 1998); and in *Technical Memorandum No. 3* (ABB-ES, 1995e). This section describes the rationale and sampling methods related to the Phase II-C subsurface soil assessment. Subsurface soil results are discussed in Section 5.2 of this report.

3.3.1 Split-Spoon Sampling

Split-spoon samples 2 inches in diameter by 2 feet in length were collected at 5-foot intervals from Phase II-C soil borings. Split-spoon soil sampling began at the land surface and continued to the boring termination depth. The method used to conduct the split-spoon soil sampling was American Society for Testing and Materials (ASTM) D1586. As a soil sample was collected, it was described on site by the field geologist, who recorded texture, color, grain size, and other characteristics of the soil recovered from the borings. The soil was usually classified using the USCS nomenclature.

Soil samples were collected in all borings for chemical analysis using a nominal 2-inch-diameter split-spoon sampler. All borings were drilled to a minimum depth of 30 feet bgs. If at 30 feet bgs the total organic vapor analyzer (OVA) readings were greater than 50 ppm, then the boring was continued to a depth 10 feet below the depth where OVA readings decreased to < 50 ppm or to the water table, whichever occurred first. Soil samples were selected for laboratory analysis from the surface soil in unpaved areas and within each 30-foot depth interval based on high OVA readings or changes in lithology, or at the discretion of the site geologist based on other field observations. Soil samples were analyzed for VOCs, SVOCs, TPH, pesticides, PCBs, and inorganics.

3.3.2 Soil Boring Installation - Sites 3, 4, and 32

The Phase II-C RI/FS investigation at Site 3 consisted of four soil borings and associated subsurface soil sampling to help characterize the nature and extent of soil contamination. The supporting rationale for these borings is presented below. Figure 3-1 shows the approximate locations of the soil borings, and soil boring logs are included in Appendix A.

RI/FS Rationale for Soil Borings at Site 3	
Soil Boring Location	**Rationale**
3SB11, 3SB14	Uninvestigated soil gas hot spot.
3SB12, 3SB13	Determine lateral extent of contamination around former USTs.

The Phase II-C RI/FS investigation at Site 4 consisted of 11 soil borings and associated subsurface soil sampling to help characterize the nature and extent of soil contamination. The supporting rationale for these borings is presented below. Figure 3-1 shows the approximate locations of the soil borings, and soil boring logs are included in Appendix A.

RI/FS Rationale for Soil Borings at Site 4	
Soil Boring Location	**Rationale**
4SB01, 4SB02, 4SB03, 4SB04, 4SB05, 4SB06, 4SB09, 4SB10, 4SB11	Determine extent of contamination around former USTs and investigate high OVA readings from soil borings.
4SB07	Uninvestigated high OVA readings from soil borings.
4SB08	Waste oil line and sump.

The Phase II-C RI/FS investigation at Site 32 consisted of 11 additional soil borings and associated subsurface soil sampling to help characterize the nature and extent of soil contamination. The supporting rationale for these borings is presented below. Figure 3-1 shows the approximate locations of the soil borings, and soil boring logs are included in Appendix A.

RI/FS Rationale for Soil Borings at Site 32	
Soil Boring Location	**Rationale**
32SB09, 32SB11, 32SB12, 32SB18. 32SB19	Determine lateral extent of contamination around former USTs and north and south end of wash rack; 1,500 ppm OVA reading at 32SB05; and chromium and selenium > background but < risk - based concentrations (RBCs) /soil screening levels (SSLs).
32SB13	Soil gas hot spot at diesel tank location.
32SB10, 32SB14, 32SB15, 32SB16, 32SB17	Soil gas hot spots and sewer line locations.

3.3.3 Soil Boring Installation - Sites 6 and 33

No additional soil sampling was performed for Site 6 during the Phase II-C investigation. Results from previous investigations at Site 6 are briefly described in Section 2.0 of this report, in the NAS Whiting Field GIR (ABB-ES, 1998), and in *Technical Memorandum No. 3* (ABB-ES, 1995e).

The Phase II-C RI/FS investigation at Site 33 consisted of seven additional soil borings and associated subsurface soil sampling to help characterize the nature and extent of soil contamination. The supporting rationale for these borings is presented below. Figure 3-3 shows the approximate locations of the soil borings, and soil boring logs are included in Appendix A.

RI/FS Rationale for Soil Borings at Site 33	
Soil Boring Location	**Rationale**
33SB06, 33SB07	Determine lateral extent of contaminated soils west and south of abandoned UST; 900 ppm OVA reading at 33SB02; arsenic > background and RBC; lead > background.
33SB08, 33SB10	Uninvestigated soil gas hot spot.
33SB09, 33SB11, 33SB12	Determine lateral extent of contaminated soils at 33B001, 33B002 at apron, and 33B003 at steam pit; TCE > SSL_{gw}.

3.3.4 Soil Boring Installation - Site 30

The RI/FS investigation at Site 30 consisted of six additional soil borings and associated subsurface soil sampling to help characterize the nature and extent of soil contamination. The supporting rationale for these borings is presented below. Figure 3-2 shows the approximate locations of the soil borings, and soil boring logs are included in Appendix A.

RI/FS Rationale for Soil Borings at Site 30	
Soil Boring Location	**Rationale**
30SB08, 30SB09, 30SB10, 30SB12, 30SB13	Determine lateral extent of contamination around former USTs and north and south end of wash rack; 200 ppm OVA reading at 30SB04; TCE, benzene > SSL_{gw} at 30SB02, 30SB04, and north end of wash rack; arsenic > background and RBC; lead and selenium > background; dichloroethene, methylene chloride, and naphthalene > SSL_{gw} at 30B00301, south end of wash rack.
30SB11	Uninvestigated soil gas hot spot; TCE > SSL_{gw} at 30SB07; arsenic > background and RBC.

3.3.5 Geotechnical Sampling

Fourteen geotechnical samples were collected using a thin-walled Shelby tube (ASTM D1587) during installation of the Phase II-C soil borings. These samples were collected at various depths between the land surface and the water table. The geotechnical analyses performed are shown below.

Geotechnical Analyses	
Parameters	**Method**
Moisture Content	ASTM D2216
Dry Bulk Density	ASTM D2167
Undisturbed Permeability	ASTM D2434
Soil Classification	ASTM D2487

The results of the geotechnical analyses included in Appendix A will be used in the FS, if required, to evaluate remedial alternatives. The number of geotechnical samples collected from each site is shown below.

Site	Geotechnical Samples Collected
3	4
4	3
30	2
32	2
33	3

4.0 DATA QUALITY

Various QC measures were implemented during the 1998 Phase II-C RI/FS field sampling and laboratory analysis performed by Tetra Tech NUS at NAS Whiting Field. These measures were conducted to ensure the resultant data were suitable for their intended uses (e.g., nature and extent determination, risk assessment, etc.). A brief summary of the QC measures is provided in this chapter. Section 4.1 contains a summary of the Data Quality Objectives (DQOs). Field QC samples are discussed in Section 4.2. A summary of the data validation procedures and the results of the data validation process are provided in Section 4.3.

This section does not address the data quality associated with historical analytical data (e.g., data collected by previous contractors, such as ABB-ES). The quality associated with historical data is addressed in the associated published reports.

4.1 DATA QUALITY OBJECTIVES

A discussion of the DQOs for the Phase II-C RI/FS sampling is provided in Sections 2.9 and 2.10 of the Phase II-C RI/FS Work Plan (Brown & Root Environmental, 1997b). DQOs for all field and laboratory analyses, including requirements for precision, accuracy, and completeness, are summarized in the remainder of this section.

4.1.1 Precision

Precision characterizes the amount of variability and bias inherent in a data set. This parameter also describes the reproducibility of measurements of the same parameters for samples under similar conditions. Precision is expressed as a Relative Percent Difference (RPD), defined as the relation of the range relative to the mean RPDs, which are typically expressed as percentages, are used to evaluate both field and laboratory duplicate precision, and are calculated, as follows:

$$RPD = \frac{V1 - V2}{(V1 + V2)/2} \times 100$$

where RPD = relative percent difference
V1, V2 = two results obtained by analyzing duplicate samples.

For non-USEPA CLP data, the precision objectives of ±50 percent for solid matrices and ±30 percent for aqueous matrices were employed for this project.

Field duplicates monitor the consistency with which environmental samples were obtained and analyzed. Laboratory duplicates measure the reproducibility of laboratory generated results. RPDs were calculated for each set of field and laboratory duplicates generated for the investigation. Failures in meeting the precision objectives resulted in the qualification (as per data validation protocols) of the associated analytical data. The qualification of the Phase II-C RI/FS analytical data, as well as the implication of the data qualifications, is discussed in Section 4.3.

4.1.2 Accuracy

The degree of accuracy of a measurement, expressed as a percent recovery, is based on a comparison of the measured value with an accepted reference or true value. Accuracy measurements are determined by the analysis of "spiked" samples (i.e., blank, surrogate, or matrix spikes). These analyses measure the accuracy of the laboratory operations as affected by the sample matrix. Percent recovery is calculated using the following equation:

$$\%R = \frac{Ss - So}{S} \times 100$$

where	%R	=	percent recovery
	Ss	=	result of spiked sample
	So	=	result of non-spiked sample
	S	=	concentration of spiked amount.

The accuracy objective for the Phase II-C RI/FS inorganic analytical data is defined as 75 to 125 percent (percent recovery). Accuracy in the organic fraction is measured by the addition of system monitoring compounds prior to sample preparation/extraction. The accuracy objective for the organic fraction is defined by the particular system monitoring compounds and the laboratory's statistically derived QC limits. Failures in meeting the accuracy objectives resulted in the qualification (as per data validation protocols) of the associated analytical data. In accordance with DQOs, two additional matrix spikes/matrix spike duplicates (MS/MSDs) should have been collected during the RI sampling events. However, it is unlikely the absence of two additional MS/MSDs impacted the evaluation of matrix effects. Appendix B contains QC data, including a summary of the number of MS/MSDs collected during the RI sampling events. A discussion of the qualification of the Phase II-C RI/FS analytical data and the implication of the data qualifications are provided in Section 4.3.

4.1.3 Representativeness

Representativeness is defined by the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Consideration of geological variability, contaminant concentration variability, collection and preparation variability, and analytical variability are selected variables, attempting to ensure representativeness.

Representativeness with respect to geological and sample collection and preparation variability has been addressed within the Sampling and Analysis Plan. The methods and protocols used to select samples representative of a particular sampling site are outlined within the Sampling and Analysis Plan. Collecting a sufficient number of samples of an environmental medium, properly chosen with respect to place and time, ensures representativeness. The precision of a representative set of samples reflects the degree of variability of the sampled medium, as well as the effectiveness of the sampling techniques and laboratory preparation.

Representativeness of contaminant concentration and analytical variability is ensured by the use of both appropriate sampling procedures and analytical methods. Sampling procedures include the collection of field QC blanks, used to assess the potential for field contamination of environmental media. Selection of appropriate analytical methodologies and adherence to analytical requirements provide representative concentrations. Contaminant concentration and analytical variability are assessed and evaluated via data review and validation.

4.1.4 Comparability

Comparability is defined as the confidence with which a given data set can be compared to another. Comparability is ensured by the use of both standard sampling and collection procedures and standard analytical methodologies. Application of standard operating procedures as outlined in the Sampling and Analysis Plan has ensured both sampling and analytical comparability.

4.1.5 Completeness

Completeness is a measure of the amount of valid data obtained from the field and laboratory analyses in relation to the total amount of data collected. Completeness is typically expressed as a percentage and is determined using the following equation:

$$\%C = \frac{V}{T} \times 100$$

where %C = percent completeness
V = number of results determined to be valid
T = total number of results.

Under ideal conditions, the completeness objective would be 100 percent. However, samples can be rendered unusable during shipping or preparation (e.g., bottles broken or extracts accidentally destroyed) or analysis (e.g., loss of instrument sensitivity, strong matrix effects). The calculated percent completeness for all chemical analytical data collected during the Phase II-C RI/FS sampling event is 99.4 percent (i.e., 102 chemical analytical results out of a total of 14,682 data points were qualified as unusable.)

Section 4.3 contains a summary of the data validation results and describes, in general, the rationale behind the rejection of these analytical results.

4.2 FIELD QUALITY CONTROL SAMPLES

The following field QC samples were collected during the Phase II-C RI/FS sampling effort and analyzed in accordance with DQO requirements, as specified in the Work Plan:

- Field duplicates were obtained at a frequency of one per every ten samples (10 percent per matrix). Field duplicates for soil samples are two separate samples collected from the same source. Aqueous sample duplicates are collected simultaneously. Duplicates assess the overall precision of the sampling and analysis program.

- Trip blanks of analyte-free water were generated by the laboratory, taken to the sampling site, and returned to the laboratory with the environmental samples to be analyzed for VOCs. Analytical results for trip blanks are used to determine the level of contamination associated with the transportation of environmental samples. One trip blank was collected per each cooler and analyzed for volatile organics.

- Rinseate blanks were obtained by pouring analyte-free water over sample collection equipment (e.g., bailers, etc.) after decontamination to assess the effectiveness of field decontamination procedures. Samples were obtained at a frequency of 1 per 20 samples per media per analysis (i.e., 5 percent per matrix).

- Field blanks consisted of source water samples used in steam cleaning and/or decontamination and are used to determine the level of contamination associated with the source water. Field blanks were obtained at a frequency of one per event per decontamination water source.

Documentation for the actual collection of the aforementioned field QC samples for all Phase II-C RI/FS analytical data is provided in Appendix B.

4.3 DATA VALIDATION

All samples collected as part of the Phase II-C RI/FS field effort and sent to the laboratory for chemical analysis were subjected to data validation. Data validation is an objective systematic process in which analytical data are reviewed to ascertain the validity of the reported results and to identify for the data user the possible limitation of these results. This section summarizes the various aspects of the data validation process.

4.3.1 General Data Validation Procedures

Validation of data generated for samples collected during the Phase II-C RI/FS field effort was completed in accordance with the procedures for Level D data validation as outlined in Navy guidance (Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program, NEESA 20.2-047B). Level D data validation was performed for all samples analyzed via the USEPA's CLP methods, as well as for some samples analyzed via SW-846 methods, similar to the CLP methods (e.g., the 8000 series methods). Data were validated in accordance with the USEPA's CLP Functional Guidelines for Organic and Inorganic Data Review (USEPA 1994a and 1994b, respectively), as amended for use in USEPA Region IV.

At a minimum, the validation process included consideration of the following: data completeness, holding time compliance, mass calibrations, field QC and laboratory generated blanks, internal standards, surrogate spikes, blank spikes, matrix spikes, field duplicate precision, chemical interferences, quantitation, detection limits, and system performance.

Evaluation of laboratory and field QC blank analyses aided in the elimination of false positive results identified as laboratory artifacts. The overall determination of data utility or reliability was based upon laboratory compliance with specified methods and adherence to QC requirements. Noncompliances observed during the validation process typically resulted in the qualification of the associated analytical data. The qualifiers alert the data user to imprecise or estimated results and, in the worst case, unreliable and unusable data.

The net results of the validation process were summarized in sample delivery group-specific technical reports consisting of a memorandum, a section of qualified analytical results, and a supporting documentation section providing the rationale for changes and/or qualification of the data. These memoranda provide a detailed explanation of the results of the data validation review. All data validation documentation is currently retained on file by Tetra Tech NUS, in the Pittsburgh, Pennsylvania, office.

4.3.2 Data Validation Qualifiers

As mentioned previously, the qualification of analytical data during the validation process (i.e., application of U, UJ, J, UR, and R qualifiers) was conducted as required by the USEPA Functional Guidelines. The attachment of the data qualifiers to analytical results signifies the occurrence of QC noncompliances noted during the course of data validation. The various data qualifiers are defined, as follows:

- **U** - Indicates the chemical was not detected at the numerical detection limit (sample-specific quantitation limit) noted. Nondetected results from the laboratory are reported in this manner. This qualifier is added to a positive result (reported by the laboratory) if the detected concentration is determined to be attributable to contamination introduced during field sampling or laboratory analysis.

- **UJ** - Indicates the chemical was not detected. However, the detection limit (sample-specific quantitation limit) is considered to be estimated based on problems encountered during laboratory analysis. The associated numerical detection limit is regarded as inaccurate or imprecise.

- **J** - Indicates the chemical was detected. However, the associated numerical result is not a precise representation of the amount actually present in the sample. The laboratory reported concentration is considered to be an estimate of the true concentration.

- **UR** - Indicates the chemical may or may not be present. The nondetected analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies (i.e., holding times missed by a factor of two times the specified time limit, severe calibration noncompliances, and extremely low QC recoveries).

- **R** - Indicates the chemical may or may not be present. The positive analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies.

The preceding data qualifiers may be categorized as indicative of major or minor problems. Major problems are defined as issues resulting in the rejection of data, qualified with UR and R data validation qualifiers. These data are considered invalid and are not used for risk assessment and decision making purposes. Minor problems are defined as issues resulting in the estimation of data, qualified with U, J, and UJ data validation qualifiers. Estimated analytical results are considered to be suitable for risk assessment and decision making purposes.

4.3.3 Summary of Data Validation Results

A brief summary of the data validation results for the Phase II-C RI/FS sampling effort is provided in the remainder of this section.

Organic Analyses

Methylene chloride was identified as a laboratory blank contaminant in nearly all samples. Acetone, di-n-butylphthalate, and bis(2-ethylhexyl)phthalate were detected sporadically in the laboratory and field QC blanks associated with soil samples. Di-n-octylphthalate was qualified for laboratory blank contamination in one sample. Detection limits for acetone, methylene chloride, bis(2-ethylhexyl)phthalate, di-n-butylphthalate, and di-n-octylphthalate in the affected environmental samples were elevated during the data validation process because positive results for these chemicals are considered to be attributable to blank contamination.

In general, analytical results for organic compounds were qualified as estimated, J or UJ, for observed noncompliances with calibrations, system monitoring compounds, internal standards, and percent difference between columns (GC analyses for pesticides/PCBs). More data qualifications were due to calibration noncompliances than for any other QC check. Positive results reported at concentrations less than the Contract-Required Quantitation Limit (CRQL) were also qualified as estimated because of potential uncertainty near the CRQL.

Nondetected results for 2-butanone in 97 out of 99 samples were rejected due to gross technical noncompliance with calibration criteria (i.e., relative response factors < 0.050). Only the positive 2-butanone results reported in samples W32DS001001 and W32SB01202 were not rejected.

Hexachlorocyclopentadiene was rejected in sample W32DS001001 due to extremely low (less than 10 percent) matrix spike/matrix spike duplicate recoveries.

A few results for ethylbenzene, toluene, and xylene were qualified as estimated due to holding time exceedences.

In addition, no qualifiers were applied on the basis of field duplicate precision or blank spike recovery.

Inorganic Analysis

Magnesium and potassium were detected frequently (in more than one-third of the total samples collected) as contaminants in the laboratory blanks at varying concentrations. Potassium and sodium were qualified due to laboratory and field blank contamination in a few samples (less than 10). Aluminum was qualified due to laboratory blank contamination in one sample. The detection limits of those results found to be attributable to blank contamination introduced during laboratory analysis were raised during the validation process. Note no inorganic contaminants were observed in the field blanks.

Inorganic sample results were typically qualified as estimated based on problems noted with matrix spikes, laboratory duplicate precision, chemical interferences [inductively coupled plasma (ICP) only], serial dilution analyses (ICP only), and post-digestion spikes.

Potassium results in samples W04SB05001, W30SB01101, W30SB01201, and W30SB01301 were rejected due to ICP interference.

Note also all holding times were met for inorganic analyses and no qualifiers were applied on the basis of field duplicate imprecision.

All validated results for the Phase II-C RI/FS are presented in Appendix C. This database is inclusive of all positive and non-detect results (i.e., Phase II-C RI/FS data and historical data) and is used to define the nature and extent of contamination, assess contaminant fate and transport, and characterize potential risks.

5.0 INVESTIGATIVE RESULTS

5.1 GEOLOGIC SETTING

This section briefly describes the site geology of the North Field, Midfield, and South Field areas of Whiting Field. Detailed discussions of the regional and local geology are presented in *Technical Memorandum No. 1, Geologic Assessment* (ABB-ES, 1992a), and *Technical Memorandum No. 2, Geologic Assessment* (ABB-ES, 1995a).

5.1.1 North Field Area (Sites 3, 4, and 32)

Surface soil in the vicinity of Sites 3, 4, and 32 consists of Troup loamy sand. The area is underlain by interbedded sand, silt, and clay to a depth of 10 to 30 feet bgs. Underlying this upper unit is fine- to medium-grained sand with scattered, thin lenses of coarse sand, silt, and clay. A clay layer ranging in thickness from 12 to 15 feet was identified underlying Site 3 approximately 100 - 120 feet bgs [at elevations of 55 to 75 feet above National Geodetic Vertical Datum (NGVD)]. This clay unit was logged at monitoring wells WHF-3-3D, WHF-3-7D, WHF-3-4, and WHF-3-1D. Clayey sand was reported in the same depth range at WHF-3-2D, indicating the clay unit is discontinuous to the east of Site 3.

Another stiff clay unit was encountered from 79 to 81 feet bgs at 32SB17. Saturated fine sand was logged at 75.5 feet bgs, indicating the clay unit was of sufficient thickness, consistency, and areal extent to cause localized perching of groundwater in that area. Clayey, sandy silt and clayey sand was reported in nearby borings 32SB16 (85.6 feet bgs) and 4SB01 (80 feet bgs), respectively. This clayey horizon was not encountered in soil borings or monitoring wells located east of 4SB01.

5.1.2 Midfield Area (Sites 6 and 33)

The surface soil in the Midfield Maintenance Hangar Area consists of Troup loamy sand and Dothan/Lucy/Bonifay soil. The area is underlain by interbedded sand, silt, and clay to a depth of 10 to 30 feet bgs. Underlying this upper unit is fine- to medium-grained sand with scattered, thin lenses of coarse sand, silt, and clay. A thick layer of clay underlies Site 6 between 100 and 115 feet bgs (55 – 70 feet above NGVD). The same depth range in Site 33 monitoring wells contains sand, silt, and clay mixtures, while Site 5 monitoring wells penetrated clay or sandy clay in that depth range. This indicates a continuous clay-dominated unit may underlie the Midfield Hangar Area at a depth of 100 to 115 feet, extending north to the western part of Site 5. Lithologic descriptions from monitoring wells located to the northeast of the hanger indicate the clay unit may be thin and discontinuous northeast of the hanger.

5.1.3 South Field Area (Site 30)

The surface soil at Site 30 consists of Troup loamy soil. The surficial geology (upper 30 ft) in the South Field Area is similar to the North Field and Midfield areas. Underlying this upper unit is fine- to medium-grained sand with scattered, thin lenses of coarse sand, silt, and clay. A thick layer of clay located between 100 and 115 feet bgs (30 - 70 feet above NGVD) extends from Site 5 to the northern edge of Site 30. An interbedded sand and clay unit at least 10 feet thick was also encountered at WHF-30-3, located on the southwest corner of the site, at a depth of 129 feet bgs (50 feet above NGVD). The continuity of the deep clay unit at Site 30 is uncertain because of a lack of boreholes to this depth within or to the north and east of the site.

5.2 SOIL ASSESSMENT

The soil assessment at Sites 3, 4, 6, 30, 32, and 33 was performed by analyzing surface and subsurface soil samples. Interpretation of impacts to soil at the site was based on the historical use and operational practices at the site and the chemical and spatial relationship of the chemicals detected in the soil. The chemicals detected and their distribution are presented in the following sections. For screening purposes for non-carcinogenic contaminants, 1/10th of the risk-based concentrations (RBCs) was used. The analytical database for all soil samples is presented in Appendix C.

5.2.1 Site 3

Surface and subsurface soil sampling was conducted in two phases. Soil borings 3SB01 through 3SB10 were installed by ABB-ES in January 1993. Additional soil borings, 3SB11 through 3SB14, were installed by Tetra Tech NUS in March 1998 to sample previously uninvestigated soil gas hot spots and to define the horizontal and vertical extent of soil contamination.

5.2.1.1 Surface Soil

Eight surface soil samples were collected at Site 3. The soil samples were analyzed for VOCs, TPH, SVOCs, pesticides/PCBs, and metals. Surface soil sample locations are presented on Figure 3-1. Analytical results are summarized in Table 5-1. Table 5-2 summarizes the statistical analysis of the data and background concentrations. Background concentrations are based on Troup loamy soil found at

TABLE 5-1
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE1 OF 1

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	3SB1-0-2 1/20/93 0 - 2'	3SB2-1-2 1/9/93 1 - 2'	3SB3-0-2 1/12/93 0 - 2'	3SB4-0-2 1/12/93 0 - 2'	3SB5-1-2 1/8/93 1 - 2'	3SB6-1-2 1/18/93 1 - 2'	3SB9-1-2 1/18/93 1 - 2'	W03SB01301 3/2/98 0 - 2'
VOLATILES (µg/kg)								
2-BUTANONE			6 J					
ACETONE			100	16				
TETRACHLOROETHENE					3 J			
SEMIVOLATILES (µg/kg)								
BENZO(A)ANTHRACENE							98 J	
BENZO(A)PYRENE							40 J	20 J
BENZO(B)FLUORANTHENE							84 J	
BENZO(K)FLUORANTHENE							81 J	
BIS(2-ETHYLHEXYL)PHTHALATE		37 J						
CHRYSENE							130 J	
DIBENZO(A,H)ANTHRACENE								6 J
FLUORANTHENE							220 J	
PHENANTHRENE							48 J	
PYRENE							180 J	
PESTICIDES/PCBs (µg/kg)								
4,4'-DDD			4.2					
4,4'-DDE	2.9 J	0.5 J	3.4 J					
4,4'-DDT		0.9 J						0.99 J
ALPHA-CHLORDANE	10							
DIELDRIN	9.8	0.9 J	44					1.3 J
GAMMA-CHLORDANE	17							
HEPTACHLOR EPOXIDE	26							
TOTAL PETROLEUM HYDROCARBONS (mg/kg)								
TOTAL PETROLEUM HYDROCARBONS	11.5	27.8	7.6		11.6		11.5	11.2
METALS (mg/kg)								
ALUMINUM	8990	9940	21500	5200	20400	5180	4380	13700
ARSENIC	5.5	3.5	3.2	0.58 J	1.7 J	1.1 J	0.9 J	2.2
BARIUM	8.7 J	6.5 J	14.9 J	9.7 J	16.2 J	8.9 J	6.4 J	11.9
BERYLLIUM	0.09 J					0.06 J		
CADMIUM			0.72 J		0.36 J		0.59 J	
CALCIUM	636 J	412 J	1130	1380	385 J	261 J	392 J	408
CHROMIUM	9.6	12.7	42.7	3.7	15.4	4.4	3.2	10.6 J
COBALT	1.3 J	1.2 J	1.6 J	1.7 J		1 J		
COPPER	9.6	1.4 J	9.6	3.2 J	8.5	7.3	3.8 J	4.8
CYANIDE	0.51 J	0.47 J				0.41 J		
IRON	7540	12900	12700	3060	10300	2730	2590	6330
LEAD	14.5	5.8	5.6	3	4.4	1.5 J	3.8	5.2 J
MAGNESIUM	207 J	61.3 J	218 J	104 J	177 J	226 J	80.6 J	202
MANGANESE	72.8	25	61.1	151	67.7	36	104	62
MERCURY	0.02 J	0.03 J	0.04 J	0.04 J	0.06			
NICKEL			15.7	2.2 J	2.2 J		1.7 J	2.6
POTASSIUM		146 J	152 J	99.4 J	175 J		93 J	
SELENIUM	2.7	1 J			0.41 J	1.7		
SILVER	0.57 J	1 J						
SODIUM			212 J	172 J	171 J		165 J	
THALLIUM							0.15 J	
VANADIUM	19.8	33.9	34	7 J	26.4	6.7 J	5.9 J	18.1
ZINC	10.2	1.5 J	9.6	3.9 J	12.2	3.6 J	4 J	8 J

Notes:
The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-2
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Detection Frequency	Minimum Detected Concentration	Maximum Concentration	Location of Sample Maximum	Units	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value: Region III RBC [2] Soil Residential	Screening Toxicity Value: Region III RBC [2] Soil Basis	Screening Toxicity Value: Florida [3] Soil Residential
Volatiles										
2-Butanone	1/7	0.006	0.006	3SB3-0-2(93)	mg/kg	0.006	NA	4700	N	3100
Acetone	2/8	0.016	0.1	3SB3-0-2(93)	mg/kg	0.1	NA	780	N	780
Tetrachloroethene	1/8	0.003	0.003	3SB5-1-2(93)	mg/kg	0.003	NA	12	C	8.9
Semivolatiles										
Benzo(a)anthracene	1/7	0.098	0.098	3SB9-1-2(93)	mg/kg	0.098	NA	0.87	C	1.4
Benzo(a)pyrene	2/7	0.02	0.04	3SB9-1-2(93)	mg/kg	0.04	NA	0.087	C	0.1
Benzo(b)fluoranthene	1/7	0.084	0.084	3SB9-1-2(93)	mg/kg	0.084	NA	0.87	C	1.4
Benzo(k)fluoranthene	1/7	0.081	0.081	3SB9-1-2(93)	mg/kg	0.081	NA	8.7	C	15
Bis(2-Ethylhexyl)phthalate	1/7	0.037	0.037	3SB2-1-2(93)	mg/kg	0.037	NA	46	C	76
Chrysene	1/7	0.13	0.13	3SB9-1-2(93)	mg/kg	0.13	NA	87	C	140
Dibenzo(a,h)anthracene	1/7	0.006	0.006	W03SB01301	mg/kg	0.006	NA	0.087	C	0.1
Fluoranthene	1/7	0.22	0.22	3SB9-1-2(93)	mg/kg	0.22	NA	310	N	2900
Phenanthrene	1/7	0.048	0.048	3SB9-1-2(93)	mg/kg	0.048	NA	160 [4]	N	2000
Pyrene	1/7	0.18	0.18	3SB9-1-2(93)	mg/kg	0.18	NA	230	N	2200
Pesticides/PCBs										
4,4'-DDD	1/8	0.0042	0.0042	3SB3-0-2(93)	mg/kg	0.0042	NA	2.7	C	4.6
4,4'-DDE	3/8	0.0005	0.0034	3SB3-0-2(93)	mg/kg	0.0034	NA	1.9	C	3.3
4,4'-DDT	2/8	0.0009	0.001	W03SB01301	mg/kg	0.001	NA	1.9	C	3.3
Alpha-Chlordane	1/8	0.01	0.01	3SB1-0-2(93)	mg/kg	0.01	NA	1.8 [5]	C	3.1 [5]
Dieldrin	4/8	0.0009	0.044	3SB3-0-2(93)	mg/kg	0.044	NA	0.04	C	0.07
Gamma-Chlordane	1/8	0.017	0.017	3SB1-0-2(93)	mg/kg	0.017	NA	1.8 [5]	C	3.1 [5]
Heptachlor Epoxide	1/8	0.026	0.026	3SB1-0-2(93)	mg/kg	0.026	NA	0.07	C	0.1
Inorganics										
Aluminum	8/8	4380	21500	3SB3-0-2(93)	mg/kg	21500	7924	7800	N	72000
Arsenic	8/8	0.58	5.5	3SB1-0-2(93)	mg/kg	5.5	1.6	0.43	C	0.8
Barium	8/8	6.4	16.2	3SB5-1-2(93)	mg/kg	16.2	11.6	550	N	110
Beryllium	2/8	0.06	0.09	3SB1-0-2(93)	mg/kg	0.09	0.18	16	N	120
Cadmium	3/8	0.36	0.72	3SB3-0-2(93)	mg/kg	0.72	0.29	3.9	N	75
Calcium	8/8	261	1380	3SB4-0-2(93)	mg/kg	1380	198	NA	--	NA
Chromium	8/8	3.2	42.7	3SB3-0-2(93)	mg/kg	42.7	5.5	23 [6]	N	210 [6]

TABLE 5-2
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Detection Frequency	Minimum Detected Concentration	Maximum Concentration	Location of Sample Maximum	Units	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value		
								Region III RBC [2]		Florida [3]
								Soil Residential	Soil Basis	Soil Residential
Cobalt	5/8	1	1.7	3SB4-0-2(93)	mg/kg	1.7	1.5	470	N	4700
Copper	8/8	1.4	9.6	3SB1-0-2(93)	mg/kg	9.6	4.7	310	N	110
Cyanide	3/7	0.41	0.51	3SB1-0-2(93)	mg/kg	0.51	0.14	160	N	30
Iron	8/8	2590	12900	3SB2-1-2(93)	mg/kg	12900	4416	2300	N	23000
Lead	8/8	1.5	14.5	3SB1-0-2(93)	mg/kg	14.5	5.7	400 [7]	--	400
Magnesium	8/8	61.3	226	3SB6-1-2(93)	mg/kg	226	134	NA	--	NA
Manganese	8/8	25	151	3SB4-0-2(93)	mg/kg	151	196	160	N	1600
Mercury	5/8	0.02	0.06	3SB5-1-2(93)	mg/kg	0.06	0.06	2.3 [8]	N	3.4
Nickel	5/8	1.7	15.7	3SB3-0-2(93)	mg/kg	15.7	3.6	160	N	110
Potassium	5/8	93	175	3SB5-1-2(93)	mg/kg	175	88.5	NA	--	NA
Selenium	4/8	0.41	2.7	3SB1-0-2(93)	mg/kg	2.7	0.23	39	N	390
Silver	2/8	0.57	1	3SB2-1-2(93)	mg/kg	1	0.35	39	N	390
Sodium	4/8	165	212	3SB3-0-2(93)	mg/kg	212	203	NA	--	NA
Thallium	1/8	0.15	0.15	3SB9-1-2(93)	mg/kg	0.15	0.58	0.55	N	NA
Vanadium	8/8	5.9	34	3SB3-0-2(93)	mg/kg	34	10.9	55	N	15
Zinc	8/8	1.5	12.2	3SB5-1-2(93)	mg/kg	12.2	7.7	2300	N	23000
Petroleum Hydrocarbons										
TPH	6/8	7.6	27.8	3SB2-1-2(93)	mg/kg	NA	NA	NA	--	340

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998.

(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA, 1998a). (Note: 1/10th RBC value used for non-carcingens).

(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January, 1999.

(4) Value is for naphthalene.

(5) Value is for chlordane.

(6) Value is for hexavalent chromium.

(7) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

(8) Value is for mercuric chloride.

mg/kg - milligrams per kilogram.

NA - not available

Site 3. USEPA Region III residential RBCs for soils and the FDEP residential soil cleanup goals are also presented in Table 5-2. Six of the surface soil samples (3SB2-1-2, 3SB3-0-2, 3SB4-0-2, 3SB5-1-2, 3SB6-1-2, and 3SB9-1-2) were collected from below asphalt or concrete paving.

Volatile Organic Compounds

Three VOCs, acetone, 2-butanone, and PCE, were detected in the surface soil at Site 3. Acetone was detected at 3SB3-0-2 (100 μg/kg) and 3SB4-0-2 (16 μg/kg). The VOC 2-butanone was detected at only 3SB3 at an estimated concentration of 6 μg/kg. PCE was detected at 3SB05 at an estimated concentration of 3 μg/kg. All VOC detections were below the FDEP residential cleanup goals for soil and the USEPA Region III residential RBCs. The distribution of VOCs in surface soil is shown on Figure 5-1.

Semivolatile Organic Compounds

Ten SVOCs were detected in surface soil samples at Site 3, primarily in 3SB9-1-2, which had eight SVOCs. Estimated concentrations ranged from 40 μg/kg of benzo(a)pyrene to 220 μg/kg of fluoranthene.

Other SVOCs detected in surface soils at Site 3 included bis(2-ethylhexyl)phthalate in 3SB2-1-2 at an estimated concentration of 37 μg/kg, and benzo(a)pyrene and dibenzo(a,h)anthracene in W03SB13001 at estimated concentrations of 20 μg/kg and 6 μg/kg, respectively. No SVOCs were detected above their FDEP residential cleanup goals for soil or USEPA Region III RBCs. The distribution of SVOCs in surface soil is presented on Figure 5-1.

Total Petroleum Hydrocarbons

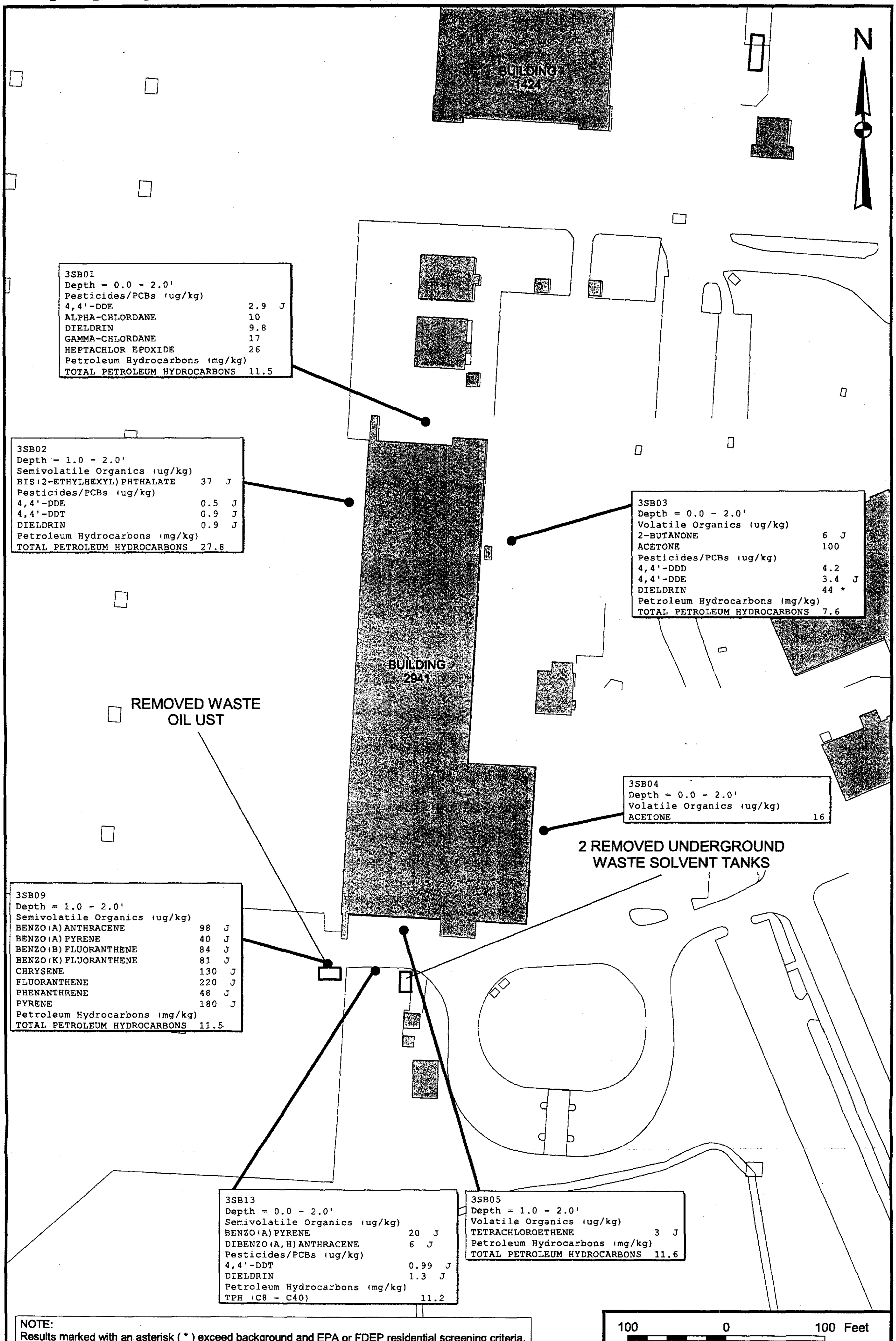
TPH analysis was performed on all eight surface soil samples at Site 3. TPH was detected in six of the eight samples ranging in detected concentration from 7.6 mg/kg to 27.8 mg/kg. The maximum concentration of TPH (27.8 mg/kg) was below the FDEP residential cleanup goals of 350 mg/kg for soil. The distribution of TPH in surface soil is presented on Figure 5-1.

Pesticides/PCBs

Seven pesticide compounds were detected in four surface soil samples (3SB1-0-2, 3SB2-1-2, W03SB01301, and 3SB3-0-2) at Site 3. Dieldren was the most widespread compound detected in the surface soil, being found in all four samples having positive detections of pesticides. Concentrations of

R4708989

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 15-SEP-99 JCB ORGANICS IN SURFACE SOIL - SITE 3 LAYOUT



NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY J. BELLONE / DATE 15-SEP-99		ORGANICS IN SURFACE SOIL AT SITE 3	CONTRACT NUMBER
CHECKED BY / DATE		NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-1 / REV 0

CTO-0028

Rev. 1
09/27/99

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dieldrin ranged from 0.9 µg/kg at 3SB2-1-2 to 44 µg/kg at 3SB3-0-2. 4,4'-DDE was found in three samples at estimated concentrations ranging from 0.5 µg/kg at 3SB2-1-2 to 3.4 µg/kg at 3SB3-0-2. 4,4'-DDT was detected in two samples, 3SB2-1-2 (0.9 J µg/kg) and W035B013 (0.99 J µg/kg). Dieldrin at 44 µg/kg was the only pesticide detected at or above USEPA Region III RBCs (40 µg/kg) for soil. There were no pesticides/PCBs detected above FDEP residential cleanup goals for soil. The distribution of pesticides/PCBs in surface soil is presented on Figure 5-1.

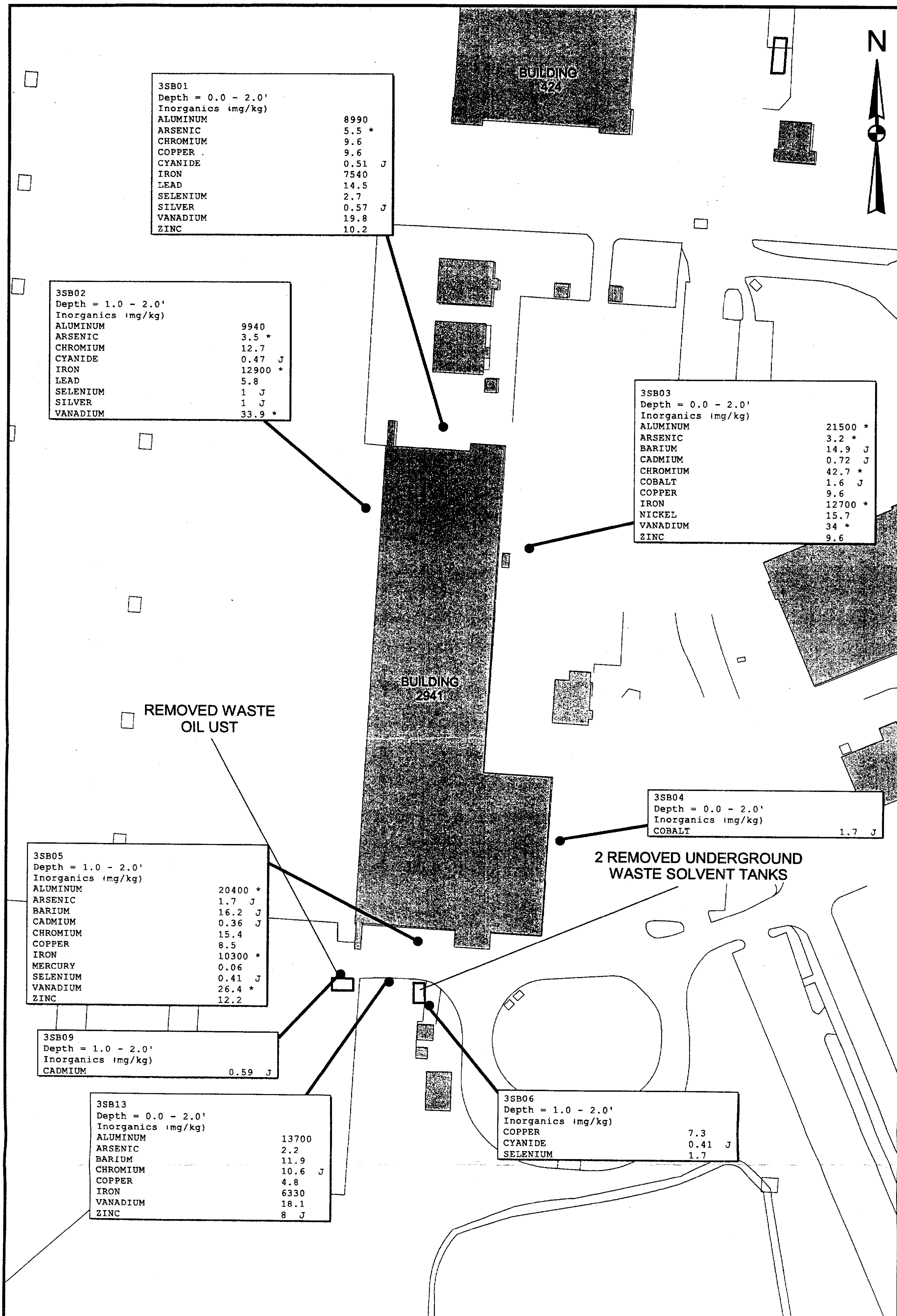
Inorganics

Twenty-three inorganic analytes were detected in the surface soil at Site 3. Twelve of the analytes were detected in all eight samples. Fifteen analytes (aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, cyanide, iron, lead, nickel, selenium, silver, vanadium, and zinc) were detected at concentrations above background soil concentrations for Troup soils. Of these 15 analytes only 5 (aluminum, arsenic, chromium, iron, and vanadium) exceeded the FDEP soil cleanup goals or USEPA Region III RBCs for residential soil. Aluminum was detected above USEPA's RBC for residential soil at 3SB3-0-2 (21,500 mg/kg) and 3SB5-1-2 (20,400 mg/kg). Arsenic was found above FDEP and USEPA criteria at 3SB2-1-2 (3.5 mg/kg) and 3SB3-0-2 (3.2 mg/kg). Chromium was detected above the USEPA residential RBC at 3SB2-1-2 (42.7 mg/kg). Iron was detected above the USEPA residential RBC at 3SB2-1-2 (12,900 mg/kg), 3SB3-0-2 (12,700 mg/kg) and 3SB5-1-2 (10,300 mg/kg). Three samples contained concentrations of vanadium above FDEP soil cleanup goals, 3SB2-1-2 at 33.9 mg/kg, 3SB3-0-2 at 34 mg/kg, and 3SB5-1-2 at 26.4 mg/kg. The distribution of inorganics above background in surface soil is presented on Figure 5-2.

5.2.1.2 Subsurface Soil

Thirty-five subsurface soil samples, including 5 duplicate samples, have been collected from 13 soil borings at Site 3. Thirty samples, including the five duplicate samples, were collected by ABB-ES from nine soil borings in 1993. Five subsurface soil samples were collected from four soil borings by Tetra Tech NUS in 1998. All samples were analyzed for VOCs, TPH, SVOCs, pesticides/PCBs, and metals. Cyanide was not included in the inorganic analyses during the 1998 soil investigation. Table 5-3 summarizes the subsurface soil analytical results for Site 3. Table 5-4 summarizes the frequency of detections, range of detections, and background concentrations. USEPA Region III industrial RBCs and the FDEP industrial soil cleanup goals are also presented in Table 5-4. Soil boring locations are displayed on Figure 3-1.

R4708989



NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99			CONTRACT NUMBER
CHECKED BY	DATE		INORGANICS IN SURFACE SOIL AT SITE 3	APPROVED BY / DATE
COST/SCHEDULE-AREA			NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY / DATE
SCALE: AS NOTED				DRAWING NO. FIGURE 5-2 — REV 0

Rev. 1
09/27/99

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TABLE 5-3
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 7

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	3SB1-15-17 1/20/93 15 - 17'	3SB1-25-27 1/20/93 25 - 27'	3SB1-25-27A 1/20/93 25 -27'	3SB1-5-7 1/20/93 5 - 7'	3SB10-10-12 1/8/93 10 - 12'	3SB10-15-17 1/8/93 15 - 17'
VOLATILES (µg/kg)						
ACETONE						
CHLOROMETHANE						
TETRACHLOROETHENE						
TRICHLOROETHENE						
SEMIVOLATILES (µg/kg)						
DIETHYL PHTHALATE						
PESTICIDES/PCBs (µg/kg)						
4,4'-DDD						
4,4'-DDT						
DIELDRIN			0.98 J	26		
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
TOTAL PETROLEUM HYDROCARBONS				16.6		
METALS (mg/kg)						
ALUMINUM	4640	1280	406	26700	6290	5880
ARSENIC	1.9 J	0.29 J		7.7	1.4 J	0.82 J
BARIUM	10.6 J	2.2 J	0.45 J	8.7 J	3.2 J	8.2 J
BERYLLIUM						
CADMIUM					0.34 J	
CALCIUM	195 J	25.7 J	8.7 J	258 J	250 J	224 J
CHROMIUM	4.6			37.2	15.8	11.2
COBALT	0.96 J			3.2 J		
COPPER	2.7 J			2 J	7.3	6.6
CYANIDE	0.5 J	0.48 J		0.53 J	0.19 J	
IRON	2210	1220	673	28900	15400	10700
LEAD	1.3 J			6.6	3.3	2.4
MAGNESIUM	74.8 J	22.6 J	10.9 J	84.9 J	45.1 J	106 J
MANGANESE	8.4	2.6 J		20.8	9.4	5.9
MERCURY				0.02 J		0.04 J
NICKEL						
POTASSIUM	332 J			172 J	53.2 J	102 J
SELENIUM		1.7 J	1.2 J	3.3		
SILVER				1.8 J		
SODIUM					195.J	211 J
VANADIUM	14.4	10.1 J	10 J	76.6	42	29.7
ZINC	0.64 J	2.9 J		1.8 J	4.4 J	4.2 J

TABLE 5-3
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 7

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	3SB2-10-12 1/9/93 10 - 12'	3SB2-10-12A 1/9/93 10 - 12'	3SB2-5-7 1/9/93 5 - 7'	3SB3-10-12 1/12/93 10 - 12'	3SB3-5-7 1/12/93 5 - 7'	3SB4-10-12 1/12/93 10 - 12'
VOLATILES (µg/kg)						
ACETONE	3 J	1 J	7 J	59	90	69
CHLOROMETHANE						
TETRACHLOROETHENE						
TRICHLOROETHENE						
SEMIVOLATILES (µg/kg)						
DIETHYL PHTHALATE						
PESTICIDES/PCBs (µg/kg)						
4,4'-DDD						
4,4'-DDT						
DIELDRIN						
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
TOTAL PETROLEUM HYDROCARBONS						
METALS (mg/kg)						
ALUMINUM	2130	1780	26300	8850	20400	13400
ARSENIC	0.62 J		6.8	1.5 J	0.96 J	1.5 J
BARIUM	1.4 J	1.3 J	8.8 J	2.5 J	4.2 J	4.2 J
BERYLLIUM			0.07 J			
CADMIUM					0.61 J	
CALCIUM	13.7 J	10.7 J	243 J	183 J	214 J	131 J
CHROMIUM	4.3	3.6	34.5	10	27.6	15.3
COBALT			2.6 J			
COPPER			1 J	4.2 J	7.3	4.7 J
CYANIDE	2.6	0.52 J	0.48 J			
IRON	5010	4380	32600	9220	29500	12300
LEAD	1.1	0.94	4.4	2	3.2	1.9
MAGNESIUM	20.5 J	17.3 J	85.9 J	35.3 J	33 J	55.4 J
MANGANESE	7.9	7.5	15.2	12.1	8	12.3
MERCURY	0.02 J	0.03 J	0.1		0.04 J	
NICKEL				2.1 J		2.8 J
POTASSIUM	151 J		152 J	55.6 J	92.8 J	73.2 J
SELENIUM			1.9			
SILVER	0.98 J	0.55 J	2.1 J			
SODIUM			12.7 J	161 J	187 J	214 J
VANADIUM	15.4	14.5	77.2	27.5	60.5	36.8
ZINC				3.3 J	7.4 J	5 J

TABLE 5-3
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 3 OF 7

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	3SB4-5-7 1/12/93 5 - 7'	3SB5-10-12 1/8/93 10 - 12'	3SB5-5-7 1/8/93 5 - 7'	3SB6-10-12 1/18/93 10 - 12'	3SB6-100-102 1/18/93 100 - 102'	3SB6-100-102A 1/18/93 100 - 102'
VOLATILES (µg/kg)						
ACETONE	23			13 J	14 J	14 J
CHLOROMETHANE						
TETRACHLOROETHENE			3 J			
TRICHLOROETHENE					2 J	
SEMIVOLATILES (µg/kg)						
DIETHYL PHTHALATE						
PESTICIDES/PCBs (µg/kg)						
4,4'-DDD						
4,4'-DDT						
DIELDRIN						
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
TOTAL PETROLEUM HYDROCARBONS			4.9			
METALS (mg/kg)						
ALUMINUM	12500	38300	14100	41000	3030	3250
ARSENIC	1.3 J	1.2 J	2.8	1.8 J	1.3 J	1.3 J
BARIUM	11 J	8.7 J	10.4 J	6.8 J	34.7 J	14.5 J
BERYLLIUM					0.06 J	
CADMIUM		0.79 J	0.31 J			
CALCIUM	245 J	180 J	265 J		142 J	136 J
CHROMIUM	12.1	36.1	11.2	29.7	6.2	6.5
COBALT				1.9 J		
COPPER	3.9 J	11.1	5.4 J	4.6 J	1.6 J	2.1 J
CYANIDE				0.53 J	0.55 J	0.53 J
IRON	8910	29700	8970	25000	2100	2240
LEAD	1.8	3.1	3.8	3.5	2 J	2.9
MAGNESIUM	66.6 J	117 J	109 J	92.4 J	89.2 J	91.5 J
MANGANESE	4.2	12.5	39.4	22.6	2.5 J	3.5 J
MERCURY	0.04 J	0.05 J	0.04 J			
NICKEL	2.3 J	2.8 J		4.3 J		
POTASSIUM	98.8 J	175 J	116 J		271 J	310 J
SELENIUM	0.13 J	0.51 J	0.5 J	1 J	2.2	2.1
SILVER						
SODIUM	163 J	206 J	189 J			
VANADIUM	24.9	72.5	22.7	64.8	15.1	15.6
ZINC	4.4 J	11.1	7.3	2.3 J	3.3 J	8

TABLE 5-3
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 4 OF 7

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	3SB6-15-17 1/18/93 15 - 17'	3SB6-25-27 1/18/93 25 - 27'	3SB6-5-7 1/18/93 5 - 7'	3SB6-70-72 1/18/93 70 - 72'	3SB6-70-72A 1/18/93 70 - 72'	3SB7-10-12 1/27/93 10 - 12'
VOLATILES (µg/kg)						
ACETONE	22 J	23 J	15 J	12 J		11 J
CHLOROMETHANE						
TETRACHLOROETHENE						
TRICHLOROETHENE						
SEMIVOLATILES (µg/kg)						
DIETHYL PHTHALATE						
PESTICIDES/PCBs (µg/kg)						
4,4'-DDD		9.6 J				5 J
4,4'-DDT						5 J
DIELDRIN						
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
TOTAL PETROLEUM HYDROCARBONS						
METALS (mg/kg)						
ALUMINUM	12300	1160	59600	214 J	487 J	5640
ARSENIC	2.6 J	1.5 J	16	0.96 J	1.1 J	4.8
BARIUM	18.3 J	1.5 J	13.5 J			4.3 J
BERYLLIUM			0.09 J			0.13 J
CADMIUM						
CALCIUM	29.1 J	13.7 J	64.9 J			
CHROMIUM	9.6	3.3	37.9	0.9 J	1.8 J	9.6
COBALT			2.2 J			0.87 J
COPPER	2.7 J	0.36 J	8.3			2.1 J
CYANIDE	0.47 J	0.45 J	0.51 J			0.59 J
IRON	4610	784	20400	245 J	222 J	9630
LEAD	3.2	0.67 J	4.3			4.5
MAGNESIUM	142 J	8.4 J	265 J			72.8 J
MANGANESE	12.5	2.4 J	21.7		1.4 J	4.6
MERCURY						0.06
NICKEL			5 J			
POTASSIUM	377 J		190 J			
SELENIUM	0.67 J	0.8 J	1.7		0.77 J	4.9
SILVER						
SODIUM	15.7 J					
VANADIUM	22.6	5.4 J	56.3			29
ZINC	2.2 J	3.9 J	7.5			

TABLE 5-3
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	3SB8-10-12 1/8/93 10 - 12'	3SB8-15-17 1/8/93 15 - 17'	3SB8-15-17A 1/8/93 15 - 17'	3SB9-15-17 1/8/93 15 - 17'	3SB9-30-32 1/8/93 30 - 32'	3SB9-5-7 1/8/93 5 - 7'
VOLATILES (µg/kg)						
ACETONE						
CHLOROMETHANE						
TETRACHLOROETHENE						
TRICHLOROETHENE						
SEMIVOLATILES (µg/kg)						
DIETHYL PHTHALATE			97 J			
PESTICIDES/PCBs (µg/kg)						
4,4'-DDD						
4,4'-DDT						
DIELDRIN						
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
TOTAL PETROLEUM HYDROCARBONS						
METALS (mg/kg)						
ALUMINUM	21500	2250 J	5320 J	6700	803	26300
ARSENIC	1.1 J	1.2 J	1.4 J	1.1 J		0.78 J
BARIUM	4.3 J	5.8 J	8.6 J	4.4 J	1.3 J	16.4 J
BERYLLIUM						
CADMIUM	0.39 J					0.31 J
CALCIUM	233 J	116 J	146 J	178 J	71.6 J	429 J
CHROMIUM	25.9	3.3	5.8	8.2		23.5
COBALT						
COPPER	7.9	2.4 J	3.4 J	5.5 J	0.96 J	8.6
CYANIDE	0.19 J					
IRON	20800	2840	4750	7160	86.1	15500
LEAD	3.1	2.4	2.6	2.5	0.6 J	2.6
MAGNESIUM	54 J		80.7 J	59.5 J	23.6 J	157 J
MANGANESE	9.7	4.5	6.3	6.5	0.88 J	13.2
MERCURY	0.04 J			0.03 J		0.07 J
NICKEL	2.1 J					3.4 J
POTASSIUM	123 J			116 J	79.5 J	142 J
SELENIUM	0.73 J			0.7 J	0.31 J	
SILVER						
SODIUM	189 J	214 J	214 J	192 J	158 J	217 J
VANADIUM	55	13.7	18.8	25.2	0.88 J	38.9
ZINC	6.2	2.3 J	4.3 J	3 J	1.8 J	8.5

TABLE 5-3
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 6 OF 7

SAMPLE NUMBER	W03SB01101	W03SB01201	W03SB01302	W03SB01303	W03SB01402
COLLECTION DATE	3/5/98	3/2/98	3/2/98	3/2/98	3/3/98
SAMPLE DEPTH	20 - 22'	16 - 18'	16 - 18'	30 - 32'	18 - 20'
VOLATILES (μg/kg)					
ACETONE					100 J
CHLOROMETHANE	2 J				
TETRACHLOROETHENE					
TRICHLOROETHENE					
SEMIVOLATILES (μg/kg)					
DIETHYL PHTHALATE					
PESTICIDES/PCBs (μg/kg)					
4,4'-DDD					
4,4'-DDT					
DIELDRIN					
TOTAL PETROLEUM HYDROCARBONS (mg/kg)					
TOTAL PETROLEUM HYDROCARBONS				8.88 J	
METALS (mg/kg)					
ALUMINUM		7030	18200	2010	6570
ARSENIC			2.9		
BARIUM		15.1	15		7.6
BERYLLIUM					
CADMIUM					
CALCIUM					
CHROMIUM	3.7 J	7.7 J	14.4 J	3.4 J	8.6 J
COBALT					
COPPER		2.6	5		3.2
CYANIDE					
IRON	157	2430	6090	120	3080
LEAD	0.86 J	8.3	6.8 J	1.2 J	4.2 J
MAGNESIUM		131	172		
MANGANESE	1.2	7.7	7.7	1.1	7.5
MERCURY					
NICKEL			1.7		
POTASSIUM		352	340		123
SELENIUM					
SILVER					
SODIUM					
VANADIUM	1.8	14.4	24.7	1.3	17.8
ZINC			2.9 J		72.3 J

TABLE 5-3
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA

Notes:

The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-4
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value: Region III RBC[2] Soil Industrial	Screening Toxicity Value: Region III RBC[2] Soil Basis	Screening Toxicity Value: Florida[3] Soil Industrial
Volatiles										
Acetone	14/30	0.001	0.1	mg/kg	W03SB01402	0.1	NA	20000	N	5500
Chloromethane	1/30	0.002	0.002	mg/kg	W03SB01101	0.002	NA	440	C	2.3
Tetrachloroethene	1/30	0.003	0.003	mg/kg	3SB5-5-7(93)	0.003	NA	110	C	17
Trichloroethene	1/30	0.002	0.002	mg/kg	3SB6-100-102A(93)	0.002	NA	520	C	8.5
Semivolatiles										
Diethyl Phthalate	1/30	0.097	0.097	mg/kg	3SB8-15-17A(93)-D	0.097	NA	160000	N	920000
Pesticides/PCBs										
4,4'-DDD	2/30	0.005	0.0096	mg/kg	3SB6-25-27(93)	0.0096	NA	24	C	18
4,4'-DDT	1/30	0.005	0.005	mg/kg	3SB7-10-12(93)	0.005	NA	17	C	13
Dieldrin	2/30	0.001	0.026	mg/kg	3SB1-5-7(93)	0.026	NA	0.36	C	0.3
Metals										
Aluminum	29/30	214	59600	mg/kg	3SB6-5-7(93)	59600	13917	200000	N	NA
Arsenic	25/30	0.29	16	mg/kg	3SB6-5-7(93)	16	3.1	3.8	C	3.7
Barium	27/30	0.45	34.7	mg/kg	3SB6-100-102A(93)	34.7	7.9	14000	N	87000
Beryllium	4/30	0.06	0.13	mg/kg	3SB7-10-12(93)	0.13	0.13	410	N	800
Cadmium	6/30	0.31	0.79	mg/kg	3SB5-10-12(93)	0.79	0.46	100	N	1300
Calcium	22/30	8.7	429	mg/kg	3SB9-5-7(93)	429	222	NA	-	NA
Chromium	28/30	0.9	37.9	mg/kg	3SB6-5-7(93)	37.9	11.4	610[4]	N	420[4]
Cobalt	6/30	0.87	3.2	mg/kg	3SB1-5-7(93)	3.2	0.74	12000	N	110000
Copper	25/30	0.36	11.1	mg/kg	3SB5-10-12(93)	11.1	4.4	8200	N	73000
Cyanide	13/25	0.19	2.6	mg/kg	3SB2-10-12A(93)	2.6	ND	4100	N	39000
Iron	30/30	86.1	32600	mg/kg	3SB2-5-7(93)	32600	9055	61000	N	480000
Lead	28/30	0.6	8.3	mg/kg	W03SB01201	8.3	4.2	400[5]	-	920
Magnesium	26/30	8.4	265	mg/kg	3SB6-5-7(93)	265	136	NA	-	NA
Manganese	30/30	0.88	39.4	mg/kg	3SB5-5-7(93)	39.4	21.3	4700	N	22000
Mercury	12/30	0.02	0.1	mg/kg	3SB2-5-7(93)	0.1	ND	61[6]	N	26
Nickel	9/30	1.7	5	mg/kg	3SB6-5-7(93)	5	2.5	4100	N	28000
Potassium	22/30	53.2	377	mg/kg	3SB6-15-17(93)	377	90.5	NA	-	NA
Selenium	16/30	0.13	4.9	mg/kg	3SB7-10-12(93)	4.9	0.15	1000	N	10000

TABLE 5-4
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value(1)	Screening Toxicity Value: Region III RBC(2) Soil Industrial	Screening Toxicity Value: Region III RBC(2) Soil Basis	Screening Toxicity Value: Florida(3) Soil Industrial
Silver	3/30	0.55	2.1	mg/kg	3SB2-5-7(93)	2.1	0.56	1000	N	9100
Sodium	15/30	12.7	217	mg/kg	3SB9-5-7(93)	217	NA	NA	-	NA
Vanadium	29/30	0.88	77.2	mg/kg	3SB2-5-7(93)	77.2	22.5	1400	N	7400
Zinc	23/30	0.64	72.3	mg/kg	W03SB01402	72.3	7.8	61000	N	560000
Total Petroleum Hydrocarbons										
Total Petroleum Hydrocarbons	3/30	4.9	16.6	mg/kg	3SB1-5-7(93)	16.6	NA	NA	-	2500

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998.

(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA, 1998a). (Note: 1/10th RBC value used for non-carcingens).

(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January, 1999.

(4) Value is for hexavalent chromium.

(5) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

(6) Value is for mercuric chloride.

mg/kg - milligrams per kilogram.

NA - not available.

Volatile Organic Compounds

Four VOCs (acetone, chloromethane, PCE, and TCE) were detected in the subsurface soil at Site 3. Acetone was detected in 14 samples and 2 duplicates. Concentrations ranged from an estimated 1 µg/kg in 3SB2-10-12A to an estimated 100 µg/kg in 3SB01402 (18-20 feet bgs). Chloromethane was detected at an estimated concentration of 2 µg/kg in sample 3SB01101 (20-22 feet). PCE was detected in sample 3SB5-5-7 (5-7 feet bgs) at an estimated concentration of 3 µg/kg.

TCE was detected in sample 3SB6-100-102 (100-102 feet bgs) at an estimated concentration of 2 µg/kg. The depth of this sample indicates it may have been collected from the capillary fringe, or smear zone, above the water table and therefore may reflect groundwater chemistry. No VOC concentrations were above the FDEP industrial soil cleanup goals or USEPA Region III RBCs for soil. The distribution of VOCs in subsurface soil is presented on Figure 5-3.

Semivolatile Organic Compounds

Diethyl phthalate was the only SVOC detected in the subsurface soil at Site 3. The compound was detected only in sample 3SB8-15-17A (field duplicate) at an estimated concentration of 97 µg/kg (see Figure 5-3). This is below the FDEP industrial cleanup goal and the USEPA Region III industrial RBC for soil of 640 mg/kg and 100,000 mg/kg, respectively.

Total Petroleum Hydrocarbons

TPH was detected in three subsurface soil samples. The deepest sample displaying detectable levels of TPH was 30 to 32 feet bgs at 3SB13. The maximum concentration of 16.6 mg/kg was detected in a sample collected from 5-7 feet at 3SB1. This concentration is below the FDEP industrial cleanup goal of 2,500 mg/kg for soil. The distribution of TPH in subsurface soil is presented on Figure 5-3.

Pesticides/PCBs

Three pesticide/PCB compounds were detected in the subsurface soil at Site 3. 4,4'-DDD was detected in sample 3SB6-25-27 at an estimated concentration of 9.6 µg/kg and in sample 3SB7-10-12 at an estimated concentration of 5 µg/kg. Dieldrin was detected in boring 3SB1 at estimated concentrations of 26 µg/kg at 5-7 feet and 0.98 µg/kg at 25-27 feet bgs. 4,4'-DDT was detected at an estimated concentration of 5 µg/kg in sample 3SB07-10-12. The positive detection of dieldren at 25 to 27 feet in 3SB01 represented the deepest detection of pesticide/PCB compounds. All pesticide/PCB concentrations

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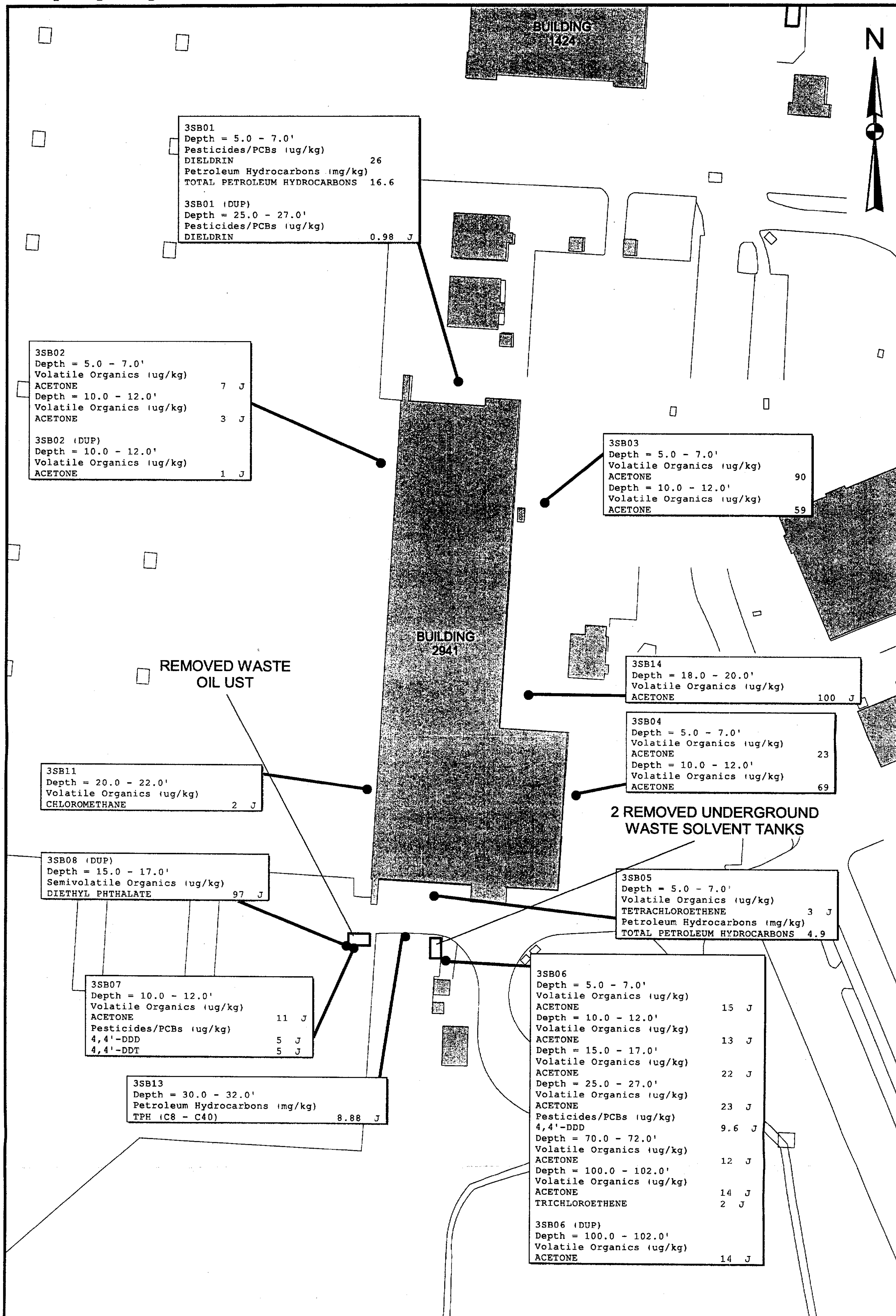

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99	ORGANICS IN SUBSURFACE SOIL AT SITE 3 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER: —
CHECKED BY: —	DATE: —		APPROVED BY: — DATE: —
COST/SCHEDULE-AREA			APPROVED BY: — DATE: —
SCALE: AS NOTED			DRAWING NO. FIGURE 5-3 REV 0

CTO-0028

Rev. 1
09/27/99

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were below their respective USEPA Region III RBC and FDEP industrial cleanup goals for soil. The distribution of pesticides/PCBs in subsurface soil is presented on Figure 5-3.

Inorganics

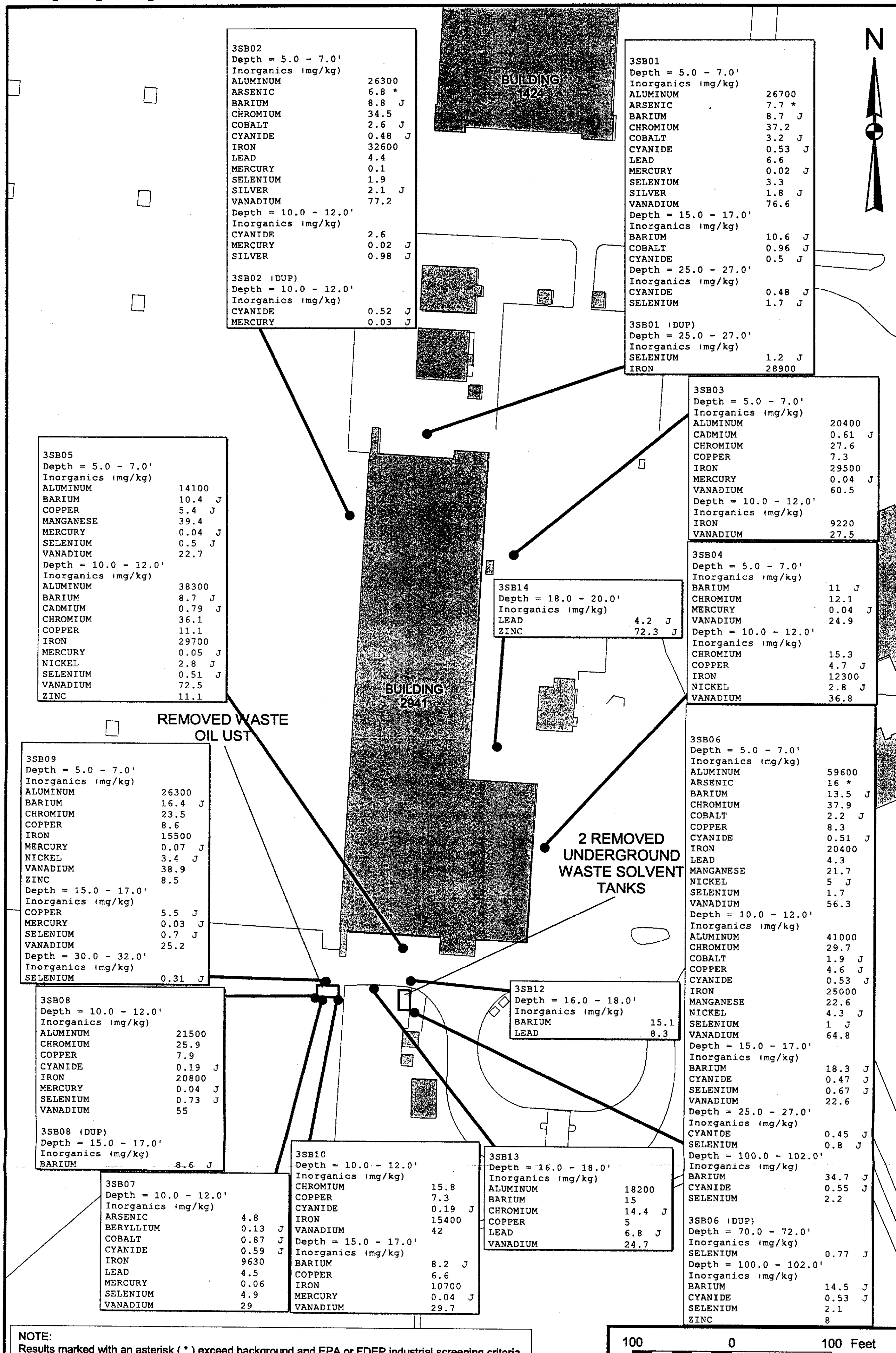
Twenty-two inorganic analytes were detected in the subsurface soil at Site 3. Eighteen non-nutrient analytes (aluminum, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, cyanide, iron, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc) were detected at concentrations above background. Iron was the most common analyte detected above background levels with 12 detections. Iron concentrations ranged from 9,630 mg/kg in 3SB07-10-12 to 32,600 mg/kg in 3SB02-5-7. Analytes detected deepest in the subsurface soil above background were barium (34.7 J mg/kg), cyanide (0.55 J mg/kg), and selenium (2.2 mg/kg). All three analytes were detected at a depth of 100 to 102 feet at 3SB06. The distribution of inorganics above background in subsurface soil is presented in Figure 5-4. Soil boring 3SB11 was the only boring where no inorganic analytes were detected above background levels.

Arsenic was detected above the FDEP or USEPA levels in four subsurface soil samples ranging from 4.8 mg/kg to 16 mg/kg. The deepest arsenic detection above regulatory criteria was 10-12 feet at 3SB07. Arsenic was the only analyte detected at concentrations above the USEPA Region III RBC (3.8 mg/kg) or FDEP industrial cleanup goal (3.7 mg/kg) for soil.

5.2.1.3 Summary

Chemicals detected in the surface and subsurface soils at Site 3 include VOCs, SVOCs, TPH, pesticides/PCBs, and inorganics. Most of the positive detections were confined to the surface soils. Surface soil results appear to show different patterns of SVOCs and pesticides. SVOCs appear to be limited to the surface soil in the area around the former USTs on the southern end of Building 2941, except for bis(2-ethylhexyl)phthalate detected in 3SB02-1-2. The possible mechanism of the release of SVOCs to the surface soil is surface spills from wastes being discharged to the waste oil and waste solvent USTs. There was only one SVOC detection (diethyl phthalate) in the subsurface soil at the former USTs.

Pesticide compounds in surface soil were detected almost exclusively in samples collected from the northern end of Building 2941 (3SB1-0-2, 3SB2-1-2, and 3SB3-0-2). Only one surface soil sample in the vicinity of the USTs (W03SB01301) contained pesticide compounds. Pesticide compounds were detected in three subsurface soil samples to depths of 25-27 feet bgs. 4,4'-DDD was detected in two soil borings



NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY J. BELLONE	DATE 15-SEP-99	INORGANICS IN SUBSURFACE SOIL AT SITE 3 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-4 / REV 0

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(3SB06 and 3SB07) located in the vicinity of the abandoned USTs. 4,4'-DDT was also detected at 10 to 12 feet bgs in 32SB07. Dieldren was detected in boring 3SB01 located on the northern end of Building 2941 at depths of 5 to 7 feet and 25 to 27 feet bgs. The occurrence of pesticides in the surface soils is most likely from pest control efforts.

The remaining chemicals (VOCs, TPH, and inorganics) were detected above screening criteria at a substantially lower frequency in the surface and subsurface soil than SVOCs and pesticides/PCBs. VOC constituents were concentrated along the east side of Building 2941. Acetone was detected more often in the subsurface soil than in the surface soil. Acetone is also a common laboratory-derived contaminant; however, relatively high acetone detections (16 to 100 J μg/kg) in the surface and subsurface soils along the east side of Building 2941 indicate they are valid soil concentrations. PCE was detected in the surface soil and subsurface soil at 3SB05 to a depth of 5-7 feet bgs. Infrequent detections of TPH appear to be centered around the abandoned USTs, with the exception of a detection in 3SB01.

Arsenic and cyanide appear to follow the same pattern as the pesticides in the surface and subsurface soil at Site 3. These constituents are common ingredients in commercial pesticides.

5.2.2 Site 4

Four soil borings were installed near the former USTs in December 1991 and January 1992 by ABB-ES as part of a UST investigation. Organic vapor readings were recorded during this investigation, but no samples were sent to the laboratory for analysis. Surface and subsurface soil sampling at Site 4 was conducted by Tetra Tech NUS in February through March 1998 to determine the extent of contamination at the former USTs (Figure 3-1). Soil borings 4SB01 through 4SB11 were installed and 44 soil samples, including 6 duplicates and 3 geotechnical samples, were collected.

Soil borings 4SB01, 4SB03, and 4SB06 were placed between the former USTs at locations expected to contain the highest concentrations of contaminants. Based on the elevated flame ionization detector readings encountered at these locations, the remaining soil borings were stepped out to define the extent of soil contamination.

5.2.2.1 Surface Soil

Eleven surface soil samples and one duplicate were collected at Site 4 in 1998 and analyzed for VOCs, SVOCs, pesticides/PCBs, TPH, and metals. Surface soil sample locations are presented on Figure 3-1. Organic and inorganic analytical results are summarized in Table 5-5. Table 5-6 summarizes the

TABLE 5-5
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 3

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	W04SB00101 2/21/98 0 - 2'	W04SB00201 3/25/98 0 - 2'	W04SB00301 2/20/98 0 - 2'	W04SB00401 3/24/98 0 - 2'	W04SB00401-D 3/24/98 0 - 2'	W04SB00501 3/24/98 0 - 2'
VOLATILES (µg/kg)						
ACETONE			8 J			
CARBON DISULFIDE						
ETHYLBENZENE			2 J			
TOLUENE			11			
XYLENES, TOTAL			4 J			
SEMIVOLATILES (µg/kg)						
ANTHRACENE			58 J			
BENZO(A)ANTHRACENE			48 J			
BENZO(A)PYRENE			26 J			
BIS(2-ETHYLHEXYL)PHTHALATE				110 J		94 J
CHRYSENE			110 J			
DI-N-BUTYL PHTHALATE						
DI-N-OCTYL PHTHALATE						
DIBENZO(A,H)ANTHRACENE			7 J			
FLUORANTHENE			80 J			
N-NITROSO-DI-N-PROPYLAMINE						
PHENANTHRENE			75 J			
PYRENE			68 J			
PESTICIDES/PCBs (µg/kg)						
4,4'-DDE		1.9 J				
4,4'-DDT		1.7 J				
DIELDRIN		15				
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
TPH (C8-C40)	8.98		6.68 J		7.58 J	
METALS (mg/kg)						
ALUMINUM	17400	7800	8630	7660	10800	7680
ARSENIC	3.4	1.4		0.92	1.7	1.4
BARIUM	5.8	9.6	11.2	8.3 J	8.6 J	14.3 J
CALCIUM		171		289	243	38000
CHROMIUM	11.2	6.9	7.2	7	8.7	7.6
COBALT		0.55				0.57
COPPER	5.7	4	4.1	2.7	3	3.8
IRON	9110	4000	4220	3800	5790	4660
LEAD	3.4	11.9 J	3.7 J	7.3	5.2	7.5
MAGNESIUM		139	173	79.9	75.6	827
MANGANESE	23.2	83.6	108	27.1	34.6	122
MERCURY				0.03		
NICKEL	1.8	1.4	2.3	1.2	1.3	1.4 J
POTASSIUM	102	96.1	133	62.4	50.3	
VANADIUM	23.5	10.6	11.5	11.1	15.3	14.2
ZINC	6.2	10	6.2	5.8	4.3	6.8 J

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TABLE 5-5
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	W04SB00601 2/19/98 0 - 2'	W04SB00701 3/11/98 0 - 2'	W04SB00801 2/23/98 0 - 2'	W04SB00901 2/24/98 0 - 2'	W04SB01001 2/24/98 0 - 2'	W04SB01101 3/25/98 0 - 2'
VOLATILES (µg/kg)						
ACETONE	23 J		85 J	6 J	980 J	
CARBON DISULFIDE			1 J			
ETHYLBENZENE						
TOLUENE			1 J			
XYLENES, TOTAL	2 J		2 J			
SEMIVOLATILES (µg/kg)						
ANTHRACENE						
BENZO(A)ANTHRACENE	84 J					
BENZO(A)PYRENE	80 J	22 J				
BIS(2-ETHYLHEXYL)PHTHALATE	170 J	45 J	39 J	54 J		250 J
CHRYSENE	93 J					
DI-N-BUTYL PHTHALATE						36 J
DI-N-OCTYL PHTHALATE					48 J	
DIBENZO(A,H)ANTHRACENE	31 J	7 J				
FLUORANTHENE	80 J	62 J				
N-NITROSO-DI-N-PROPYLAMINE	10 J					
PHENANTHRENE						
PYRENE	73 J	59 J				
PESTICIDES/PCBs (µg/kg)						
4,4'-DDE		1.9 J				63
4,4'-DDT		3.6 J				36 J
DIELDRIN		0.38 J			59	85
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
TPH (C8-C40)	11.2	166	7.21 J		7.79 J	16
METALS (mg/kg)						
ALUMINUM	27400	12500	7580	27800	13600	9420
ARSENIC	5.5	2.5		5	2.6	1.5
BARIUM	12.7	16.1	15.5	7.2	12.3	11.9
CALCIUM		269	264		477	140
CHROMIUM	21.6	9.6 J	5.2	21.2	10.3	7.2
COBALT						0.65
COPPER	8.1	5.6 J	2.5	7.2	5.1	3.4
IRON	14800	5730	4240	14100	6580	4530
LEAD	19.2 J	18.7 J	3.6 J	5.3 J	5.2 J	10.2 J
MAGNESIUM	184	239	234	122	163	136
MANGANESE	30.8	161	33.3	66.6	93.6	107
MERCURY						
NICKEL	3	3.3	2	2.2	2.3	1.3
POTASSIUM	159	147	160	114	142	86.8
VANADIUM	41.4	17.5	11.2	38.9	18.6	12.6
ZINC	7.5	16.9	5.9	6.1	6.8	8.7

Rev. 1
09/27/99

TABLE 5-5
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA

Notes:
The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-6
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Location of Maximum Concentration	Units	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value: Region III RBC[2] Soil Residential	Region III RBC[2] Soil Basis	Florida[3] Soil Residential
Volatiles										
Acetone	5/11	0.006	0.98	W04SB01001	mg/kg	0.98	NA	780	N	780
Carbon Disulfide	1/11	0.001	0.001	W04SB00801	mg/kg	0.001	NA	780	N	200
Ethylbenzene	1/11	0.002	0.002	W04SB00301	mg/kg	0.002	NA	780	N	1100
Toluene	2/11	0.001	0.011	W04SB00301	mg/kg	0.011	NA	1600	N	380
Xylenes, Total	3/11	0.002	0.004	W04SB00301	mg/kg	0.004	NA	16000	N	5900
Semivolatiles										
Anthracene	1/11	0.058	0.058	W04SB00301	mg/kg	0.058	NA	2300	N	18000
Benzo(a)anthracene	2/11	0.048	0.084	W04SB00601	mg/kg	0.084	NA	0.87	C	1.4
Benzo(a)pyrene	3/11	0.022	0.08	W04SB00601	mg/kg	0.08	NA	0.087	C	0.1
Bis(2-Ethylhexyl)phthalate	7/11	0.039	0.25	W04SB01101	mg/kg	0.25	NA	46	C	76
Chrysene	2/11	0.093	0.11	W04SB00301	mg/kg	0.11	NA	88	C	140
Di-n-butyl phthalate	1/11	0.036	0.036	W04SB01101	mg/kg	0.036	NA	780	N	7300
Di-n-octyl phthalate	1/11	0.048	0.048	W04SB01001	mg/kg	0.048	NA	160	N	1500
Dibenzo(a,h)anthracene	3/11	0.007	0.031	W04SB00601	mg/kg	0.031	NA	0.087	C	0.1
Fluoranthene	3/11	0.062	0.08	W04SB00301	mg/kg	0.08	NA	310	N	2900
Fluoranthene	3/11	0.062	0.08	W04SB00601	mg/kg	0.08	NA	310	N	2900
N-Nitroso-di-n-propylamine	1/11	0.01	0.01	W04SB00601	mg/kg	0.01	NA	0.09	C	0.09
Phenanthrene	1/11	0.075	0.075	W04SB00301	mg/kg	0.075	NA	160[4]	N	2000
Pyrene	3/11	0.059	0.073	W04SB00601	mg/kg	0.073	NA	230	N	2200
Pesticides/PCBs										
4,4'-DDE	3/11	0.0019	0.063	W04SB01101	mg/kg	0.063	NA	1.9	C	3.3
4,4'-DDT	3/11	0.0017	0.036	W04SB01101	mg/kg	0.036	NA	1.9	C	3.3
Dieldrin	4/11	0.0004	0.085	W04SB01101	mg/kg	0.085	NA	0.04	C	0.07
Metals										
Aluminum	11/11	7580	27800	W04SB00901	mg/kg	27800	7924	7800	N	72000
Arsenic	9/11	0.92	5.5	W04SB00601	mg/kg	5.5	1.6	0.43	C	0.8
Barium	11/11	5.8	16.1	W04SB00701	mg/kg	16.1	11.6	550	N	110
Calcium	7/11	140	38000	W04SB00501	mg/kg	38000	198	NA	-	NA
Chromium	11/11	5.2	21.6	W04SB00601	mg/kg	21.6	5.5	23	N	210[5]
Cobalt	3/11	0.55	0.65	W04SB01101	mg/kg	0.65	1.5	470	N	4700
Copper	11/11	2.5	8.1	W04SB00601	mg/kg	8.1	4.7	310	N	110
Iron	11/11	3800	14800	W04SB00601	mg/kg	14800	4416	2300	N	23000
Lead	11/11	3.4	19.2	W04SB00601	mg/kg	19.2	5.7	400[6]	-	400[6]
Magnesium	10/11	75.6	827	W04SB00501	mg/kg	827	134	NA	-	NA
Manganese	11/11	23.2	161	W04SB00701	mg/kg	161	196	160	N	1600
Mercury	1/11	0.03	0.03	W04SB00401	mg/kg	0.03	0.06	2.3[7]	N	3.4
Nickel	11/11	1.2	3.3	W04SB00701	mg/kg	3.3	3.6	160	N	110
Potassium	10/10	50.3	160	W04SB00801	mg/kg	160	88.5	NA	-	NA
Vanadium	11/11	10.6	41.4	W04SB00601	mg/kg	41.4	10.9	55	N	15
Zinc	11/11	4.3	16.9	W04SB00701	mg/kg	16.9	7.7	2300	N	23000
Total Petroleum Hydrocarbons										
Tph (c8-c40)	8/11	6.68	166	W04SB00701	mg/kg	166	NA	NA	-	340

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998.
(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January 21, 1999.
(4) Value is for naphthalene.
(5) Value is for hexavalent chromium.
(6) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(7) Value is for mercuric chloride.
mg/kg - milligrams per kilogram.
NA - not available

statistical analysis of the data and background concentrations. Background concentrations are based on Troup loamy soil found at Site 4. USEPA Region III RBCs and the FDEP cleanup goals for residential soils are also presented in Table 5-6.

Volatile Organic Compounds

Five VOCs (acetone, carbon disulfide, ethylbenzene, toluene, and xylenes) were detected in up to 5 of 11 surface soil samples. Acetone (five detections) and xylenes (three detections) were the most frequently detected VOCs. Toluene was detected two times and the remaining VOCs were detected once each. The surface soil samples with the most VOC detections were W04SB00301 and W04SB00801 with four detections each. Detections at W04SB00301 ranged from 2 J µg/kg (ethylbenzene) to 11 J µg/kg (toluene). Detections at W04SB00801 ranged from 1 J µg/kg (carbon disulfide and toluene) to 85 J µg/kg (acetone). Surface soil sample W04SB00301 is located at the former USTs and W04SB00801 is located north of the former USTs.

Acetone was the VOC with the highest detected concentration (980 J µg/kg at W04SB01001). Acetone concentrations detected in surface soil samples at Site 4 ranged from 6 J µg/kg (W04SB00901) to 980 J µg/kg (W04SB01001). The VOC with the next highest concentration was toluene, 11 µg/kg at W04SB00301. No VOCs were detected at concentrations exceeding USEPA Region III RBCs or FDEP soil cleanup goals for residential soil. The distribution of VOCs in surface soil is shown in Figure 5-5.

Semivolatile Organic Compounds

Twelve SVOCs [anthracene, benzo(a)anthracene, benzo(a)pyrene, bis(2-ethylhexyl)phthlate, chrysene, di-n-butyl phthalate, di-n-octyl phthalate, dibenzo(a,h)anthracene, fluoranthene, n-nitroso-di-n-propylamine, phenanthrene, and pyrene] were detected in 9 of 11 surface soil samples. Bis(2-ethylhexyl)phthlate was the most frequently detected SVOC with seven detections. Four SVOCs [benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, and pyrene] had three detections each, benzo(a)anthracene and chrysene had two detections each, and the remaining SVOCs had one detection each.

The surface soil samples with the most SVOC detections (eight detections) and the highest concentrations were W04SB00301 and W04SB00601 located at the former USTs. Surface soil sample W04SB00701 located near the former USTs had the next highest number of detections (five detections). Six other surface soil samples had two or less SVOC detections.

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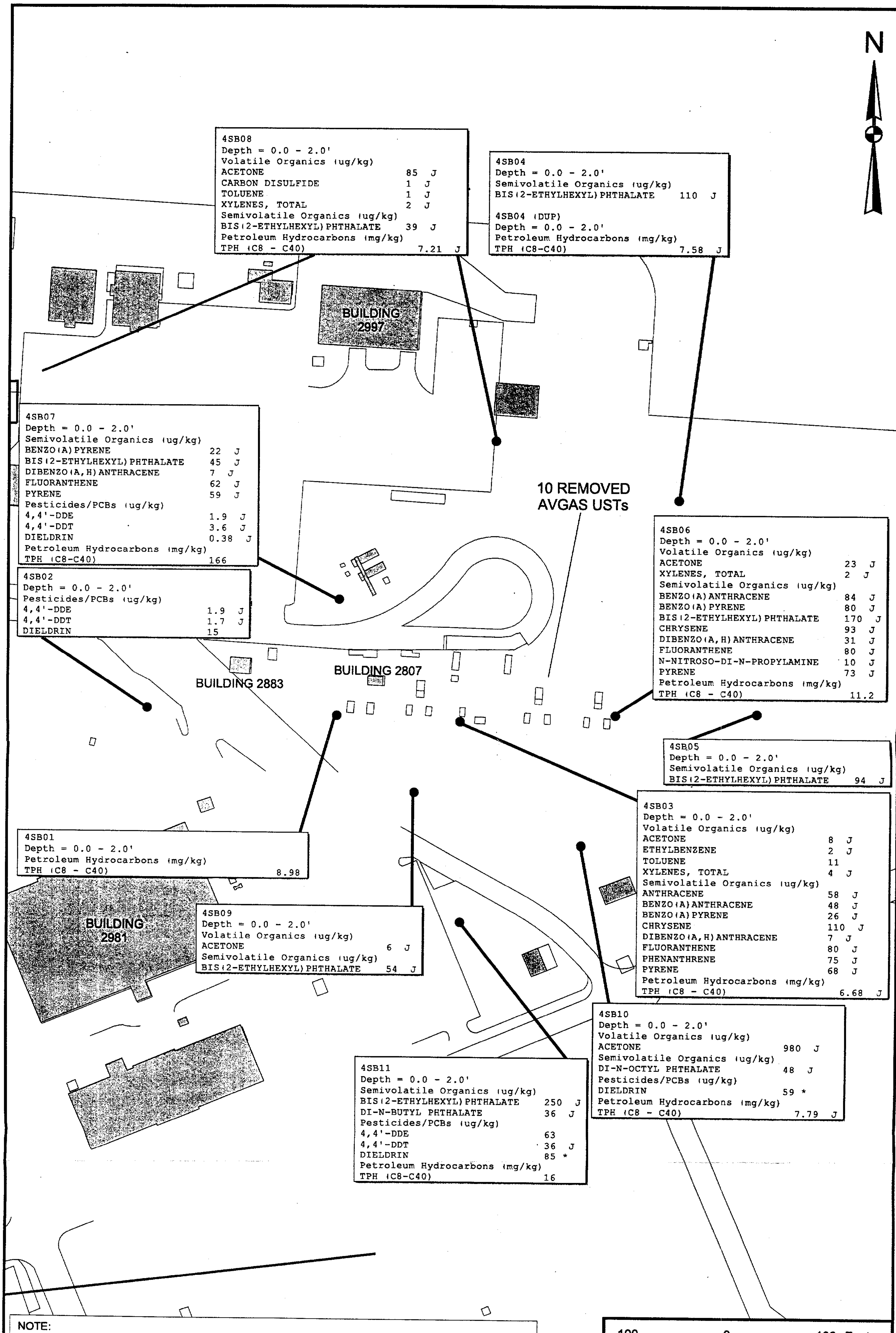

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99	ORGANICS IN SURFACE SOIL AT SITE 4 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE: AS NOTED			DRAWING NO. FIGURE 5-5 / REV 0

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Bis(2-ethylhexyl)phthalate was the SVOC with the highest concentration, 250 J μg/kg. Bis(2-ethylhexyl)phthalate concentrations ranged from 39 J μg/kg to 250 J μg/kg. No SVOCs were detected at concentrations exceeding USEPA Region III RBCs or FDEP cleanup goals for residential soil. The distribution of SVOCs in surface soil is shown in Figure 5-5.

Total Petroleum Hydrocarbons

TPH was detected in 8 of 11 surface soil samples. TPH concentrations ranged from 6.7 mg/kg at W04SB00301 to 166 mg/kg at W4SB00701. Surface soil sample W04SB00301 is located at the former USTs and W04SB00701 is located to the north of the former USTs. TPH concentrations in surface soil samples at Site 4 did not exceed the FDEP cleanup goal of 350 mg/kg for residential soil. The distribution of TPH in surface soil at Site 4 is presented in Figure 5-5.

Pesticides/PCBs

Three pesticide compounds (4,4'-DDE, 4,4'-DDT, and dieldrin) were detected in 4 of 11 surface soil samples. Dieldrin was detected four times at concentrations ranging from 0.4 J μg/kg at W04SB00701 to 85 μg/kg at W40SB01101. 4,4'-DDE and 4,4'-DDT were detected three times each. Three surface soil samples (W04SB00301, W04SB00701, and W04SB01101) had three pesticide detections each. All of the surface soil samples with pesticide detections are located at grassy areas. Dieldrin was the only pesticide compound detected above USEPA Region III RBCs (0.04 mg/kg) or FDEP cleanup goals (0.07 mg/kg) for residential soil. There were no PCB compounds detected in the surface soil samples at Site 4. The distribution of pesticide compounds in surface soil at Site 4 is presented in Figure 5-5.

Inorganics

Sixteen inorganic analytes were detected in eight of the surface soil samples. Ten of the inorganic analytes (aluminum, barium, chromium, copper, iron, lead, manganese, nickel, vanadium, and zinc) were detected in all of the samples. Eight non-nutrient analytes (aluminum, arsenic, chromium, copper, iron, lead, vanadium, and zinc) were detected above background concentrations for Troup soils. Three (aluminum, arsenic, and iron) of these analytes exceeded the USEPA Region III RBCs for residential soil. USEPA Region III RBCs for aluminum (7800 mg/kg), arsenic (0.43 mg/kg), and iron (2300 mg/kg) were exceeded in 9, 10, and 11 surface soil samples, respectively. Arsenic (10 samples) and vanadium (6 samples) also exceeded the FDEP residential soil cleanup goals of 0.8 mg/kg and 15 mg/kg, respectively. The distribution of inorganic analytes detected above background concentrations is shown in Figure 5-6.

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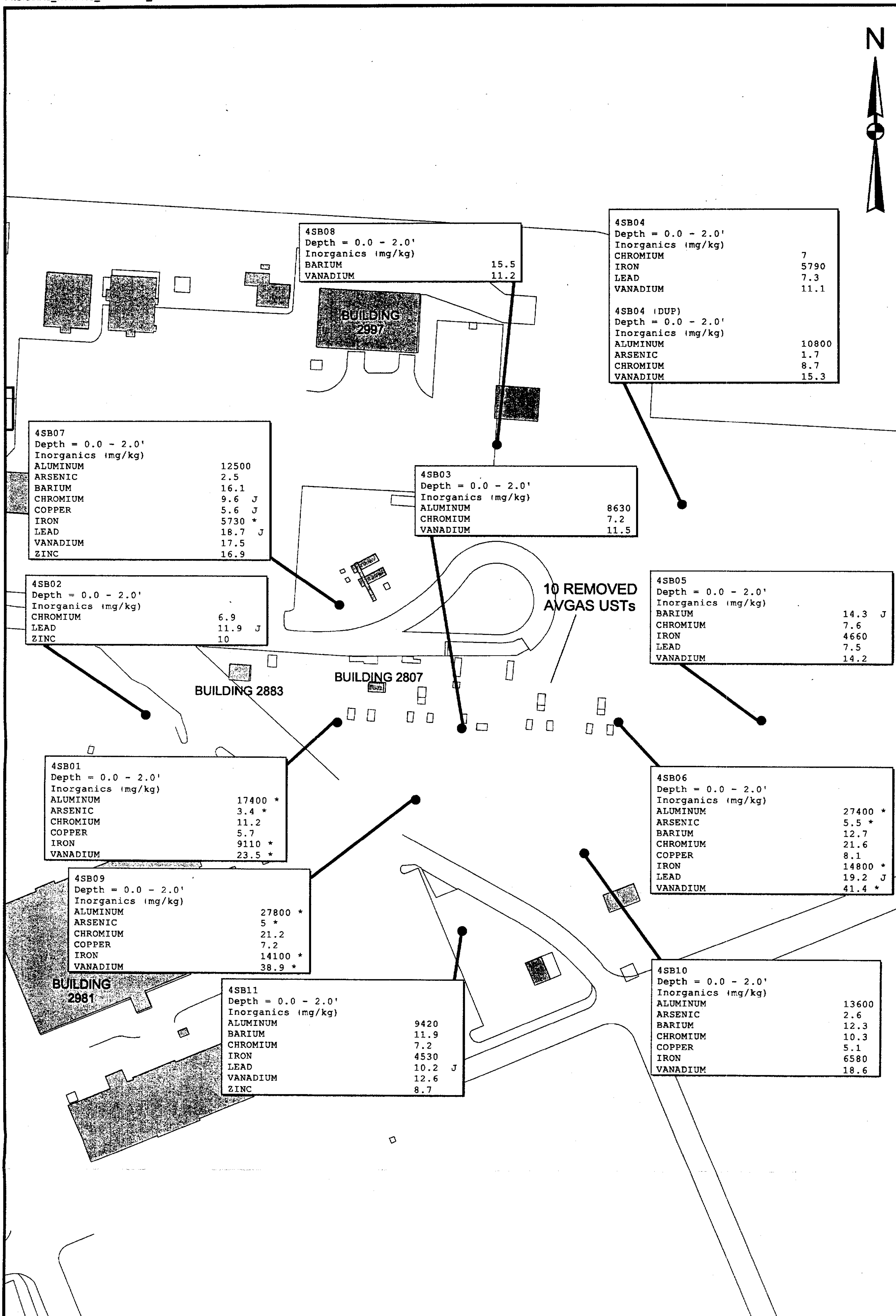

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY J. BELLONE	DATE 15-SEP-99	INORGANICS IN SURFACE SOIL AT SITE 4 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-6 REV 0

00241607Z

5.2.2.2 Subsurface Soil

Twenty-four subsurface soil samples and five duplicates were collected at Site 4 in 1998 and analyzed for VOCs, SVOCs, pesticides/PCBs, TPH, and metals. Subsurface soil sample locations are presented on Figure 3-1. Organic and inorganic analytical results are summarized in Table 5-7. Table 5-8 summarizes the statistical analysis of the data and background concentrations. Background concentrations are based on Troup loamy soil found at Site 4. USEPA Region III RBCs and the FDEP cleanup goals for industrial soils are also presented in Table 5-8.

Volatile Organic Compounds

Eight VOCs (acetone, benzene, carbon disulfide, chloromethane, ethylbenzene, methylene chloride, toluene, and xylenes) were detected in 18 of 24 subsurface soil samples and in 4 of the 5 subsurface soil duplicates. Acetone (12 detections) and xylenes (11 detections) were the most frequently detected VOCs. Ethylbenzene had eight detections, toluene had five detections, and the remaining VOCs were detected once each. The subsurface soil samples with the most VOC detections (four each) were W04SB00103 (45 to 47 feet bgs), W04SB00302-D (20 to 22 feet bgs), and W04SB00602 (18 to 20 feet bgs). Detections at W04SB00103 ranged from 770 μg/kg (benzene) to 1600 μg/kg (xylene), detections at W04SB00302-D ranged from 3 J μg/kg (carbon disulfide) to 280 μg/kg (xylene), and detections at W04SB00602 ranged from 17 J μg/kg (chloromethane) to 46,000 J μg/kg xylene. These three subsurface soil samples were all collected from borings at the former USTs.

Xylene was the VOC with the highest detected concentration (46,000 J μg/kg) at W04SB0602 (18 to 20 feet bgs). Xylene concentrations detected in subsurface soil samples at Site 4 ranged from 2 J μg/kg at W04SB00904 (35 to 37 feet bgs) to 46,000 J μg/kg at W04SB0602 (18 to 20 feet bgs). The VOC with the next highest concentration was toluene, 20,000 μg/kg at W04SB00602 (18 to 20 feet bgs). No VOCs were detected at concentrations exceeding USEPA Region III RBCs or FDEP cleanup goals for industrial soil. The distribution of VOCs in subsurface soil is shown in Figure 5-7.

Semivolatile Organic Compounds

Twenty-seven SVOCs were detected in 19 of 24 subsurface soil samples and 2 of the 5 subsurface soil duplicates at Site 4. Bis(2-ethylhexyl)phthlate was the most frequently detected SVOC with 15 detections. Fluoranthene (nine detections) was the next most frequently detected SVOC in subsurface soil samples followed by pyrene (eight detections) and benzo(a)pyrene (seven detections). Phenanthrene and n-nitro-di-n-propylamine each had six detections and the remaining SVOCs each had five or less detections. The subsurface soil samples with the most SVOC detections and the highest concentrations were

TABLE 5-7
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 4

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	W04SB00102 2/26/98 20 - 22'	W04SB00103 2/21/98 45 - 47'	W04SB00104 2/23/98 75 - 77'	W04SB00202 3/25/98 20 - 22'	W04SB00202-D 3/25/98 20 - 22'	W04SB00203 3/25/98 30 - 32'	W04SB00302 2/20/98 20 - 22'	W04SB00302-D 2/20/98 20 - 22'	W04SB00303 2/20/98 50 - 52'
VOLATILES (µg/kg)									
ACETONE						4 J	100 J	36 J	33 J
BENZENE		770							
CARBON DISULFIDE								3 J	
CHLOROMETHANE									
ETHYLBENZENE	4300 J	380 J					97	73	8 J
METHYLENE CHLORIDE			69 J						
TOLUENE	46	630 J							7 J
XYLENES, TOTAL	4700 J	1600					290	280	30
SEMIVOLATILES (µg/kg)									
2,4-DIMETHYLPHENOL									
2-METHYLNAPHTHALENE							89 J	390 J	
2-METHYLPHENOL		130 J							
4-METHYLPHENOL		150 J							
ACENAPHTHENE							640	1900	
ANTHRACENE	41 J						700	1600	
BENZO(A)ANTHRACENE	72 J						990	1900	
BENZO(A)PYRENE	48 J	19 J					490 J	1100 J	14 J
BENZO(B)FLUORANTHENE							420	1200	
BENZO(G,H,I)PERYLENE							110 J		
BENZO(K)FLUORANTHENE							510	590	
BIS(2-ETHYLHEXYL)PHTHALATE		130 J	210 J			370 J	140 J	290 J	71 J
CARBAZOLE	70 J						47 J	160 J	
CHRYSENE	59 J						560	940	
DI-N-BUTYL PHTHALATE						54 J			
DI-N-OCTYL PHTHALATE									
DIBENZO(A,H)ANTHRACENE	9 J						97 J	230	4 J
DIBENZOFURAN							230 J	700	
DIETHYL PHTHALATE			150 J						
FLUORANTHENE	190 J	59 J					3200	5000	94 J
FLUORENE							520	1300	
INDENO(1,2,3-CD)PYRENE							120 J		
N-NITROSO-DI-N-PROPYLAMINE	59	28					14 J	61	34
NAPHTHALENE							160 J	770	
PHENANTHRENE	140 J						3000	5000	99 J
PHENOL		48 J							
PYRENE	120 J	42 J					2900	4900	74 J
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
TPH (C8-C40)	118	9.71					179	137	10.4
METALS (mg/kg)									
ALUMINUM	12100	2230	754	4750	5780	2390	1700	2290	936
ARSENIC	2.2				1.2				
BARIUM	3.8		2.5	9.3	7.5	4.2			
CADMIUM									
CALCIUM					1040				
CHROMIUM	36.8	3.4	3.6	4.4	23.2	21.6	5.1	5.7	5.5
COPPER	3.7			1.5	4.2	0.67			
IRON	7540	446	134	1600	3180	289	1240	964	129
LEAD	8.8	3.8	3.4	3.6 J	4.2 J	1.4 J	3.1 J	3.9 J	1.3 J
MAGNESIUM				76.1	102				
MANGANESE	9.1	4.1		5.8	10.2	2.7	3.9	5.2	2.6
NICKEL	3.4				1.3	2.9			
POTASSIUM	73.2			262	148	75.8	44.3	61.5	47.6
VANADIUM	20.4	3.2	1.4	8	12.6	1.8	4.9	4.6	1.4
ZINC	2.7			1.2	2				

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TABLE 5-7
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	W04SB00304 2/20/98 85 - 87'	W04SB00402 3/24/98 22 - 24'	W04SB00403 3/24/98 35 - 37'	W04SB00502 3/24/98 28 - 30'	W04SB00602 2/18/98 18 - 20'	W04SB00603 2/19/98 50 - 52'	W04SB00604 2/19/98 65 - 67'	W04SB00702 3/11/98 12 - 14'	W04SB00702-D 3/11/98 12 - 14'	W04SB00802 2/23/98 24 - 26'
VOLATILES (µg/kg)										
ACETONE		410	18 J			17 J		210 J		
BENZENE										
CARBON DISULFIDE										
CHLOROMETHANE					17 J					
ETHYLBENZENE					13000 J		2 J	2100	3800	
METHYLENE CHLORIDE										
TOLUENE					20000 J		1 J			
XYLENES, TOTAL	3 J				46000 J	4 J	8	1200	2900	
SEMIVOLATILES (µg/kg)										
2,4-DIMETHYLPHENOL					42 J					
2-METHYLNAPHTHALENE					40 J			46 J	59 J	
2-METHYLPHENOL					310 J	47 J				
4-METHYLPHENOL					500	72 J				
ACENAPHTHENE					83 J					
ANTHRACENE					61 J					
BENZO(A)ANTHRACENE					76 J		43 J			
BENZO(A)PYRENE	4 J				56 J	10 J				
BENZO(B)FLUORANTHENE					46 J					
BENZO(G,H,I)PERYLENE										
BENZO(K)FLUORANTHENE					52 J		37 J			
BIS(2-ETHYLHEXYL)PHTHALATE		75 J	39 J	65 J		100 J	160 J		53 J	81 J
CARBAZOLE										
CHRYSENE					69 J		61 J			
DI-N-BUTYL PHTHALATE										
DI-N-OCTYL PHTHALATE										
DIBENZO(A,H)ANTHRACENE					15 J	5 J				
DIBENZOFURAN					51 J					
DIETHYL PHTHALATE										
FLUORANTHENE	51 J				240 J	80 J	150 J			
FLUORENE					79 J					
INDENO(1,2,3-CD)PYRENE										
N-NITROSO-DI-N-PROPYLAMINE					15 J			41	38	
NAPHTHALENE					50 J					
PHENANTHRENE					270 J	62 J	100 J			
PHENOL										
PYRENE	38 J				210 J	88 J	140 J			
TOTAL PETROLEUM HYDROCARBONS (mg/kg)										
TPH (C8-C40)					21.1	15.7 J	9.16	80.1	53.8	
METALS (mg/kg)										
ALUMINUM	366	822	471	701	8090	788	689	29600	27500	2120
ARSENIC								6.4	6.2	
BARIUM		0.81 J		0.84 J	13			6.9	7.4	
CADMIUM				0.19						
CALCIUM				153						
CHROMIUM	4.9	3.7	2.4	10.4	7.6	3.9	2.3	34.4 J	32.1 J	2.4
COPPER				1.6	2.1			7.3 J	7.1 J	
IRON	130	148	57.3	284	4010	301	166	17800	16600	183
LEAD	1	0.62	0.51	1.4	7.9 J	2.1 J	1.2 J	14.7 J	15.3 J	1 J
MAGNESIUM					73.3			99.4	103	
MANGANESE		1.3	0.67	2.2	14.8	5.6	4.1	19.1	17.9	2.3
NICKEL				1.8				2.5	5	
POTASSIUM		18.3	14.4	14.2	327			138	147	40.9
VANADIUM	1.3	2.1	1.4	0.87	14.7	1.4		52.6	49.8	2
ZINC				1.5				5.1	5.2	

TABLE 5-7
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 3 OF 4

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	W04SB00803 2/23/98 35 - 37'	W04SB00902 2/24/98 16 - 18'	W04SB00902-D 2/24/98 16 - 18'	W04SB00904 2/25/98 35 - 37'	W04SB00905 2/25/98 85 - 87'	W04SB01003 2/24/98 28 - 30'	W04SB01004 2/24/98 40 - 42'	W04SB01102 3/25/98 28 - 30'	W04SB01102-D 3/26/98 28 - 30'	W04SB01103 3/25/98 35 - 37'
VOLATILES (µg/kg)										
ACETONE	220 J	860 J	410 J			28 J	53 J		10	
BENZENE										
CARBON DISULFIDE										
CHLOROMETHANE										
ETHYLBENZENE		560	310							
METHYLENE CHLORIDE										
TOLUENE										
XYLENES, TOTAL		450	280	2 J						
SEMIVOLATILES (µg/kg)										
2,4-DIMETHYLPHENOL										
2-METHYLNAPHTHALENE										
2-METHYLPHENOL										
4-METHYLPHENOL										
ACENAPHTHENE										
ANTHRACENE										
BENZO(A)ANTHRACENE										
BENZO(A)PYRENE										
BENZO(B)FLUORANTHENE										
BENZO(G,H,I)PERYLENE										
BENZO(K)FLUORANTHENE										
BIS(2-ETHYLHEXYL)PHTHALATE	110 J					270 J	330 J			
CARBAZOLE										
CHRYSENE										
DI-N-BUTYL PHTHALATE	130 J									
DI-N-OCTYL PHTHALATE						240 J				
DIBENZO(A,H)ANTHRACENE										
DIBENZOFURAN										
DIETHYL PHTHALATE										
FLUORANTHENE					43 J					
FLUORENE										
INDENO(1,2,3-CD)PYRENE										
N-NITROSO-DI-N-PROPYLAMINE										
NAPHTHALENE										
PHENANTHRENE										
PHENOL										
PYRENE										
TOTAL PETROLEUM HYDROCARBONS (mg/kg)										
TPH (C8-C40)		8.84 J	12	9.85	15.1					
METALS (mg/kg)										
ALUMINUM	2010	27700	22100	1840	878	3210	1640	2350	2990	2230
ARSENIC		6.4	5							
BARIUM		6.2	5.2			3.9		2.4	6	1.8
CADMIUM										
CALCIUM										
CHROMIUM	10.5	27.3	34	4.1	5.5	3.9	31	1.8	2.3	3.5
COPPER		6.9	9							0.55
IRON	238	22400	14700	97.6	151	292	419	112	286	84
LEAD	1.3 J	5.3 J	5.2 J	1	1.2	2.2 J	1.2 J	1 J	1.8 J	1.2 J
MAGNESIUM		71.6	54.6			60.9			63.9	
MANGANESE	2.1	116	10.2	1.4	2	5.3	5.5	1.4	1.8	
NICKEL	1.4	1.4	1.3				2.5			
POTASSIUM	39	91.4	76.7			93.1	38	39.6	81.5	
VANADIUM	2.2	47.7	40.8	1.3	1.5	2.4	1.4	1.3	3	0.85
ZINC		3.3	4.5	4.2			7.2	2.7	2.7	2.2

TABLE 5-7
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 4 OF 4

Notes:

The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-8
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value [1]	Screening Toxicity Value		
								Region III RBC [2]		Florida [3]
								Soil Industrial	Soil Basis	Soil Industrial
Volatiles										
Acetone	12/24	0.004	0.86	mg/kg	W04SB00902	0.86	NA	20000	N	5500
Benzene	1/24	0.77	0.77	mg/kg	W04SB00103	0.77	NA	200	C	1.6
Carbon Disulfide	1/24	0.003	0.003	mg/kg	W04SB00302-D	0.003	NA	20000	N	1400
Chloromethane	1/24	0.017	0.017	mg/kg	W04SB00602	0.017	NA	440	C	2.3
Ethylbenzene	8/24	0.002	13	mg/kg	W04SB00602	13	NA	20000	N	8400
Methylene Chloride	1/24	0.069	0.069	mg/kg	W04SB00104	0.069	NA	760	C	23
Toluene	5/24	0.001	20	mg/kg	W04SB00602	20	NA	41000	N	2600
Xylenes, Total	11/24	0.002	46	mg/kg	W04SB00602	46	NA	410000	N	40000
Semivolatiles										
2,4-Dimethylphenol	1/24	0.042	0.042	mg/kg	W04SB00602	0.042	NA	4100	N	9800
2-Methylnaphthalene	3/24	0.04	0.39	mg/kg	W04SB00302-D	0.39	NA	4100	N	560
2-Methylphenol	3/24	0.047	0.31	mg/kg	W04SB00602	0.31	NA	10000	N	28000
4-Methylphenol	3/24	0.072	0.5	mg/kg	W04SB00602	0.5	NA	1000	N	3000
Acenaphthene	2/24	0.083	1.9	mg/kg	W04SB00302-D	1.9	NA	12000	N	18000
Anthracene	3/24	0.041	1.6	mg/kg	W04SB00302-D	1.6	NA	61000	N	260000
Benzo(a)anthracene	4/24	0.043	1.9	mg/kg	W04SB00302-D	1.9	NA	7.8	C	5
Benzo(a)pyrene	7/24	0.004	1.1	mg/kg	W04SB00302-D	1.1	NA	0.78	C	0.5
Benzo(b)fluoranthene	2/24	0.046	1.2	mg/kg	W04SB00302-D	1.2	NA	7.8	C	4.8
Benzo(g,h,i)perylene	1/24	0.11	0.11	mg/kg	W04SB00302	0.11	NA	NA	-	41000
Benzo(k)fluoranthene	3/24	0.037	0.59	mg/kg	W04SB00302-D	0.59	NA	78	C	52
Bis(2-Ethylhexyl)phthalate	15/24	0.039	0.37	mg/kg	W04SB00203	0.37	NA	410	C	280
Carbazole	2/24	0.047	0.16	mg/kg	W04SB00302-D	0.16	NA	290	C	190
Chrysene	4/24	0.059	0.94	mg/kg	W04SB00302-D	0.94	NA	780	C	450
Di-n-butyl phthalate	2/24	0.054	0.13	mg/kg	W04SB00803	0.13	NA	20000	N	140000
Di-n-octyl phthalate	1/24	0.24	0.24	mg/kg	W04SB01003	0.24	NA	4100	N	27000
Dibenzo(a,h)anthracene	5/24	0.004	0.23	mg/kg	W04SB00302-D	0.23	NA	0.78	C	0.5
Dibenzofuran	2/24	0.051	0.7	mg/kg	W04SB00302-D	0.7	NA	820	N	5000
Diethyl Phthalate	1/24	0.15	0.15	mg/kg	W04SB00104	0.15	NA	160000	N	920000
Fluoranthene	9/24	0.043	5	mg/kg	W04SB00302-D	5	NA	8200	N	48000
Fluorene	2/24	0.079	1.3	mg/kg	W04SB00302-D	1.3	NA	8200	N	28000
Indeno(1,2,3-cd)pyrene	1/24	0.12	0.12	mg/kg	W04SB00302	0.12	NA	7.8	C	5.3
N-Nitroso-di-n-propylamine	6/24	0.014	0.061	mg/kg	W04SB00302-D	0.061	NA	0.82	C	0.2
Naphthalene	2/24	0.05	0.77	mg/kg	W04SB00302-D	0.77	NA	4100	N	270
Phenanthrene	6/24	0.062	5	mg/kg	W04SB00302-D	5	NA	4100[4]	N	30000
Phenol	1/24	0.048	0.048	mg/kg	W04SB00103	0.048	NA	100000	N	390000
Pyrene	8/24	0.038	4.9	mg/kg	W04SB00302-D	4.9	NA	6100	N	37000

TABLE 5-8
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value (1)	Screening Toxicity Value		
								Region III RBC (2)		Florida (3)
								Soil Industrial	Soil Basis	Soil Industrial
Metals										
Aluminum	24/24	366	29600	mg/kg	W04SB00702	29600	13917	100000	N	NA
Arsenic	4/24	1.2	6.4	mg/kg	W04SB00702	6.4	3.1	3.8	C	3.7
Arsenic	4/24	1.2	6.4	mg/kg	W04SB00902	6.4	3.1	3.8	C	3.7
Barium	12/24	0.81	13	mg/kg	W04SB00602	13	7.9	14000	N	87000
Cadmium	1/24	0.19	0.19	mg/kg	W04SB00502	0.19	0.46	100	N	1300
Calcium	2/24	153	1040	mg/kg	W04SB00202-D	1040	222	NA	-	NA
Chromium	24/24	1.8	36.8	mg/kg	W04SB00102	36.8	11.4	610(5)	N	420(5)
Copper	8/24	0.55	9	mg/kg	W04SB00902-D	9	4.4	8200	N	73000
Iron	24/24	57.3	22400	mg/kg	W04SB00902	22400	9055	61000	N	480000
Lead	24/24	0.51	15.3	mg/kg	W04SB00702-D	15.3	4.2	400(6)	-	920(6)
Magnesium	6/24	54.6	103	mg/kg	W04SB00702-D	103	136	NA	-	NA
Manganese	21/24	0.67	116	mg/kg	W04SB00902	116	21.3	4700	N	22000
Nickel	8/24	1.3	5	mg/kg	W04SB00702-D	5	2.5	4100	N	28000
Potassium	16/24	14.2	327	mg/kg	W04SB00602	327	90.5	NA	-	NA
Vanadium	23/24	0.85	52.6	mg/kg	W04SB00702	52.6	22.5	1400	N	7400
Zinc	9/24	1.2	7.2	mg/kg	W04SB01004	7.2	7.8	61000	N	560000
Total Petroleum Hydrocarbons										
TPH (c8-c40)	11/24	8.84	179	mg/kg	W04SB00302	179	NA	NA	-	2500

Notes:

(1) TABLE 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998.

(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for non-carcinogens).

(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C. January 21, 1999.

(4) Value is for naphthalene.

(5) Value is for hexavalent chromium.

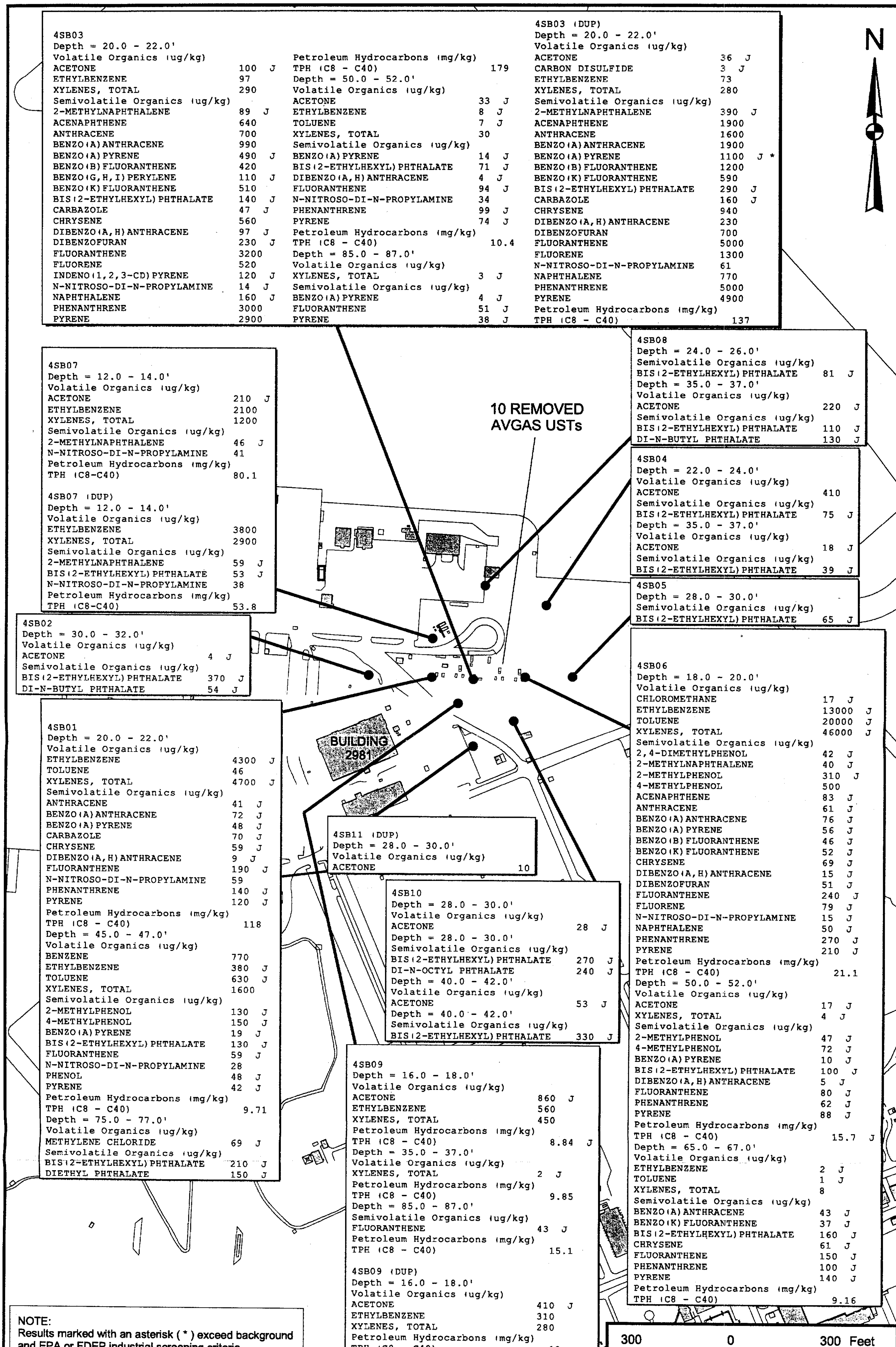
(6) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

J - estimated value.

mg/kg - milligrams per kilogram.

NA - not available

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 12-MAY-99 DNP ORGANICS IN SUBSURFACE SOIL - SITE 4 LAYOUT



4SB03

Depth = 20.0 - 22.0'		
Volatile Organics (ug/kg)		
ACETONE	100	J
ETHYLBENZENE	97	
XYLENES, TOTAL	290	
Semivolatile Organics (ug/kg)		
2-METHYLNAPHTHALENE	89	J
ACENAPHTHENE	640	
ANTHRACENE	700	
BENZO(A)ANTHRACENE	990	
BENZO(A)PYRENE	490	J
BENZO(B)FLUORANTHENE	420	
BENZO(G,H,I)PERYLENE	110	J
BENZO(K)FLUORANTHENE	510	
BIS(2-ETHYLHEXYL)PHTHALATE	140	J
CARBAZOLE	47	J
CHRYSENE	560	
DIBENZO(A,H)ANTHRACENE	97	J
DIBENZOFURAN	230	J
FLUORANTHENE	3200	
FLUORENE	520	
INDENO(1,2,3-CD)PYRENE	120	J
N-NITROSO-DI-N-PROPYLAMINE	14	J
NAPHTHALENE	160	J
PHENANTHRENE	3000	
PYRENE	2900	
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	179	
Depth = 50.0 - 52.0'		
Volatile Organics (ug/kg)		
ACETONE	33	J
ETHYLBENZENE	8	J
TOLUENE	7	J
XYLENES, TOTAL	30	
Semivolatile Organics (ug/kg)		
BENZO(A)PYRENE	14	J
BIS(2-ETHYLHEXYL)PHTHALATE	71	J
DIBENZO(A,H)ANTHRACENE	4	J
FLUORANTHENE	94	J
N-NITROSO-DI-N-PROPYLAMINE	34	
PHENANTHRENE	99	J
PYRENE	74	J
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	10.4	
Depth = 85.0 - 87.0'		
Volatile Organics (ug/kg)		
XYLENES, TOTAL	3	J
Semivolatile Organics (ug/kg)		
BENZO(A)PYRENE	4	J
FLUORANTHENE	51	J
PYRENE	38	J

4SB03 (DUP)

Depth = 20.0 - 22.0'		
Volatile Organics (ug/kg)		
ACETONE	36	J
CARBON DISULFIDE	3	J
ETHYLBENZENE	73	
XYLENES, TOTAL	280	
Semivolatile Organics (ug/kg)		
2-METHYLNAPHTHALENE	390	J
ACENAPHTHENE	1900	
ANTHRACENE	1600	
BENZO(A)ANTHRACENE	1900	
BENZO(A)PYRENE	1100	J *
BENZO(B)FLUORANTHENE	1200	
BENZO(K)FLUORANTHENE	590	
BIS(2-ETHYLHEXYL)PHTHALATE	290	J
CARBAZOLE	160	J
CHRYSENE	940	
DIBENZO(A,H)ANTHRACENE	230	
DIBENZOFURAN	700	
FLUORANTHENE	5000	
FLUORENE	1300	
N-NITROSO-DI-N-PROPYLAMINE	61	
NAPHTHALENE	770	
PHENANTHRENE	5000	
PYRENE	4900	
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	137	

4SB08

Depth = 24.0 - 26.0'		
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	81	J
Depth = 35.0 - 37.0'		
Volatile Organics (ug/kg)		
ACETONE	220	J
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	110	J
DI-N-BUTYL PHTHALATE	130	J

4SB07

Depth = 12.0 - 14.0'		
Volatile Organics (ug/kg)		
ACETONE	210	J
ETHYLBENZENE	2100	
XYLENES, TOTAL	1200	
Semivolatile Organics (ug/kg)		
2-METHYLNAPHTHALENE	46	J
N-NITROSO-DI-N-PROPYLAMINE	41	
Petroleum Hydrocarbons (mg/kg)		
TPH (C8-C40)	80.1	

4SB07 (DUP)

Depth = 12.0 - 14.0'		
Volatile Organics (ug/kg)		
ETHYLBENZENE	3800	
XYLENES, TOTAL	2900	
Semivolatile Organics (ug/kg)		
2-METHYLNAPHTHALENE	59	J
BIS(2-ETHYLHEXYL)PHTHALATE	53	J
N-NITROSO-DI-N-PROPYLAMINE	38	
Petroleum Hydrocarbons (mg/kg)		
TPH (C8-C40)	53.8	

4SB04

Depth = 22.0 - 24.0'		
Volatile Organics (ug/kg)		
ACETONE	410	
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	75	J
Depth = 35.0 - 37.0'		
Volatile Organics (ug/kg)		
ACETONE	18	J
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	39	J

4SB05

Depth = 28.0 - 30.0'		
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	65	J

4SB02

Depth = 30.0 - 32.0'		
Volatile Organics (ug/kg)		
ACETONE	4	J
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	370	J
DI-N-BUTYL PHTHALATE	54	J

4SB06

Depth = 18.0 - 20.0'		
Volatile Organics (ug/kg)		
CHLOROMETHANE	17	J
ETHYLBENZENE	13000	J
TOLUENE	20000	J
XYLENES, TOTAL	46000	J
Semivolatile Organics (ug/kg)		
2,4-DIMETHYLPHENOL	42	J
2-METHYLNAPHTHALENE	40	J
2-METHYLPHENOL	310	J
4-METHYLPHENOL	500	
ACENAPHTHENE	83	J
ANTHRACENE	61	J
BENZO(A)ANTHRACENE	76	J
BENZO(A)PYRENE	56	J
BENZO(B)FLUORANTHENE	46	J
BENZO(K)FLUORANTHENE	52	J
CHRYSENE	69	J
DIBENZO(A,H)ANTHRACENE	15	J
DIBENZOFURAN	51	J
FLUORANTHENE	240	J
FLUORENE	79	J
N-NITROSO-DI-N-PROPYLAMINE	15	J
NAPHTHALENE	50	J
PHENANTHRENE	270	J
PYRENE	210	J
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	21.1	
Depth = 50.0 - 52.0'		
Volatile Organics (ug/kg)		
ACETONE	17	J
XYLENES, TOTAL	4	J
Semivolatile Organics (ug/kg)		
2-METHYLPHENOL	47	J
4-METHYLPHENOL	72	J
BENZO(A)PYRENE	10	J
BIS(2-ETHYLHEXYL)PHTHALATE	100	J
DIBENZO(A,H)ANTHRACENE	5	J
FLUORANTHENE	80	J
PHENANTHRENE	62	J
PYRENE	88	J
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	15.7	J
Depth = 65.0 - 67.0'		
Volatile Organics (ug/kg)		
ETHYLBENZENE	2	J
TOLUENE	1	J
XYLENES, TOTAL	8	
Semivolatile Organics (ug/kg)		
BENZO(A)ANTHRACENE	43	J
BENZO(K)FLUORANTHENE	37	J
BIS(2-ETHYLHEXYL)PHTHALATE	160	J
CHRYSENE	61	J
FLUORANTHENE	150	J
PHENANTHRENE	100	J
PYRENE	140	J
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	9.16	

4SB01

Depth = 20.0 - 22.0'		
Volatile Organics (ug/kg)		
ETHYLBENZENE	4300	J
TOLUENE	46	
XYLENES, TOTAL	4700	J
Semivolatile Organics (ug/kg)		
ANTHRACENE	41	J
BENZO(A)ANTHRACENE	72	J
BENZO(A)PYRENE	48	J
CARBAZOLE	70	J
CHRYSENE	59	J
DIBENZO(A,H)ANTHRACENE	9	J
FLUORANTHENE	190	J
N-NITROSO-DI-N-PROPYLAMINE	59	
PHENANTHRENE	140	J
PYRENE	120	J
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	118	
Depth = 45.0 - 47.0'		
Volatile Organics (ug/kg)		
BENZENE	770	
ETHYLBENZENE	380	J
TOLUENE	630	J
XYLENES, TOTAL	1600	
Semivolatile Organics (ug/kg)		
2-METHYLPHENOL	130	J
4-METHYLPHENOL	150	J
BENZO(A)PYRENE	19	J
BIS(2-ETHYLHEXYL)PHTHALATE	130	J
FLUORANTHENE	59	J
N-NITROSO-DI-N-PROPYLAMINE	28	
PHENOL	48	J
PYRENE	42	J
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	9.71	
Depth = 75.0 - 77.0'		
Volatile Organics (ug/kg)		
METHYLENE CHLORIDE	69	J
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	210	J
DIETHYL PHTHALATE	150	J

4SB11 (DUP)

Depth = 28.0 - 30.0'		
Volatile Organics (ug/kg)		
ACETONE	10	

4SB10

Depth = 28.0 - 30.0'		
Volatile Organics (ug/kg)		
ACETONE	28	J
Depth = 28.0 - 30.0'		
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	270	J
DI-N-OCTYL PHTHALATE	240	J
Depth = 40.0 - 42.0'		
Volatile Organics (ug/kg)		
ACETONE	53	J
Depth = 40.0 - 42.0'		
Semivolatile Organics (ug/kg)		
BIS(2-ETHYLHEXYL)PHTHALATE	330	J

4SB09

Depth = 16.0 - 18.0'		
Volatile Organics (ug/kg)		
ACETONE	860	J
ETHYLBENZENE	560	
XYLENES, TOTAL	450	
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	8.84	J
Depth = 35.0 - 37.0'		
Volatile Organics (ug/kg)		
XYLENES, TOTAL	2	J
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	9.85	
Depth = 85.0 - 87.0'		
Semivolatile Organics (ug/kg)		
FLUORANTHENE	43	J
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	15.1	

4SB09 (DUP)

Depth = 16.0 - 18.0'		
Volatile Organics (ug/kg)		
ACETONE	410	J
ETHYLBENZENE	310	
XYLENES, TOTAL	280	
Petroleum Hydrocarbons (mg/kg)		
TPH (C8 - C40)	12	

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99	CONTRACT NUMBER	
CHECKED BY	DATE	APPROVED BY	DATE
COST/SCHEDULE-AREA		APPROVED BY	DATE
SCALE: AS NOTED		DRAWING NO. FIGURE 5-7	REV 0

ORGANICS IN SUBSURFACE SOIL AT SITE 4
NAS WHITING FIELD, MILTON, FLORIDA

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W04SB00302 at 20 to 22 feet bgs (20 detections) and W04SB00602 at 18 to 20 feet bgs (19 detections) located at the former USTs. The subsurface soil sample with the next highest number of SVOC detections was W04SB00102 at 20 to 22 feet bgs with 10 detections. Subsurface soil samples W04SB00103 at 45 to 47 feet bgs and W04SB00603 at 50 to 52 feet bgs both had eight SVOC detections. The remaining subsurface soil samples had seven or less SVOC detections. All of the subsurface soil samples with seven or more SVOC detections were collected from soil borings located at the former USTs.

Fluoranthene and phenanthrene, both with concentrations of 5000 μg/kg and both detected at W04SB00302-D (20 to 22 feet bgs), were the SVOCs with the highest concentrations. Fluoranthene concentrations ranged from 43 J μg/kg (W04SB00905 at 85 to 87 feet bgs) to 5000 μg/kg (W04SB00302-D at 20 to 22 feet bgs). Phenanthrene concentrations ranged from 62 J μg/kg (W04SB00603 at 50 to 52 feet/bgs) to 5000 μg/kg (W04SB00302-D at 20 to 22 feet bgs). The SVOCs detected in the subsurface soil samples at Site 4 at the greatest frequency and highest concentrations were from soil borings 4SB01, 4SB03, and 4SB06 all located at the former USTs. The majority of SVOCs detected in Site 4 subsurface soil samples are fuel-related compounds.

Benzo(a)pyrene at 1100 J μg/kg (W04SB00302-D at 20 to 22 feet bgs) was the only SVOC detected in subsurface soil exceeding the USEPA Region III RBC (780 μg/kg) or FDEP cleanup goals (500 μg/kg) for industrial soil. The distribution of SVOCs in subsurface soil is shown in Figure 5-7.

Total Petroleum Hydrocarbons

TPH was detected in 11 of 24 subsurface soil samples and 3 of 5 subsurface soil duplicates. TPH concentrations ranged from 8.8 J mg/kg at W04SB00902 (16 to 18 feet bgs) to 179 mg/kg at W4SB00302 (20 to 22 feet bgs). Surface soil sample W04SB00302 is located at the former USTs. TPH concentrations in subsurface soil samples at Site 4 did not exceed the FDEP cleanup goal of 2500 mg/kg for industrial soil. The distribution of TPH in subsurface soil at Site 4 is presented in Figure 5-7.

Pesticides/PCBs

There were no pesticide or PCB compounds detected in the surface soil samples at Site 4.

Inorganics

Sixteen inorganic analytes were detected in the subsurface soil samples at Site 4. Four of the inorganic analytes (aluminum, chromium, iron, and lead) were detected in all of the samples. Ten non-nutrient analytes (aluminum, arsenic, barium, chromium, copper, iron, lead, manganese, nickel, and vanadium) were detected above background concentrations for Troup soils. Arsenic was the only inorganic analyte to exceed the USEPA Region III RBCs (3.8 mg/kg) and FDEP cleanup goals (3.7 mg/kg) for industrial soil. Arsenic exceeded these screening criteria in two subsurface soil samples (W04SB00702 at 12 to 14 feet bgs and W04SB00902 at 16 to 18 feet bgs) and their duplicates. The distribution of inorganic analytes detected above background concentrations in subsurface soil samples at Site 4 is shown in Figure 5-8.

5.2.2.3 Summary

Chemicals detected in surface and subsurface soil samples at Site 4 included VOCs, SVOCs, and inorganics. Pesticide compounds were detected only in surface soil samples at Site 4. With the exception of the pesticide compounds, these chemicals are most frequently detected and usually at their highest concentrations in soil samples collected from soil borings 4SB01, 4SB03, and 4SB06 located at the former USTs.

No VOCs exceeded regulatory criteria in either surface or subsurface soil samples at Site 4. Benzo(a)pyrene was the only SVOC exceeding USEPA Region III RBCs or FDEP cleanup goals for residential and industrial soil at Site 4. Dieldrin, aluminum, arsenic, and vanadium exceeded the USEPA Region III RBCs for residential soil. Arsenic and vanadium also exceeded the FDEP cleanup goals for residential soil. Arsenic was the only chemical other than benzo(a)pyrene to exceed the USEPA Region III RBCs and FDEP cleanup goals for industrial soil.

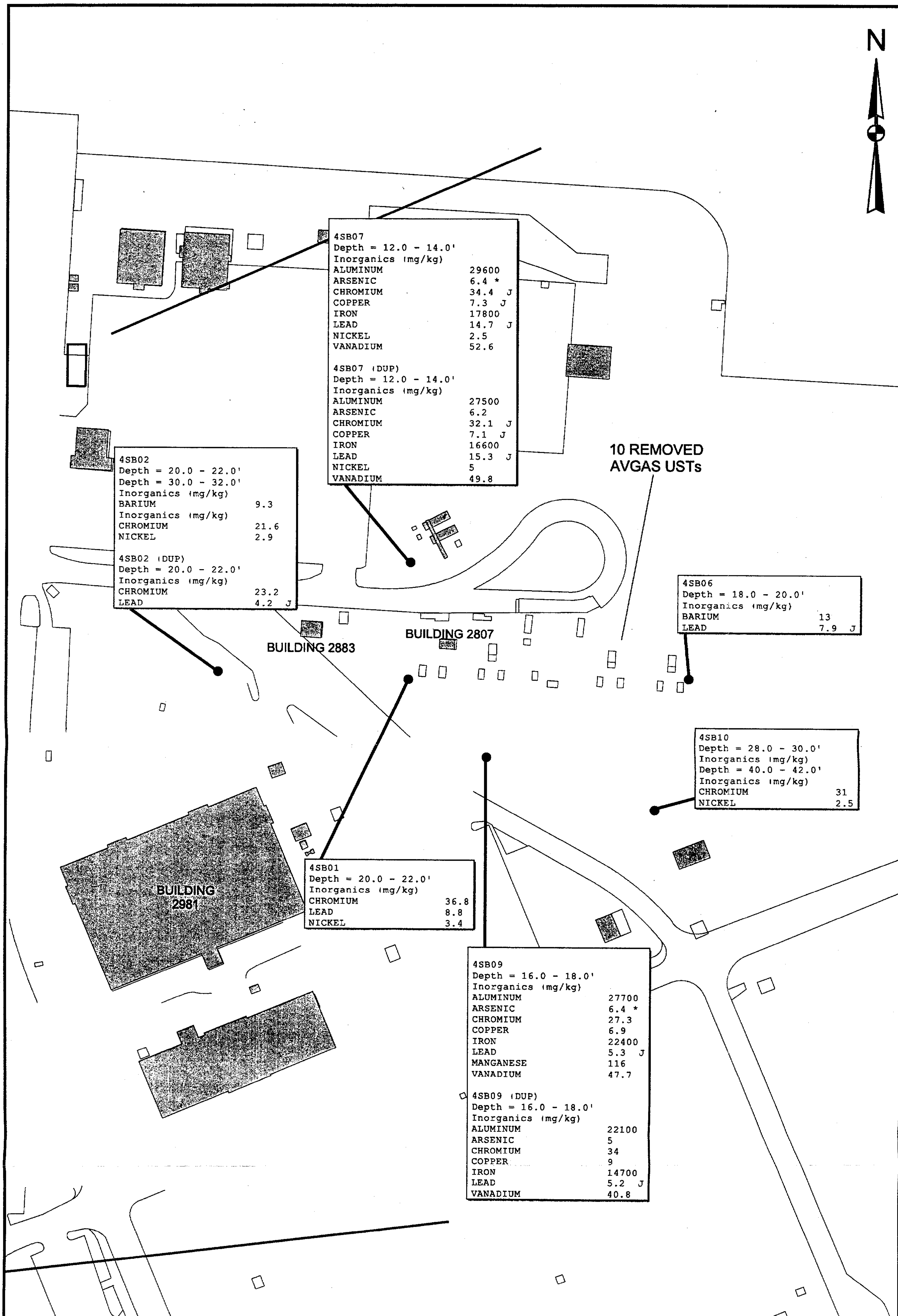
5.2.3 Site 6

Surface and subsurface soil at Site 6 was investigated in 1992 by ABB-ES with the installation of four soil borings. No additional soil investigation has taken place at the site.

5.2.3.1 Surface Soil

Three surface soil samples and one duplicate sample were collected at Site 6 in 1992. The soil samples were analyzed for VOCs, TPH, SVOCs, pesticides/PCBs, and metals. Surface soil sample locations are

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 12-MAY-99 DNP INORGANICS IN SUBSURFACE SOIL - SITE 4 LAYOUT



NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY J. BELLONE	DATE 15-SEP-99	INORGANICS IN SUBSURFACE SOIL AT SITE 4	CONTRACT NUMBER
CHECKED BY	DATE	NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-8 / REV 0

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presented on Figure 3-2. Surface soil analytical results are summarized in Table 5-9. Table 5-10 summarizes the statistical analysis of the data and presents background concentrations. Background concentrations are based on Troup loamy soil and Dothan/Lucy/Bonifay soil found at Site 6. USEPA Region III residential RBCs for soils and the FDEP residential soil cleanup goals are also presented on Table 5-10.

Volatile Organic Compounds

One VOC (2-butanone) was detected at an estimated concentration of 4 μg/kg in sample 6SB4-0-2. The detected concentration was below the Florida residential cleanup goals for soil of 4,800 μg/kg. Figure 5-9 shows the VOC detection in the surface soil.

Semivolatile Organic Compounds

Nineteen SVOCs were detected in surface soil samples at Site 6. All 19 compounds were detected only in sample 6SB3-0-2 and associated duplicate sample 6SB3-0-2D. Sample 6SB03 is located at the end of a concrete flume, directing storm water runoff away from the Midfield Maintenance Hanger (Site 33).

SVOC concentrations ranged from an estimated 47 μg/kg of dibenzofuran to 2,600 μg/kg of fluoranthene. Five compounds, benzo(a)anthracene (1,900 μg/kg), benzo(a)pyrene (1,900 μg/kg), benzo(b)fluoranthene (2,100 μg/kg), dibenzo(a,h)anthracene (200 μg/kg), and indeno(1,2,3-cd)pyrene (1,600 μg/kg), were detected at concentrations exceeding their respective FDEP residential soil cleanup goals and USEPA Region III RBCs. Benzo(a)pyrene also exceeded the FDEP industrial cleanup goal of 500 μg/kg and USEPA industrial RBC of 780 μg/kg. The SVOC detections in the surface soil are presented on Figure 5-9.

Total Petroleum Hydrocarbons

TPH analysis was performed on one sample (6SB4-0-2) at Site 6. The sample, located on the north edge of the site, contained a concentration of 3,580 mg/kg exceeding the FDEP residential cleanup goals for soil of 350 mg/kg. The distribution of TPH in the surface soil is displayed on Figure 5-9.

Pesticides/PCBs

Four pesticide/PCB compounds, 4,4'-DDD, 4,4'-DDE, dieldren, and Aroclor-1260, were detected in the surface soil at Site 6. All four compounds were detected only at 6SB4-0-2. Concentrations ranged from

TABLE 5-9
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	6SB2-0-2 12/4/92 0 - 2'	6SB3-0-2 12/5/92 0 - 2'	6SB3-0-2-D 12/5/92 0 - 2'	6SB4-0-2 12/4/92 0 - 2'
VOLATILES (µg/kg)				
2-BUTANONE				4 J
SEMIVOLATILES (µg/kg)				
2-METHYLNAPHTHALENE			48 J	
ACENAPHTHENE		120 J	190 J	
ANTHRACENE		140 J	160 J	
BENZO(A)ANTHRACENE		1400	1900	
BENZO(A)PYRENE		1600	1900	
BENZO(B)FLUORANTHENE		2100	2000	
BENZO(G,H,I)PERYLENE		1100	960	
BENZO(K)FLUORANTHENE		1500	1700	
BIS(2-ETHYLHEXYL)PHTHALATE		1300	840	
BUTYLBENZYL PHTHALATE		150 J	260 J	
CARBAZOLE		260 J	300 J	
CHRYSENE		1700	2100	
DIBENZO(A,H)ANTHRACENE		53 J	200 J	
DIBENZOFURAN		47 J	67 J	
FLUORANTHENE		2400	2600	
FLUORENE		90 J	140 J	
INDENO(1,2,3-CD)PYRENE		1600	1400	
PHENANTHRENE		1200	1500	
PYRENE		2000	2100	
PESTICIDES/PCBs (µg/kg)				
4,4'-DDD				130 J
4,4'-DDE				24 J
AROCLOR-1260				600 J
DIELDRIN				30 J
TOTAL PETROLEUM HYDROCARBONS (mg/kg)				
TOTAL PETROLEUM HYDROCARBONS				3580
METALS (mg/kg)				
ALUMINUM	20200	11800	8460	29100
ARSENIC	2.1 J	3.5	2.2 J	3.4
BARIUM	19.4 J	14.4 J	13.8 J	11.2 J
BERYLLIUM	0.37 J	0.25 J	0.19 J	
CADMIUM	0.75 J	1.9	2	2.1
CALCIUM	500 J	592 J	664 J	209 J
CHROMIUM	16.3	65 J	51.6 J	30
COBALT	1.9 J			
COPPER	6.4	9	35.7	50.5
IRON	14800	13300	10900	10000
LEAD	14.7	252 J	202 J	18.6
MAGNESIUM	145 J	108 J	103 J	131 J
MANGANESE	180	50	42.7	20
MERCURY	0.04 J	0.03 J	0.03 J	0.13
NICKEL	2.1 J	2.1 J	3.1 J	
POTASSIUM	130 J			121 J
SILVER			0.69 J	
SODIUM	162 J	233 J	198 J	197 J
THALLIUM				0.17 J
VANADIUM	38	35.4	28.4	42.2
ZINC	9.2	58.2	64.3	162

Notes:
The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg = micrograms per kilogram.
J = The associated numerical value is an estimated quantity.
mg/kg = milligrams per kilogram.
NA = Indicates the chemical was not analyzed for.

TABLE 5-10
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value(1)	Screening Toxicity Value Region III RBC(2) Soil Residential	Screening Toxicity Value Region III RBC(2) Soil Basis	Screening Toxicity Value Florida (3) Soil Residential
Volatiles										
2-Butanone	1/3	0.004	0.004	mg/kg	6SB4-0-2(92)	0.004	NA	4700	N	3100
Semivolatiles										
2-Methylnaphthalene	1/3	0.048	0.048	mg/kg	6SB3-0-2(92)-D	0.048	NA	160	N	83
Acenaphthene	1/3	0.12	0.19	mg/kg	6SB3-0-2(92)-D	0.19	NA	470	N	1900
Anthracene	1/3	0.14	0.16	mg/kg	6SB3-0-2(92)-D	0.16	NA	2300	N	18000
Benzo(a)anthracene	1/3	1.4	1.9	mg/kg	6SB3-0-2(92)-D	1.9	NA	0.87	C	1.4
Benzo(a)pyrene	1/3	1.6	1.9	mg/kg	6SB3-0-2(92)-D	1.9	NA	0.087	C	0.1
Benzo(b)fluoranthene	1/3	2	2.1	mg/kg	6SB3-0-2(92)	2.1	NA	0.87	C	1.4
Benzo(g,h,i)perylene	1/3	0.96	1.1	mg/kg	6SB3-0-2(92)	1.1	NA	NA	--	2300
Benzo(k)fluoranthene	1/3	1.5	1.7	mg/kg	6SB3-0-2(92)-D	1.7	NA	8.7	C	15
Bis(2-Ethylhexyl)phthalate	1/3	0.84	1.3	mg/kg	6SB3-0-2(92)	1.3	NA	46	C	76
Butylbenzyl Phthalate	1/3	0.15	0.26	mg/kg	6SB3-0-2(92)-D	0.26	NA	1600	N	15000
Carbazole	1/3	0.26	0.3	mg/kg	6SB3-0-2(92)-D	0.3	NA	32	C	53
Chrysene	1/3	1.7	2.1	mg/kg	6SB3-0-2(92)-D	2.1	NA	87	C	140
Dibenzo(a,h)anthracene	1/3	0.053	0.2	mg/kg	6SB3-0-2(92)-D	0.2	NA	0.087	C	0.1
Dibenzofuran	1/3	0.047	0.067	mg/kg	6SB3-0-2(92)-D	0.067	NA	31	N	280
Fluoranthene	1/3	2.4	2.6	mg/kg	6SB3-0-2(92)-D	2.6	NA	310	N	2900
Fluorene	1/3	0.09	0.14	mg/kg	6SB3-0-2(92)-D	0.14	NA	310	N	2200
Indeno(1,2,3-cd)pyrene	1/3	1.4	1.6	mg/kg	6SB3-0-2(92)	1.6	NA	0.87	C	1.5
Phenanthrene	1/3	1.2	1.5	mg/kg	6SB3-0-2(92)-D	1.5	NA	160 (4)	--	2000
Pyrene	1/3	2	2.1	mg/kg	6SB3-0-2(92)-D	2.1	NA	230	N	2200
Pesticides/PCBs										
4,4'-DDD	1/3	0.13	0.13	mg/kg	6SB4-0-2(92)	0.13	NA	2.7	C	4.6
4,4'-DDE	1/3	0.024	0.024	mg/kg	6SB4-0-2(92)	0.024	NA	1.9	C	3.3
Aroclor-1260	1/3	0.6	0.6	mg/kg	6SB4-0-2(92)	0.6	NA	0.32	C	0.5 (5)
Dieldrin	1/3	0.03	0.03	mg/kg	6SB4-0-2(92)	0.03	NA	0.04	C	0.07
Inorganics										
Aluminum	3/3	8460	29100	mg/kg	6SB4-0-2(92)	29100	7667	7800	N	72000
Arsenic	3/3	2.1	3.5	mg/kg	6SB3-0-2(92)	3.5	1.53	0.43	C	0.8
Barium	3/3	11.2	19.4	mg/kg	6SB2-0-2(92)	19.4	11.85	550	N	110
Beryllium	2/3	0.19	0.37	mg/kg	6SB2-0-2(92)	0.37	0.175	16	N	120
Cadmium	3/3	0.75	2.1	mg/kg	6SB4-0-2(92)	2.1	0.287	3.9	N	75
Calcium	3/3	209	664	mg/kg	6SB3-0-2(92)-D	664	201.5	NA	--	NA

TABLE 5-10
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value		
								Region III RBC[2]		Florida [3]
								Soil Residential	Soil Basis	Soil Residential
Inorganics (Continued)										
Chromium	3/3	16.3	65	mg/kg	6SB3-0-2(92)	65	5.35	23 [6]	N	210 [6]
Cobalt	1/3	1.9	1.9	mg/kg	6SB2-0-2(92)	1.9	1.465	470	N	4700
Copper	3/3	6.4	50.5	mg/kg	6SB4-0-2(92)	50.5	4.66	310	N	110
Iron	3/3	10000	14800	mg/kg	6SB2-0-2(92)	14800	4294.5	2300	N	23000
Lead	3/3	14.7	252	mg/kg	6SB3-0-2(92)	252	5.7	400 [7]	--	400
Magnesium	3/3	103	145	mg/kg	6SB2-0-2(92)	145	128.5	NA	--	NA
Manganese	3/3	20	180	mg/kg	6SB2-0-2(92)	180	201.5	160	N	1600
Mercury	3/3	0.03	0.13	mg/kg	6SB4-0-2(92)	0.13	0.0565	2.3 [8]	N	3.4
Nickel	2/3	2.1	3.1	mg/kg	6SB3-0-2(92)-D	3.1	3.635	160	N	110
Potassium	2/3	121	130	mg/kg	6SB2-0-2(92)	130	88.5	NA	--	NA
Silver	1/3	0.69	0.69	mg/kg	6SB3-0-2(92)-D	0.69	0.35	39	N	390
Sodium	3/3	162	233	mg/kg	6SB3-0-2(92)	233	194	NA	--	NA
Thallium	1/3	0.17	0.17	mg/kg	6SB4-0-2(92)	0.17	0.58	0.55	N	NA
Vanadium	3/3	28.4	42.2	mg/kg	6SB4-0-2(92)	42.2	10.6	55	N	15
Zinc	3/3	9.2	162	mg/kg	6SB4-0-2(92)	162	7.7	2300	N	23000
Total Petroleum Hydrocarbons										
TPH	1/1	3580	3580	mg/kg	6SB4-0-2(92)	3580	NA	NA	--	340

(1) Troup Loamy Soil (Table 3-9) and Dothan/Lucy/Bonifay Soil (Table 3-14), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998.

(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for noncarcinogens).

(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January 21, 1999.

(4) Value is for naphthalene.

(5) Value is for total aroclor.

(6) Value is for hexavalent chromium.

(7) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

(8) Value is for mercuric chloride.

mg/kg - milligrams per kilogram.

NA - not available

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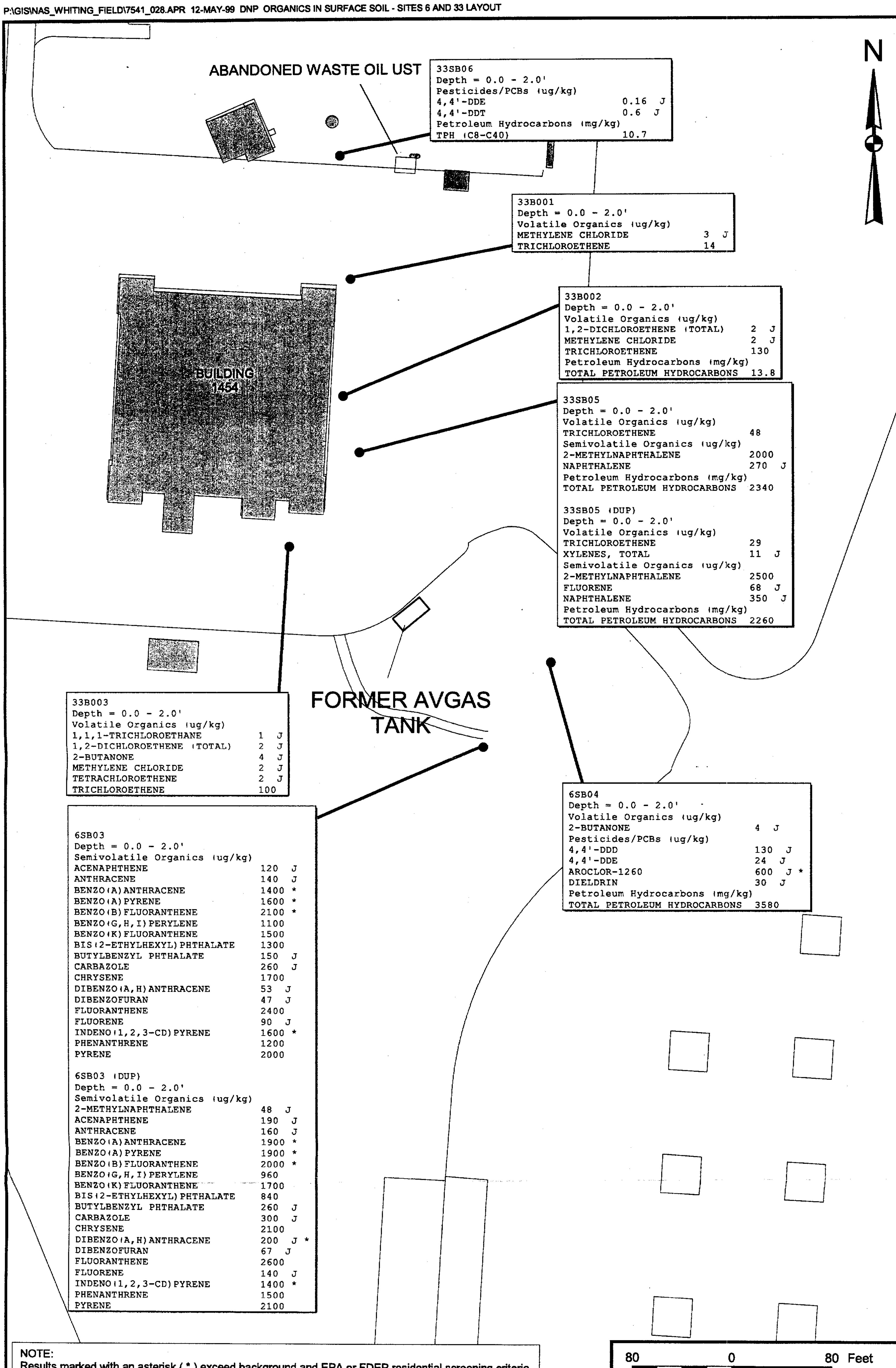

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY J. BELLONE	DATE 15-SEP-99	
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COST/SCHEDULE-AREA		
SCALE AS NOTED		

ORGANICS IN SURFACE SOIL AT SITES 6 AND 33
NAS WHITING FIELD, MILTON, FLORIDA

CONTRACT NUMBER	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 5-9	REV 0

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an estimated 24 µg/kg of 4,4'-DDE to an estimated 600 µg/kg of Aroclor-1260. The concentration of Aroclor-1260 is equal to the FDEP residential soil cleanup goal for the compound and above the USEPA Region III residential soil RBC of 320 µg/kg. Aroclor-1260 was the only pesticide/PCB detected at or above FDEP residential cleanup goals or USEPA Region III residential RBCs for soil. The distribution of pesticides/PCBs is displayed on Figure 5-9.

Inorganics

Twenty-one inorganic analytes were detected in the surface soil at Site 6. Fifteen of the analytes were detected in all three samples and the duplicate (6SB3-0-2-D). Eleven non-nutrient analytes (aluminum, arsenic, barium, beryllium, cadmium, chromium, iron, lead, mercury, vanadium, and zinc) were detected at concentrations above background soil concentrations for Troup and Dothan/Lucy/Bonifay soils. Of these ten analytes six (aluminum, arsenic, chromium, iron, manganese, and vanadium) exceeded the FDEP residential cleanup goals or USEPA Region III residential RBCs for soil. The distribution of inorganic constituents detected above background is presented on Figure 5-10.

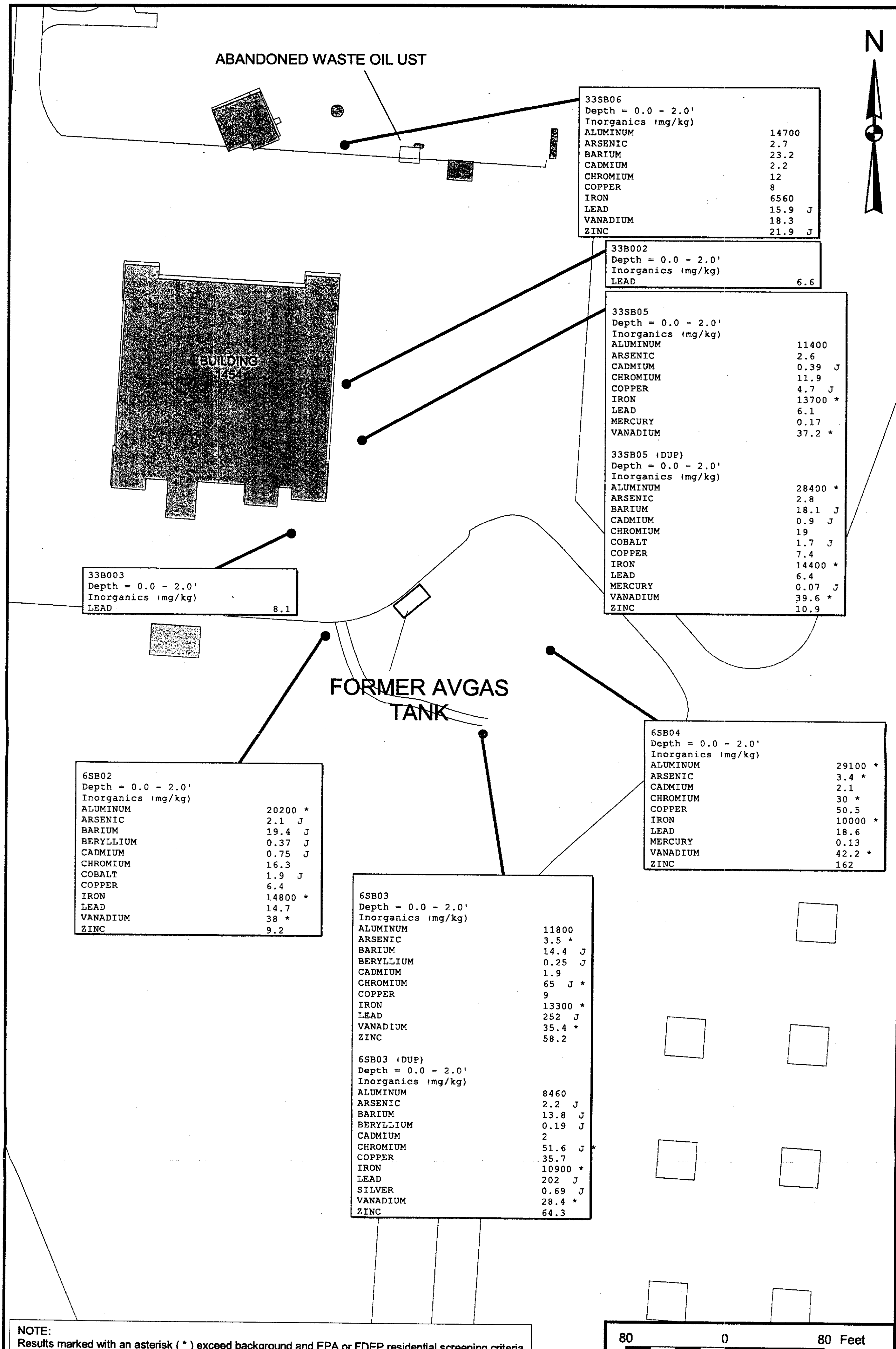
Arsenic, chromium, iron, and vanadium were detected above regulatory criteria in all three samples, as well as the duplicate sample. Maximum concentrations were 65 mg/kg for chromium in 6SB3-0-2, 42.2 mg/kg for vanadium in 6SB4-0-2, 14,800 mg/kg for iron in 6SB2-0-2, and 3.5 mg/kg for arsenic in 6SB3-0-2. Aluminum was detected above regulatory concentrations in two samples, with a maximum concentration of 29,100 mg/kg detected at 6SB4-0-2. Manganese exceeded the USEPA Region III RBCs in 6SB2-0-2 with a concentration of 180 mg/kg.

5.2.3.2 Subsurface Soil

Fourteen subsurface soil samples were collected from four soil borings in 1992. All samples were analyzed for VOCs, SVOCs, pesticides/PCBs, and metals. Only three samples from one boring (6SB4-5-7, -10-12, and -20-22) were analyzed for TPH. Table 5-11 summarizes the subsurface soil analytical results. Table 5-12 summarizes the frequency of detections, range of detections, background concentrations, USEPA Region III RBCs, and FDEP soil cleanup goals. Soil boring locations are displayed on Figure 3-2.

Volatile Organic Compounds

Three VOCs (1,1-DCE, 1,2-DCE, and TCE) were detected in only one deep subsurface soil sample at Site 6. All three compounds were detected in a sample collected at 117 to 119 feet bgs at 6SB03 within



NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY J. BELLONE	DATE 15-SEP-99		INORGANICS IN SURFACE SOIL AT SITES 6 AND 33 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER
CHECKED BY	DATE			APPROVED BY / DATE
COST/SCHEDULE-AREA				APPROVED BY / DATE
SCALE AS NOTED				DRAWING NO. FIGURE 5-10 / REV 0

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TABLE 5-11
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	6SB1-15-17 12/4/92 15 - 17'	6SB1-20-22 12/4/92 20 - 22'	6SB1-5-7 12/4/92 5 - 7'	6SB2-15-17 12/4/92 15 - 17'	6SB2-20-22 12/4/92 20 - 22'	6SB3-10-12 12/5/92 10 - 12'	6SB3-117-119 12/5/92 117 - 119'
VOLATILES (µg/kg)							
1,1-DICHLOROETHENE							2 J
1,2-DICHLOROETHENE (TOTAL)							2 J
TRICHLOROETHENE							73
SEMIVOLATILES (µg/kg)							
ANTHRACENE							
BENZO(A)ANTHRACENE							
BENZO(A)PYRENE							
BENZO(B)FLUORANTHENE						38 J	
BENZO(G,H,I)PERYLENE							
BENZO(K)FLUORANTHENE						39 J	
BIS(2-ETHYLHEXYL)PHTHALATE			54 J				
CARBAZOLE							
CHRYSENE							
FLUORANTHENE						38 J	
FLUORENE							
INDENO(1,2,3-CD)PYRENE							
PHENANTHRENE							
PYRENE						41 J	
PESTICIDES/PCBs (µg/kg)							
DIELDRIN			13 J				
TOTAL PETROLEUM HYDROCARBONS (mg/kg)							
TOTAL PETROLEUM HYDROCARBONS							
METALS (mg/kg)							
ALUMINUM	9390	2120	14300	39800	337	2250	1750
ARSENIC	1.3 J	0.15 J	1.6 J	0.31 J		1.5 J	1.3 J
BARIUM	3.8 J	0.66 J	12.8 J	10.1 J	0.41 J	2 J	4 J
BERYLLIUM			0.18 J	0.2 J			
CADMIUM	0.68 J	0.33 J	0.62 J	0.59 J		0.41 J	
CALCIUM	203 J	101 J	329 J	314 J	93.1 J	248 J	341 J
CHROMIUM	27.8	4.9	14.3	39.4	1.1 J	11.5	6.2
COPPER	4.7 J	1.6 J	5.5 J	10.3	0.44 J	1.8 J	3.3
IRON	18900	4480	12300	17600	237	11400	2450
LEAD	3.4	0.71	21.1	6.9	0.59 J	8.2	4.1
MAGNESIUM	72.2 J	15.7 J	81.8 J	143 J	11 J	24.8 J	86 J
MANGANESE	14.6	2.3 J	73.7	13.9	0.77 J	14.2	1.4 J
MERCURY							0.13
NICKEL			2 J	2.8 J			
POTASSIUM			94.2 J	141 J			178 J
SELENIUM				0.27 J		0.16 J	
SODIUM	218 J	143 J	226 J	136 J	150 J	247 J	239 J
THALLIUM	0.16 J	0.17 J	0.35 J		0.17 J	0.25 J	
VANADIUM	53.1	12.9	31.9	56.8	1 J	32.2	12.7
ZINC	6.2 J	1.8 J	13.1	8.1	1.7 J	4.5 J	2.9 J

TABLE 5-11
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 3

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	6SB3-15-17 12/5/92 15 - 17'	6SB3-25-27 12/5/92 25 - 27'	6SB3-5-7 12/5/92 5 - 7'	6SB3-60-62 12/5/92 60 - 62'	6SB4-10-12 12/4/92 10 - 12'	6SB4-20-22 12/4/92 20 - 22'	6SB4-5-7 12/4/92 5 - 7'
VOLATILES (µg/kg)							
1,1-DICHLOROETHENE							
1,2-DICHLOROETHENE (TOTAL)							
TRICHLOROETHENE							
SEMIVOLATILES (µg/kg)							
ANTHRACENE			110 J				
BENZO(A)ANTHRACENE			320 J				
BENZO(A)PYRENE			290 J				
BENZO(B)FLUORANTHENE			290 J				
BENZO(G,H,I)PERYLENE			160 J				
BENZO(K)FLUORANTHENE			290 J				
BIS(2-ETHYLHEXYL)PHTHALATE						64 J	
CARBAZOLE			93 J				
CHRYSENE			340 J				
FLUORANTHENE			750				
FLUORENE			57 J				
INDENO(1,2,3-CD)PYRENE			200 J				
PHENANTHRENE			510				
PYRENE			590				
PESTICIDES/PCBs (µg/kg)							
DIELDRIN							
TOTAL PETROLEUM HYDROCARBONS (mg/kg)							
TOTAL PETROLEUM HYDROCARBONS					7.1	24.1	10
METALS (mg/kg)							
ALUMINUM	2120	175	24300	588	14800	2520	3780
ARSENIC	1.1 J		0.99 J		2.7	0.2 J	2.1 J
BARIUM	0.67 J	0.33 J	6 J	1.8 J	3.6 J	2 J	3 J
BERYLLIUM							
CADMIUM			0.86 J		0.4 J	0.28 J	
CALCIUM	123 J	90.9 J	318 J	159 J	153 J	121 J	101 J
CHROMIUM	3.1		30	1.4 J	13.8	5.1	8.7
COPPER	1.2 J	0.66 J	7.2	0.73 J	5 J	2.8 J	2.7 J
IRON	3490	261	17500	427	11200	1230	9840
LEAD	1.2	0.19 J	19.7	1.2	3.7	2.1	3.9
MAGNESIUM	15.9 J	10.2 J	84.1 J	43 J	52.6 J	29.2 J	23 J
MANGANESE	3.9	1.3 J	27.1	1.3 J	14.9	4.2	13.7
MERCURY							0.03 J
NICKEL							
POTASSIUM	49.6 J		94.6 J	60.6 J	97.2 J		58.4 J
SELENIUM				0.13 J			
SODIUM	147 J	172 J	235 J	270 J	177 J	184 J	200 J
THALLIUM			0.18 J				
VANADIUM	9.7 J	1 J	48.9	2.9 J	32.5	5.3 J	28.9
ZINC	2.6 J	2.4 J	15.4	1.5 J	6.1 J	9.8	4.5 J

TABLE 5-11
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA

Notes:

The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-12
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value [1]	Screening Toxicity Value		
								Region III RBC [2]		Florida [3]
								Soil Industrial	Soil Basis	Soil Industrial
Volatiles										
1,1-Dichloroethene	1/14	0.002	0.002	mg/kg	6SB3-117-119(92)	0.002	NA	9.5	C	0.1
1,2-Dichloroethene (total)	1/14	0.002	0.002	mg/kg	6SB3-117-119(92)	0.002	NA	1800	N	130[4]
Trichloroethene	1/14	0.073	0.073	mg/kg	6SB3-117-119(92)	0.073	NA	520	C	8.5
Semivolatiles										
Anthracene	1/14	0.11	0.11	mg/kg	6SB3-5-7(92)	0.11	NA	61000	N	260000
Benzo(a)anthracene	1/14	0.32	0.32	mg/kg	6SB3-5-7(92)	0.32	NA	7.8	C	5
Benzo(a)pyrene	1/14	0.29	0.29	mg/kg	6SB3-5-7(92)	0.29	NA	0.78	C	0.5
Benzo(b)fluoranthene	2/14	0.038	0.29	mg/kg	6SB3-5-7(92)	0.29	NA	7.8	C	4.8
Benzo(g,h,i)perylene	1/14	0.16	0.16	mg/kg	6SB3-5-7(92)	0.16	NA	NA	-	41000
Benzo(k)fluoranthene	2/14	0.039	0.29	mg/kg	6SB3-5-7(92)	0.29	NA	78	C	52
Bis(2-Ethylhexyl)phthalate	2/14	0.054	0.064	mg/kg	6SB4-20-22(92)	0.064	NA	410	C	280
Carbazole	1/14	0.093	0.093	mg/kg	6SB3-5-7(92)	0.093	NA	290	C	190
Chrysene	1/14	0.34	0.34	mg/kg	6SB3-5-7(92)	0.34	NA	780	C	450
Fluoranthene	2/14	0.038	0.75	mg/kg	6SB3-5-7(92)	0.75	NA	8200	N	48000
Fluorene	1/14	0.057	0.057	mg/kg	6SB3-5-7(92)	0.057	NA	8200	N	28000
Indeno(1,2,3-cd)pyrene	1/14	0.2	0.2	mg/kg	6SB3-5-7(92)	0.2	NA	7.8	C	5.3
Phenanthrene	1/14	0.51	0.51	mg/kg	6SB3-5-7(92)	0.51	NA	4100[5]	N	30000
Pyrene	2/14	0.041	0.59	mg/kg	6SB3-5-7(92)	0.59	NA	6100	N	37000
Pesticides/PCBs										
Dieldrin	1/14	0.013	0.013	mg/kg	6SB1-5-7(92)	0.013	NA	0.36	C	0.3
Metals										
Aluminum	14/14	175	39800	mg/kg	6SB2-15-17(92)	39800	13917	200000	N	NA
Arsenic	11/14	0.15	2.7	mg/kg	6SB4-10-12(92)	2.7	3.1	3.8	C	3.7
Barium	14/14	0.33	12.8	mg/kg	6SB1-5-7(92)	12.8	7.9	14000	N	87000
Beryllium	2/14	0.18	0.2	mg/kg	6SB2-15-17(92)	0.2	0.13	410	C	800
Cadmium	8/14	0.28	0.86	mg/kg	6SB3-5-7(92)	0.86	0.46	100	N	1300
Calcium	14/14	90.9	341	mg/kg	6SB3-117-119(92)	341	222	NA	-	NA
Chromium	13/14	1.1	39.4	mg/kg	6SB2-15-17(92)	39.4	11.4	610[6]	N	420[6]
Copper	14/14	0.44	10.3	mg/kg	6SB2-15-17(92)	10.3	4.4	8200	N	73000
Iron	14/14	237	18900	mg/kg	6SB1-15-17(92)	18900	9055	61000	N	480000
Lead	14/14	0.19	21.1	mg/kg	6SB1-5-7(92)	21.1	4.2	400[7]	-	920

TABLE 5-12
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value (1)	Screening Toxicity Value		
								Region III RBC (2)		Florida (3)
								Soil Industrial	Soil Basis	Soil Industrial
Magnesium	14/14	10.2	143	mg/kg	6SB2-15-17(92)	143	136	NA	-	NA
Manganese	14/14	0.77	73.7	mg/kg	6SB1-5-7(92)	73.7	21.3	4700	N	22000
Mercury	2/14	0.03	0.13	mg/kg	6SB3-117-119(92)	0.13	NA	61 (8)	N	26
Nickel	2/14	2	2.8	mg/kg	6SB2-15-17(92)	2.8	2.5	4100	N	28000
Potassium	8/14	49.6	178	mg/kg	6SB3-117-119(92)	178	90.5	NA	-	NA
Selenium	3/14	0.13	0.27	mg/kg	6SB2-15-17(92)	0.27	0.15	1000	N	10000
Sodium	14/14	136	270	mg/kg	6SB3-60-62(92)	270	NA	NA	-	NA
Thallium	6/14	0.16	0.35	mg/kg	6SB1-5-7(92)	0.35	NA	14	N	NA
Vanadium	14/14	1	56.8	mg/kg	6SB2-15-17(92)	56.8	22.5	1400	N	7400
Zinc	14/14	1.5	15.4	mg/kg	6SB3-5-7(92)	15.4	7.8	61000	N	560000
Total Petroleum Hydrocarbons										
Total Petroleum Hydrocarbons	3/3	7.1	24.1	mg/kg	6SB4-20-22(92)	24.1	NA	NA	-	2500

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998. Background screening value is two times the mean detected concentration.

(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for noncarcinogens).

(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January 21, 1999.

(4) Value is for cis-1,2-dichloroethene

(5) Value is for naphthalene.

(6) Value is for hexavalent chromium.

(7) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

(8) Value is for mercuric chloride.

J - estimated value.

mg/kg - milligrams per kilogram.

NA - not available

the saturated zone. The analytical results from this sample are counted as detections in Table 5-11 and presented on Figure 5-11 for informational purposes only.

Semivolatile Organic Compounds

Thirteen SVOCs were detected in the subsurface soil at only one soil boring location, 6SB3. Concentrations ranged from an estimated 38 µg/kg of benzo(b)fluoranthene in 6SB3-10-12 (10 to 12 feet bgs) to 750 µg/kg of fluoranthene in 6SB3-5-7 (5 to 7 feet bgs). All of the compounds, except bis(2-ethylhexyl)phthalate, were detected in 6SB3-5-7. Four of the compounds, benzo(a)fluoranthene, benzo(k)fluoranthene, fluoranthene, and pyrene, were also detected in 6SB3-10-12. SVOC concentrations decreased significantly with depth, and no SVOC detections exceeded the USEPA Region III RBCs or FDEP industrial cleanup goals for soil. The distribution of SVOCs is presented in Figure 5-11.

Bis(2-ethylhexyl)phthalate was detected at 6SB01 and 6SB04. Concentrations were estimated at 54 µg/kg and 64 µg/kg, respectively. Bis(2-ethylhexyl)phthalate is a commonly recognized field or laboratory derived contaminant according to USEPA (USEPA, 1994a).

Total Petroleum Hydrocarbons

TPH analysis was performed on three samples from 6SB04. A maximum concentration of 24.1 mg/kg was detected in a sample collected from 20-22 feet bgs. This concentration is below the FDEP industrial cleanup goal of 2,500 mg/kg for soil. The location of 6SB04 is shown in Figure 5-11.

Pesticides/PCBs

One pesticide compound was detected in the subsurface soil at Site 6. Dieldrin was detected at an estimated concentration of 13 µg/kg at 6SB01 at 5-7 feet bgs. This concentration is below the USEPA Region III RBC of 360 µg/kg and FDEP industrial cleanup goal of 300 µg/kg for soil. The distribution of pesticides/PCBs is displayed in Figure 5-11.

Inorganics

Twenty inorganic analytes were detected in the subsurface soil at Site 6. Fifteen non-nutrient analytes (aluminum, barium, beryllium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, thallium, vanadium, and zinc) were detected at concentrations above background at all four soil

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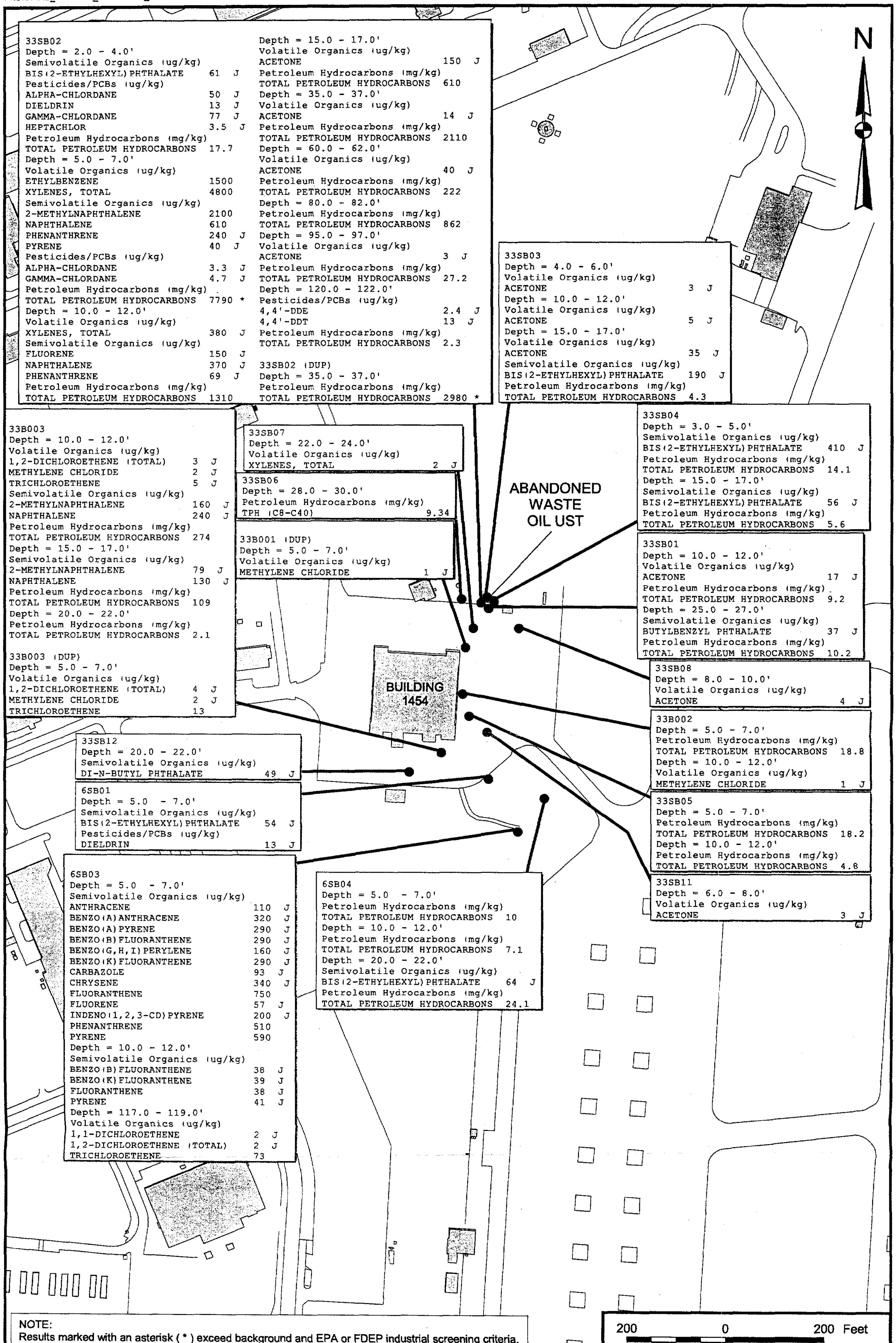

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY J. BELLONE	DATE 15-SEP-99	ORGANICS IN SUBSURFACE SOIL AT SITES 6 AND 33 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER
CHECKED BY	DATE		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 5-11 — REV 0

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boring locations. No inorganic analyte detections exceeded USEPA Region III RBCs or FDEP industrial cleanup goals for soil.

Soil samples collected from above 17 feet bgs contained the greatest number of analytes at concentrations above background. Subsurface soil samples 6SB1-5-7 and 6SB2-15-17 displayed the greatest number of analytes detected above background with 12 detections each. Iron and vanadium were detected most often at concentrations above background with seven detections each. Concentrations of iron above background ranged from 9,840 mg/kg in 6SB4-5-7 to 18,900 mg/kg in 6SB1-15-17. Vanadium was detected at concentrations of 28.9 mg/kg in 6SB4-5-7 to 56.8 mg/kg in 6SB2-15-17. Aluminum had the highest concentration in the subsurface soil at Site 6 with a concentration of 39,800 mg/kg. Figure 5-12 shows the distribution of inorganics in the subsurface soil at Site 6.

5.2.3.3 Summary

The source of chemicals in the surface and subsurface soils at Site 6 can be attributed to the release of transformer oil into a drainage ditch located south of Building 1454. However, SVOCs and PCBs were infrequently detected in the surface and subsurface soils. Other chemicals detected in the surface and subsurface soils include VOCs, TPH, and inorganics. Exceedences of regulatory criteria were limited to surface soils only.

All SVOCs detected in the surface and subsurface soils at Site 6, except BEHP, were identified in soils collected from 6SB03. This boring is located at the discharge of the flume into which transformer oil may have been released. The highest concentrations of SVOCs were detected in the surface soils. The number of SVOCs and concentrations decreased with depth until no compounds were detected in a sample collected from 15-17 feet bgs. Pesticide/PCB compounds were detected in the surface soil at 6SB4 only and one subsurface soil sample at 6SB1 (5-7 feet bgs). The Aroclor-1260 detection in the surface soil at 6SB04 was the only PCB compound detected at the site and is likely the result of the discharge of transformer oil to the flume.

Elevated inorganic concentrations are most prevalent in the shallow soil in the area adjacent to the Midfield Hangar apron. Runoff from the apron is directed to this area; therefore, the source for the above average inorganic concentrations may be from hangar activities as well as the discharge of transformer oil to the ditch.

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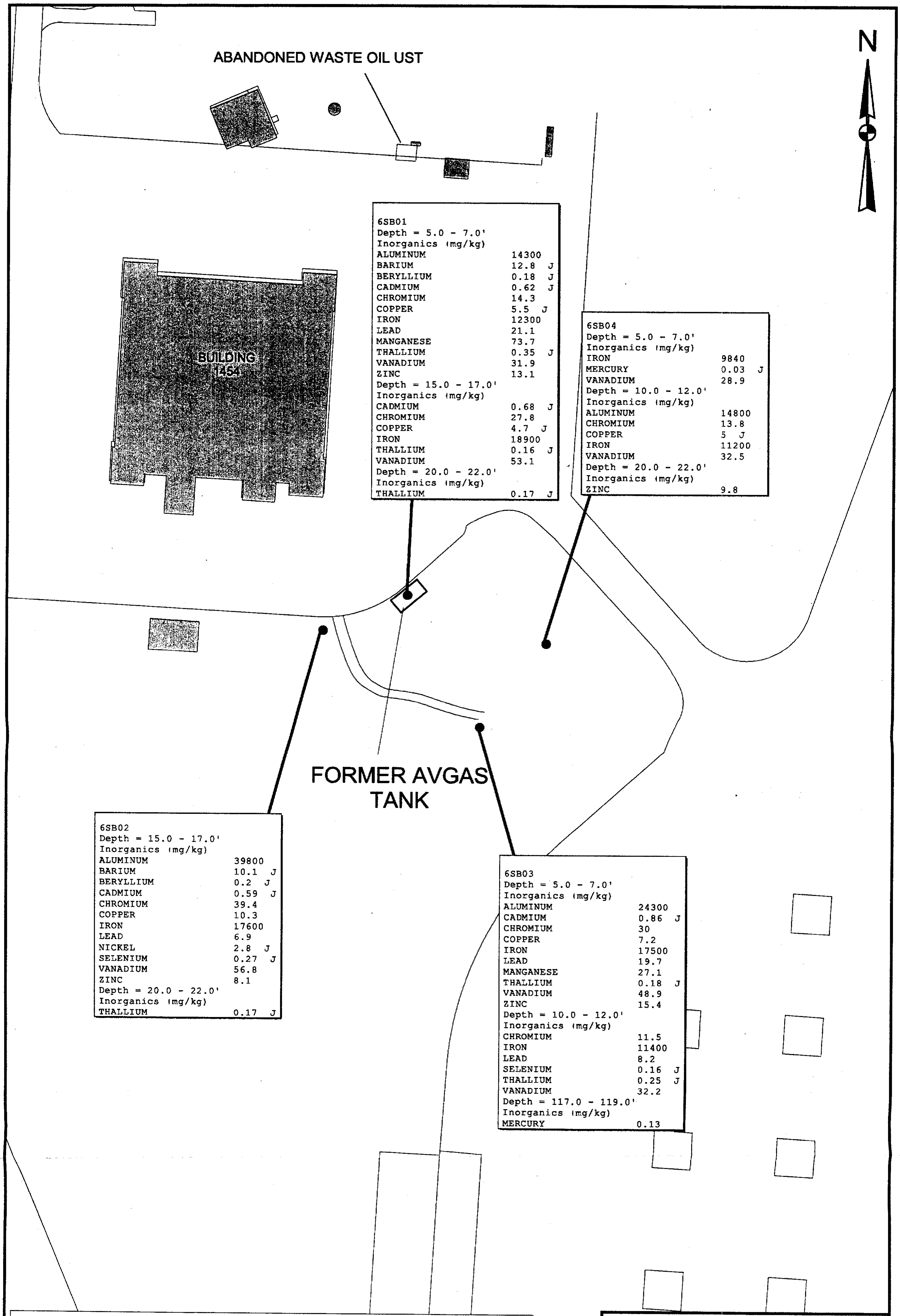

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99
CHECKED BY:	DATE:
COST/SCHEDULE-AREA	
SCALE: AS NOTED	

INORGANICS IN SUBSURFACE SOIL AT SITE 6
NAS WHITING FIELD, MILTON, FLORIDA

CONTRACT NUMBER	
APPROVED BY	DATE
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DRAWING NO. FIGURE 5-12	REV 0

Rev. 1
09/27/99

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5.2.4 Site 30

Surface and subsurface soil sampling was conducted in three phases. Soil borings 30SB01 through 30SB07 were installed by ABB-ES in December 1992 through January 1993. The wash rack area was investigated in May and June 1996 with the installation of six soil borings (30B001 - 30B006). Additional soil borings, 30SB08 through 30SB13, were installed by Tetra Tech NUS in March 1998 to sample previously uninvestigated soil gas hot spots and define the horizontal and vertical extent of soil contamination.

5.2.4.1 Surface Soil

Fourteen surface soil samples have been collected at Site 30. Six surface soil samples collected in 1992/1993 and two in 1998 were analyzed for VOCs, SVOCs, pesticides/PCBs, TPH, and metals. Six surface soil samples collected in 1996 were analyzed for VOCs, SVOCs, TPH, and lead. Surface soil sample locations are presented on Figure 5-13. Organic and inorganic analytical results are summarized in Table 5-13. Table 5-14 summarizes the statistical analysis of the data and background concentrations. Background concentrations are based on Troup loamy soil found at Site 30. USEPA Region III RBCs and the FDEP soil cleanup goals for residential soils are also presented in Table 5-14. Eight of the surface soil samples (30SB04-0-2, 30SB05-0-2, 30SB06-0-2, 30SB07-0-2, 30B00301, 30B00401, 30B00501, and 30B00601) were collected from below asphalt or concrete paving.

Volatile Organic Compounds

Seven VOCs [1,2-dichloroethene (total), 2-butanone, acetone, methylene chloride, toluene, TCE, and xylenes] were detected in 8 of 14 surface soil samples. Acetone and TCE were the most frequently detected VOCs with three detections each. Methylene chloride was detected two times and the remaining VOCs were detected once each. The surface soil sample with the most VOC detections was 30SB00301 with four detections ranging from 9 J μg/kg (toluene) to 160 μg/kg (1,2-dichloroethene). Surface soil sample 30SB5-0-2 had the next highest number of VOC detections with two (acetone at 32 μg/kg and TCE at 5 J μg/kg). Both of these samples are located near the wash rack area. Sample 30SB02-0-2 is located near the former waste oil tanks.

TCE was the VOC with the highest detected concentration (180 J μg/kg at 30SB02-0-2). TCE concentrations ranged from 5 μg/kg (30SB05-0-2) to 180 J μg/kg (30SB02-0-2). The VOC with the next highest concentration was 1,2-dichloroethene (total), 160 μg/kg at 30B00301. No VOCs were

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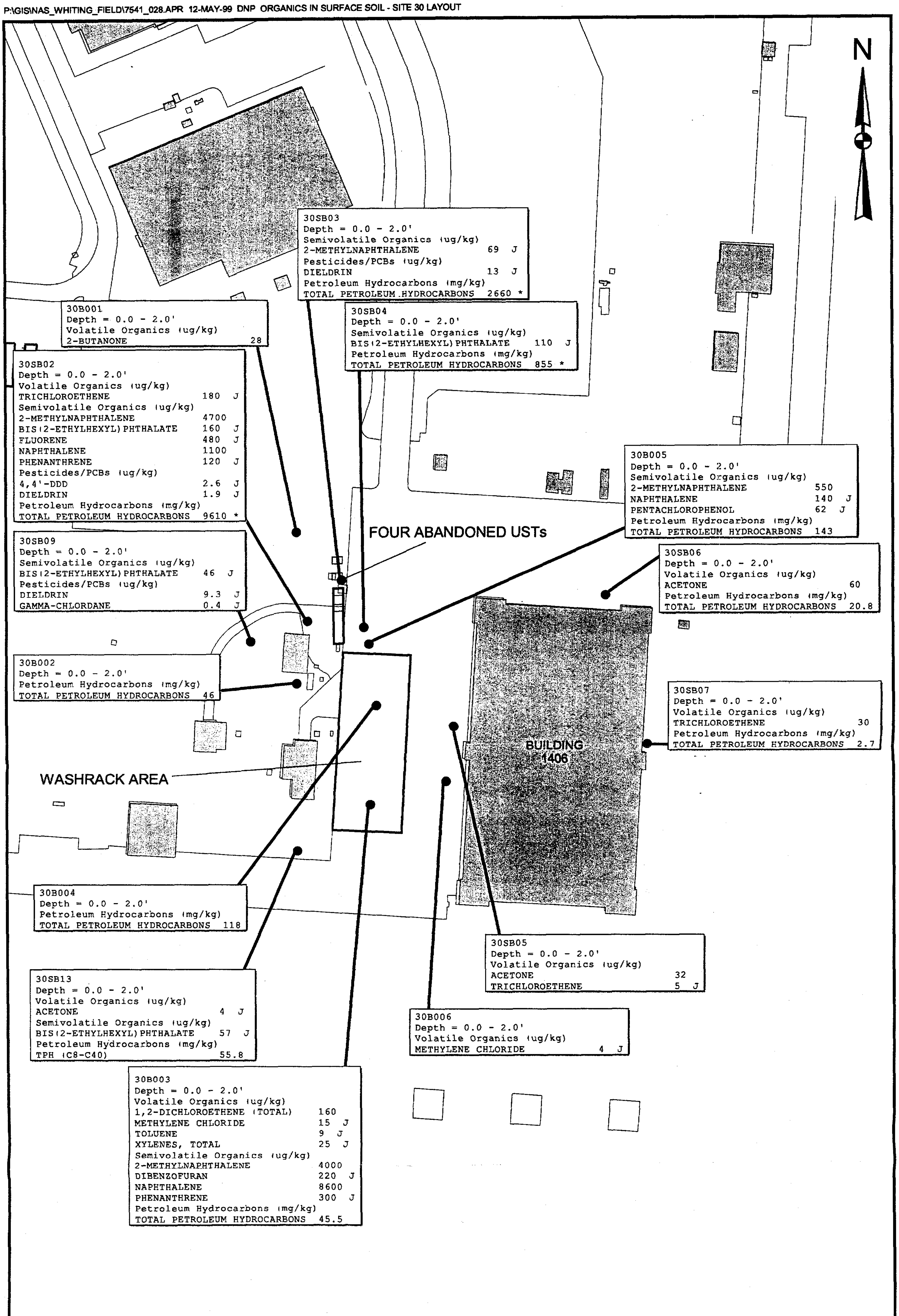

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

100 0 100 Feet

DRAWN BY J. BELLONE — DATE 15-SEP-99 CHECKED BY — DATE COST/SCHEDULE-AREA SCALE AS NOTED	DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING	ORGANICS IN SURFACE SOIL AT SITE 30 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER APPROVED BY — DATE APPROVED BY — DATE DRAWING NO. FIGURE 5-13 — REV 0

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TABLE 5-13
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 3

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	30B00101 5/23/96 0 - 2'	30B00201 5/23/96 0 - 2'	30B00301 6/5/96 0 - 2'	30B00401 6/4/96 0 - 2'	30B00501 6/4/96 0 - 2'	30B00601 6/5/96 0 - 2'	30SB02-0-2 1/4/93 0 - 2'
VOLATILES (µg/kg)							
1,2-DICHLOROETHENE (TOTAL)			160				
2-BUTANONE	28						
ACETONE							
METHYLENE CHLORIDE			15 J			4 J	
TOLUENE			9 J				
TRICHLOROETHENE							180 J
XYLENES, TOTAL			25 J				
SEMIVOLATILES (µg/kg)							
2-METHYLNAPHTHALENE			4000		550		4700
BIS(2-ETHYLHEXYL)PHTHALATE							160 J
DIBENZOFURAN			220 J				
FLUORENE							480 J
NAPHTHALENE			8600		140 J		1100
PENTACHLOROPHENOL					62 J		
PHENANTHRENE			300 J				120 J
PESTICIDES/PCBs (µg/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	2.6 J
DIELDRIN	NA	NA	NA	NA	NA	NA	1.9 J
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)							
TOTAL PETROLEUM HYDROCARBONS		46	45.5	118	143		9610
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)							
ALUMINUM	NA	NA	NA	NA	NA	NA	8190
ARSENIC	NA	NA	NA	NA	NA	NA	4
BARIUM	NA	NA	NA	NA	NA	NA	13.1 J
BERYLLIUM	NA	NA	NA	NA	NA	NA	0.08 J
CADMIUM	NA	NA	NA	NA	NA	NA	
CALCIUM	NA	NA	NA	NA	NA	NA	606 J
CHROMIUM	NA	NA	NA	NA	NA	NA	17.2
COBALT	NA	NA	NA	NA	NA	NA	1.6 J
COPPER	NA	NA	NA	NA	NA	NA	1.1 J
CYANIDE	NA	NA	NA	NA	NA	NA	0.48 J
IRON	NA	NA	NA	NA	NA	NA	13800
LEAD	42.5	34.5	4.5 J	5.2 J	4.8 J	5.7 J	26.2
MAGNESIUM	NA	NA	NA	NA	NA	NA	112 J
MANGANESE	NA	NA	NA	NA	NA	NA	146
MERCURY	NA	NA	NA	NA	NA	NA	0.03 J
NICKEL	NA	NA	NA	NA	NA	NA	
POTASSIUM	NA	NA	NA	NA	NA	NA	
SELENIUM	NA	NA	NA	NA	NA	NA	2.1
SILVER	NA	NA	NA	NA	NA	NA	0.9 J
SODIUM	NA	NA	NA	NA	NA	NA	
VANADIUM	NA	NA	NA	NA	NA	NA	37.4
ZINC	NA	NA	NA	NA	NA	NA	1.6 J

TABLE 5-13
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 3

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	30SB03-0-2 1/4/93 0 - 2'	30SB04-0-2 1/4/93 0 - 2'	30SB5-0-2 1/5/93 0 - 2'	30SB6-0-2 1/5/93 0 - 2'	30SB7-0-2 1/5/93 0 - 2'	W30SB00901 3/23/98 0 - 2'	W30SB01301 3/23/98 0 - 2'
VOLATILES (µg/kg)							
1,2-DICHLOROETHENE (TOTAL)							
2-BUTANONE							
ACETONE			32	60			4 J
METHYLENE CHLORIDE							
TOLUENE							
TRICHLOROETHENE			5 J		30		
XYLENES, TOTAL							
SEMIVOLATILES (µg/kg)							
2-METHYLNAPHTHALENE	69 J						
BIS(2-ETHYLHEXYL)PHTHALATE		110 J				46 J	57 J
DIBENZOFURAN							
FLUORENE							
NAPHTHALENE							
PENTACHLOROPHENOL							
PHENANTHRENE							
PESTICIDES/PCBs (µg/kg)							
4,4'-DDD							
DIELDRIN	13 J					9.3 J	
GAMMA-CHLORDANE						0.4 J	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)							
TOTAL PETROLEUM HYDROCARBONS	2660	855		20.8	2.7	NA	NA
TPH (C8-C40)	NA	NA	NA	NA	NA		55.8
METALS (mg/kg)							
ALUMINUM	18000	12000	12200	12600	12200	11700	41600
ARSENIC	4.5	5.2	2.8	4.4	3.3	2.5	4.8
BARIUM	12 J	10 J	22.3 J	20.4 J	26.1 J	13.6 J	10.9 J
BERYLLIUM		0.09 J	0.13 J	0.14 J	0.13 J		
CADMIUM		0.95					
CALCIUM	473 J	137 J	1850	262 J	976 J	344	486
CHROMIUM	20.6	14.8	12.1	10.5	8.4	13	30.7
COBALT	1.8 J	2 J	2.3 J	4.4 J	2.4 J	0.56	
COPPER	2.2 J	1.8 J	2.5 J	1.4 J	2.7 J	4	8.4
CYANIDE	0.44 J	0.49 J	0.53 J	0.55 J	0.6 J		
IRON	18500	16300	11100	12700	8250	7870	24100
LEAD	9.3	66	16	9.5	7.4	27.9	6.8
MAGNESIUM	237 J	61.2 J	126 J	87.2 J	110 J	117	
MANGANESE	23.2	15.9	558	336	898	67.6	42.7
MERCURY	0.02 J		0.06	0.04 J	0.05 J	0.03	
NICKEL			3 J		3.3 J	2.1	3.2 J
POTASSIUM	122 J	202 J	127 J		185 J	82.2	
SELENIUM	1.7	2.1		1.4	1.9		
SILVER	0.89 J	0.77 J					
SODIUM			14.3 J		13.7 J		
VANADIUM	55	44.6	29.3	33	21.1	20.3	63.7
ZINC	2.5 J	3.1 J	4.6	2.2 J	4.1 J	8.8	3.6 J

TABLE 5-13
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 3 OF 3

Notes:
The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
μg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-14
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value (1)	Screening Toxicity Value: Region III RBC (2) Soil Residential	Screening Toxicity Value: Region III RBC (2) Soil Basis	Screening Toxicity Value: Florida (3) Soil Residential
Volatiles										
1,2-Dichloroethene (total)	1/14	0.16	0.16	mg/kg	30B00301	0.16	NA	70	N	19 (4)
2-Butanone	1/12	0.028	0.028	mg/kg	30B00101	0.028	NA	4700	N	3100
Acetone	3/14	0.004	0.06	mg/kg	30SB6-0-2(93)	0.06	NA	780	N	780
Methylene Chloride	2/14	0.004	0.015	mg/kg	30B00301	0.015	NA	85	C	16
Toluene	1/14	0.009	0.009	mg/kg	30B00301	0.009	NA	1600	N	380
Trichloroethene	3/14	0.005	0.18	mg/kg	30SB02-0-2(93)	0.18	NA	58	C	6
Xylenes, Total	1/14	0.025	0.025	mg/kg	30B00301	0.025	NA	16000	N	5900
Semivolatiles										
2-Methylnaphthalene	4/14	0.069	4.7	mg/kg	30SB02-0-2(93)	4.7	NA	160	N	83
Bis(2-Ethylhexyl)phthalate	4/14	0.046	0.16	mg/kg	30SB02-0-2(93)	0.16	0.08	46	C	76
Dibenzofuran	1/14	0.22	0.22	mg/kg	30B00301	0.22	NA	31	N	280
Fluorene	1/14	0.48	0.48	mg/kg	30SB02-0-2(93)	0.48	NA	310	N	2200
Naphthalene	3/14	0.14	8.6	mg/kg	30B00301	8.6	NA	160	N	40
Pentachlorophenol	1/14	0.062	0.062	mg/kg	30B00501	0.062	NA	5.3	C	7.7
Phenanthrene	2/14	0.12	0.3	mg/kg	30B00301	0.3	NA	160 (5)	N	2000
Pesticides/PCBs										
4,4'-DDD	1/8	0.0026	0.0026	mg/kg	30SB02-0-2(93)	0.0026	NA	2.7	C	4.6
Dieldrin	3/8	0.0019	0.013	mg/kg	30SB03-0-2(93)	0.013	NA	0.04	C	0.07
Gamma-Chlordane	1/8	0.0004	0.0004	mg/kg	W30SB00901	0.0004	NA	1.8 (6)	C	3.1 (6)
Inorganics										
Aluminum	8/8	8190	41600	mg/kg	W30SB01301	41600	7924	7800	N	72000
Arsenic	8/8	2.5	5.2	mg/kg	30SB04-0-2(93)	5.2	1.6	0.43	C	0.8
Barium	8/8	10	26.1	mg/kg	30SB7-0-2(93)	26.1	11.6	550	N	110
Beryllium	5/8	0.08	0.14	mg/kg	30SB6-0-2(93)	0.14	0.18	16	N	120
Cadmium	1/8	0.95	0.95	mg/kg	30SB04-0-2(93)	0.95	0.29	3.9	N	75
Calcium	8/8	137	1850	mg/kg	30SB5-0-2(93)	1850	198	NA	--	NA
Chromium	8/8	8.4	30.7	mg/kg	W30SB01301	30.7	5.5	23 (7)	N	210 (7)
Cobalt	7/8	0.56	4.4	mg/kg	30SB6-0-2(93)	4.4	1.5	470	N	4700
Copper	8/8	1.1	8.4	mg/kg	W30SB01301	8.4	4.7	310	N	110
Cyanide	6/6	0.44	0.6	mg/kg	30SB7-0-2(93)	0.6	0.14	160	N	30
Iron	8/8	7870	24100	mg/kg	W30SB01301	24100	4416	2300	N	23000
Lead	8/8	6.8	66	mg/kg	30SB04-0-2(93)	66	5.7	400 (8)	--	400
Magnesium	7/8	61.2	237	mg/kg	30SB03-0-2(93)	237	134	NA	--	NA
Manganese	8/8	15.9	898	mg/kg	30SB7-0-2(93)	898	196	160	N	1600
Mercury	6/8	0.02	0.06	mg/kg	30SB5-0-2(93)	0.06	0.06	2.3 (9)	N	3.4
Nickel	4/8	2.1	3.3	mg/kg	30SB7-0-2(93)	3.3	3.6	160	N	110
Potassium	5/7	82.2	202	mg/kg	30SB04-0-2(93)	202	88.5	NA	--	NA

TABLE 5-14
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value [1]	Screening Toxicity Value: Region III RBC [2] Soil Residential	Screening Toxicity Value: Region III RBC [2] Soil Basis	Screening Toxicity Value: Florida [3] Soil Residential
Inorganics (Continued)										
Selenium	5/8	1.4	2.1	mg/kg	30SB02-0-2(93)	2.1	0.23	39	N	390
Selenium	5/8	1.4	2.1	mg/kg	30SB04-0-2(93)	2.1	0.35	39	N	390
Silver	3/8	0.77	0.9	mg/kg	30SB02-0-2(93)	0.9	203	39	N	390
Sodium	2/8	13.7	14.3	mg/kg	30SB5-0-2(93)	14.3	0.58	NA	--	NA
Vanadium	8/8	20.3	63.7	mg/kg	W30SB01301	63.7	10.9	55	N	15
Zinc	8/8	1.6	8.8	mg/kg	W30SB00901	8.8	7.7	2300	N	23000
Petroleum Hydrocarbons										
Total Petroleum Hydrocarbons	9/12	2.7	9610	mg/kg	30SB02-0-2(93)	9610	NA	NA	--	340
TPH (C8-C40)	1/2	55.8	55.8	mg/kg	W30SB01301	55.8	NA	NA	--	340

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998.
(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for non-carcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January 21, 1999.
(4) Value is for cis-1,2-dichloroethene.
(5) Value is for naphthalene.
(6) Value is for chlordane.
(7) Value is for hexavalent chromium.
(8) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(9) Value is for mercuric chloride.
mg/kg - milligrams per kilogram.
NA - not available

detected at concentrations exceeding USEPA Region III RBCs or FDEP soil cleanup goals for residential soil. The distribution of VOCs in surface soil is shown in Figure 5-13.

Semivolatile Organic Compounds

Seven SVOCs [2-methylnaphthalene, bis(2-ethylhexyl)phthlate, dibenzofuran, fluorene, naphthalene, pentachlorophenol, and phenanthrene] were detected in 7 of 14 surface soil samples. The SVOCs 2-methylnaphthalene and bis(2-ethylhexyl)phthlate were the most frequently detected SVOCs with four detections each. Naphthalene had three detections, phenanthrene had two detections, and the remaining SVOCs each had one detection. The surface soil samples with the most SVOC detections and the highest concentrations were 30SB02-0-2 (five detections) located near the former waste oil tanks and 30B00201 (four detections) located at the wash rack area. Surface soil sample30SB00501 located east of the former waste oil tanks had three SVOC detections. Four other surface soil samples had one SVOC detection each.

Naphthalene was the SVOC with the highest concentration, 8600 μg/kg at 30B00301. Naphthalene concentrations ranged from 140 J μg/kg to 8600 μg/kg. No SVOCs were detected at concentrations exceeding USEPA Region III RBCs or FDEP soil cleanup goals for residential soil. The distribution of SVOCs in surface soil is shown in Figure 5-13.

Total Petroleum Hydrocarbons

TPH was detected in 10 of 14 surface soil samples. TPH concentrations ranged from 2.7 mg/kg at 30SB-0-2 to 9610 mg/kg at 30SB02-0-2. TPH concentrations in surface soil exceeded the FDEP soil cleanup goal of 350 mg/kg for residential soil at only samples 30SB02-0-2 (9610 mg/kg), 30SB03-0-2 (2660 mg/kg), and 30SB04-0-2 (855 mg/kg). Samples 30SB02-0-2 and 30SB04-0-2 were collected near the former waste oil tanks and 30SB03-0-2 is approximately 70 feet northeast of the former waste oil tanks.

Pesticides/PCBs

Three pesticide compounds were detected in three of eight surface soil samples. Dieldrin was detected three times at concentrations ranging from 1.9 J μg/kg at 30SB02-0-2 to 13 J μg/kg at 30SB03-0-2. Pesticide compounds 4,4'-DDD and gamma-chlordane were each detected once at 2.6 J μg/kg at 30SB02-0-2 and 0.4 J μg/kg at W30SB00901, respectively. Samples 30SB02-0-2 and W30SB00901 each had two pesticide compound detections. All of the surface soil samples with pesticide detections are located in or adjacent to grassy areas. No pesticide compounds were detected above USEPA Region III RBCs or FDEP soil cleanup goals for residential soil. The distribution of pesticide compounds in surface soil is presented in Figure 5-13. There were no positive detections of PCB compounds in the surface soil at Site 30.

Inorganics

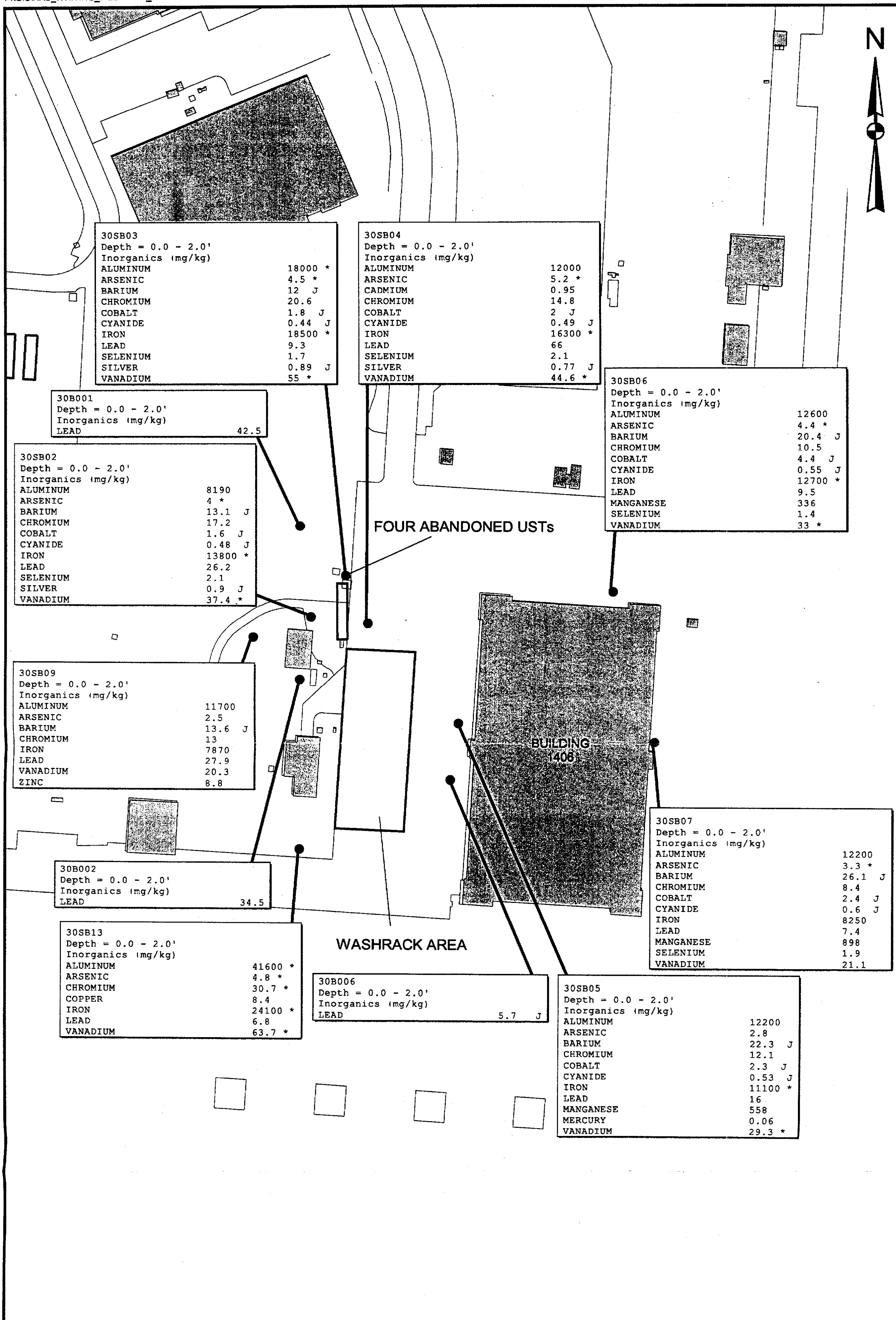
Twenty-two inorganic analytes were detected in eight of the surface soil samples, and lead was the only inorganic detected in six more samples. Eleven of the inorganic analytes (aluminum, arsenic, barium, calcium, chromium, copper, iron, lead, manganese, vanadium, and zinc) were detected in all of the samples. Fifteen non-nutrient analytes (aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, cyanide, iron, lead, manganese, selenium, silver, vanadium, and zinc) were detected above background concentrations for Troup soils.

Aluminum, arsenic, chromium, iron, manganese, and vanadium exceeded the USEPA Region III RBCs for residential soil. USEPA Region III RBCs for aluminum (7,800 mg/kg), arsenic (0.43 mg/kg), and iron (2,300 mg/kg) were exceeded in eight surface soil samples (30SB02-0-2, 30SB03-0-2, 30SB04-0-2, 30SB5-0-2, 30SB6-0-2, and 30SB7-0-2, W30SB00901, and W30SB01301). Arsenic and vanadium also exceeded the FDEP residential soil cleanup goals of 0.8 mg/kg and 15 mg/kg, respectively, in the same eight surface soil samples. Manganese (three detections) and vanadium (two detections) were detected at or above the USEPA Region III RBCs of 898 mg/kg and 55 mg/kg, respectively. Chromium was detected above the USEPA Region III RBC of 23 mg/kg in W30SB01301. The distribution of inorganic analytes detected above background concentrations is shown in Figure 5-14.

5.2.4.2 Subsurface Soil

Forty-seven subsurface soil samples including four duplicates have been collected at Site 30 for chemical analysis. Eighteen subsurface soil samples, including one duplicate collected in 1992/1993 and six collected in 1998, were analyzed for VOCs, SVOCs, pesticides/PCBs, TPH, and metals. Sixteen subsurface soil samples, including three duplicates collected in 1996, were analyzed for VOCs, SVOCs, TPH, and lead. Three subsurface soil samples collected in 1996 were analyzed for TPH only, five for total organic carbon (TOC) only, and one for TOC and TPH only. Subsurface soil sample locations are presented on Figure 5-15. Organic and inorganic analytical results are summarized in Table 5-15.

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 12-MAY-99 DNP INORGANICS IN SURFACE SOIL - SITE 30 LAYOUT

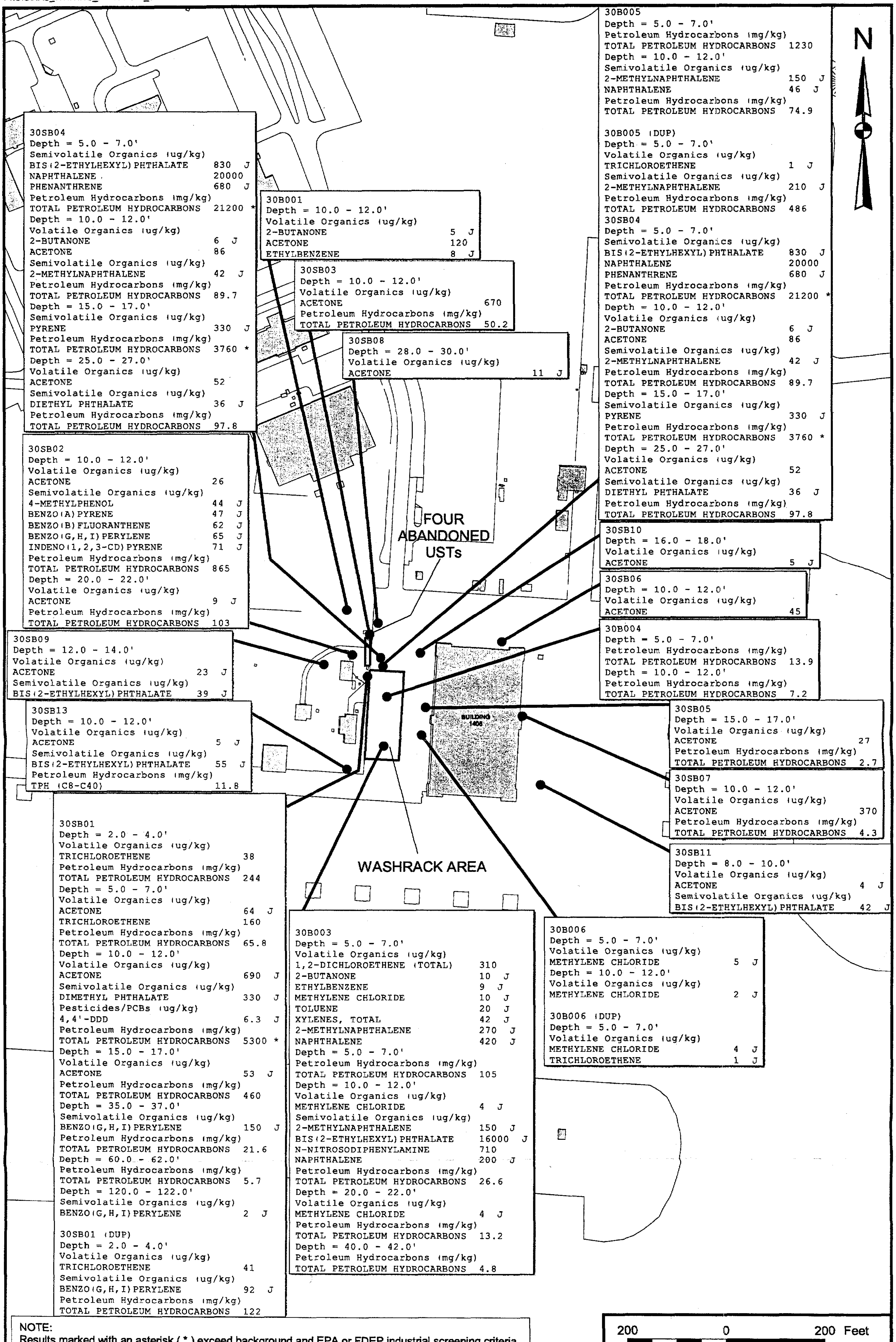


NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY J. BELLONE	DATE 15-SEP-99			CONTRACT NUMBER
CHECKED BY	DATE		INORGANICS IN SURFACE SOIL AT SITE 30 NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY — DATE —
COST/SCHEDULE-AREA				APPROVED BY — DATE —
SCALE AS NOTED				DRAWING NO. FIGURE 5-14 — REV 0

00241GB15Z

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 12-MAY-99 DNP ORGANICS IN SUBSURFACE SOIL - SITE 30 LAYOUT



NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99	ORGANICS IN SUBSURFACE SOIL AT SITE 30 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER:
CHECKED BY:	DATE:		APPROVED BY: / DATE:
COST/SCHEDULE-AREA			APPROVED BY: / DATE:
SCALE: AS NOTED			DRAWING NO. FIGURE 5-15 / REV 0

R4708989

TABLE 5-15
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 4

SAMPLE NUMBER	30B00102	30B00103	30B00108	30B00202	30B00202-D	30B00203	30B00208	30B00302	30B00303	30B00305	30B00307	30B00308
COLLECTION DATE	5/23/96	5/23/96	5/23/96	5/23/96	5/23/96	5/23/96	5/23/96	6/5/96	6/5/96	6/5/96	6/5/96	6/5/96
SAMPLE DEPTH	5 - 7'	10 - 12'	50 - 52'	5 - 7'	5 - 7'	10 -12'	50 - 52'	5 -7'	10 - 12'	20 - 22'	40 - 42'	50 - 52'
VOLATILES (µg/kg)												
1,2-DICHLOROETHENE (TOTAL)	NA		NA				NA	310			NA	NA
2-BUTANONE	NA	5 J	NA				NA	10 J			NA	NA
ACETONE	NA	120	NA				NA				NA	NA
ETHYLBENZENE	NA	8 J	NA				NA	9 J			NA	NA
METHYLENE CHLORIDE	NA		NA				NA	10 J	4 J	4 J	NA	NA
TOLUENE	NA		NA				NA	20 J			NA	NA
TRICHLOROETHENE	NA		NA				NA				NA	NA
XYLENES, TOTAL	NA		NA				NA	42 J			NA	NA
SEMIVOLATILES (µg/kg)												
2-METHYLNAPHTHALENE			NA				NA	270 J	150 J		NA	NA
4-METHYLPHENOL			NA				NA				NA	NA
BENZO(A)PYRENE			NA				NA				NA	NA
BENZO(B)FLUORANTHENE			NA				NA				NA	NA
BENZO(G,H,I)PERYLENE			NA				NA				NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE			NA				NA		16000 J		NA	NA
DIETHYL PHTHALATE			NA				NA				NA	NA
DIMETHYL PHTHALATE			NA				NA				NA	NA
INDENO(1,2,3-CD)PYRENE			NA				NA				NA	NA
N-NITROSODIPHENYLAMINE			NA				NA		710		NA	NA
NAPHTHALENE			NA				NA	420 J	200 J		NA	NA
PHENANTHRENE			NA				NA				NA	NA
PYRENE			NA				NA				NA	NA
PESTICIDES/PCBs (µg/kg)												
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
TOTAL PETROLEUM HYDROCARBONS	NA		NA					105	26.6	13.2	4.8	NA
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)												
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	11.1	5.9	NA	1.8	1.9	5.4	NA	5.2 J	5.5 J	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (mg/kg)												
TOTAL ORGANIC CARBON (mg/kg)	NA	923	53.1	NA	NA	1890	121	NA	883	NA	NA	92.3

TABLE 5-15
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 4

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	30B00402 6/4/96 5 - 7'	30B00403 6/4/96 10 - 12'	30B00408 6/4/96 50 - 52'	30B00502 6/4/96 5 - 7'	30B00502-D 6/4/96 5 - 7'	30B00503 6/4/96 10 - 12'	30B00508 6/4/96 50 - 52'	30B00602 6/5/96 5 - 7'	30B00602-D 6/5/96 5 - 7'	30B00603 6/5/96 10 - 12'	30B00608 6/5/96 50 - 52'	30SB02-10-12 1/4/93 10 - 12'
VOLATILES (µg/kg)												
1,2-DICHLOROETHENE (TOTAL)			NA				NA				NA	
2-BUTANONE			NA				NA				NA	
ACETONE			NA				NA				NA	26
ETHYLBENZENE			NA				NA				NA	
METHYLENE CHLORIDE			NA				NA	5 J	4 J	2 J	NA	
TOLUENE			NA				NA				NA	
TRICHLOROETHENE			NA		1 J		NA		1 J		NA	
XYLENES, TOTAL			NA				NA				NA	
SEMIVOLATILES (µg/kg)												
2-METHYLNAPHTHALENE			NA		210 J	150 J	NA				NA	
4-METHYLPHENOL			NA				NA				NA	44 J
BENZO(A)PYRENE			NA				NA				NA	47 J
BENZO(B)FLUORANTHENE			NA				NA				NA	62 J
BENZO(G,H,I)PERYLENE			NA				NA				NA	65 J
BIS(2-ETHYLHEXYL)PHTHALATE			NA				NA				NA	
DIETHYL PHTHALATE			NA				NA				NA	
DIMETHYL PHTHALATE			NA				NA				NA	
INDENO(1,2,3-CD)PYRENE			NA				NA				NA	71 J
N-NITROSODIPHENYLAMINE			NA				NA				NA	
NAPHTHALENE			NA			46 J	NA				NA	
PHENANTHRENE			NA				NA				NA	
PYRENE			NA				NA				NA	
PESTICIDES/PCBs (µg/kg)												
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
TOTAL PETROLEUM HYDROCARBONS	13.9	7.2		1230	486	74.9					NA	865
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)												
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	965
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.2 J
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.2 J
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	156 J
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.93 J
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.53 J
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1770
LEAD	5.1 J	2.4 J	NA	4.3 J	3.9 J	4.2 J	NA	4.5 J	5.0 J	6.9 J	NA	2.1
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14 J
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.9 J
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.2 J
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL ORGANIC CARBON (mg/kg)												
TOTAL ORGANIC CARBON (mg/kg)	NA	260	42.7	NA	NA	453	71.6	NA	NA	839	50.5	NA

TABLE 5-15
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB02-20-22	30SB03-10-12	30SB04-5-7	30SB1-10-12	30SB1-120	30SB1-15-17	30SB1-2-4	30SB1-2-4-D	30SB1-35-37	30SB1-5-7	30SB1-60-62	30SB4-10-12	30SB4-15-17	30SB4-25-27
COLLECTION DATE	1/4/93	1/4/93	1/4/93	12/6/92	12/6/92	12/6/92	12/6/92	12/6/92	12/6/92	12/6/92	12/6/92	1/5/93	1/5/93	1/5/93
SAMPLE DEPTH	20 - 22'	10 - 12'	5 - 7'	10 - 12'	120 - 122'	15 - 17'	2 - 4'	2 - 4'	35 - 37'	5 - 7'	60 - 62'	10 - 12'	15 - 17'	25 - 27'
VOLATILES (µg/kg)														
1,2-DICHLOROETHENE (TOTAL)														
2-BUTANONE												6 J		
ACETONE	9 J	670		690 J		53 J				64 J		86		52
ETHYLBENZENE														
METHYLENE CHLORIDE														
TOLUENE														
TRICHLOROETHENE							38	41		160				
XYLENES, TOTAL														
SEMIVOLATILES (µg/kg)														
2-METHYLNAPHTHALENE												42 J		
4-METHYLPHENOL														
BENZO(A)PYRENE														
BENZO(B)FLUORANTHENE														
BENZO(G,H,I)PERYLENE					2 J			92 J	150 J					
BIS(2-ETHYLHEXYL)PHTHALATE			830 J											
DIETHYL PHTHALATE														36 J
DIMETHYL PHTHALATE				330 J										
INDENO(1,2,3-CD)PYRENE														
N-NITROSODIPHENYLAMINE														
NAPHTHALENE			20000											
PHENANTHRENE			680 J											
PYRENE													330 J	
PESTICIDES/PCBs (µg/kg)														
4,4'-DDD				6.3 J										
TOTAL PETROLEUM HYDROCARBONS (mg/kg)														
TOTAL PETROLEUM HYDROCARBONS	103	50.2	21200	5300		460	244	122	21.6	65.8	5.7	89.7	3760	97.8
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)														
ALUMINUM	127	5000	6550	999	1270	814	14600	15700	138	11000	618	15900	115	105
ARSENIC		1.1 J	0.67 J	1 J		0.19 J	2.5	1.5 J		1.3 J		2.1 J		
BARIUM		2.7 J	8.4 J	0.8 J	3.3 J	0.51 J	15.8 J	17.4 J	0.37 J	17.1 J	0.6 J	4.5 J	0.2 J	
CADMIUM					0.71 J		0.5 J	0.65 J		0.4 J				
CALCIUM	34.4 J	131 J	190 J	250 J	175 J	116 J	567 J	548 J	118 J	787 J	108 J	99.5 J	139 J	16.5 J
CHROMIUM	0.63 J	5.1	9.5	2.2 J	4.4	2.7	14.6	15.3	1.1 J	11.1	1.5 J	15.6	1.5 J	1.7 J
COBALT			1 J							1.8 J		1.2 J		
COPPER	0.6 J	1.1 J	1.1 J	1.9 J	3 J	0.98 J	4.8 J	5 J	0.62 J	3.9 J	0.83 J	4.4 J	4.6 J	0.75 J
CYANIDE	0.51 J	0.37 J	0.51 J									0.45 J	0.48 J	0.48 J
IRON	113	5520	12400	2390	17800	846	12800	13800	199	10400	104	13900	231	114
LEAD	0.27 J	2.2	22	1.5	1.4	0.36 J	7.7	7.8	0.23 J	8.1	0.3 J	4		
MAGNESIUM		31.7 J	36 J	22.1 J	50.5 J	10.4 J	180 J	191 J	11.3 J	146 J	13.5 J	56.6 J	70.7 J	
MANGANESE	0.29 J	7.5	26.3	2.4 J	4.4	2.4 J	82.3	140	0.96 J	177	1.2 J	10	0.7 J	
MERCURY			0.03 J				0.04 J	0.05 J		0.04 J				
NICKEL								2.3 J						
POTASSIUM				98.2 J	135 J	65.9 J	171 J	215 J	49.2 J	97.8 J	83.8 J			
SELENIUM					0.4 J		0.76 J	0.15 J		0.18 J		0.97 J		
SILVER		0.67 J	0.94 J				0.52							
SODIUM	33.9 J			199 J	257 J	172 J	201 J	168 J	203 J	214 J	134 J			
VANADIUM	0.73 J	21.4	32.6	11.5	12.3 J	3.1 J	34.6	36.2	0.77 J	27.3	0.87 J	39.7	0.99 J	1.1 J
ZINC														
TOTAL ORGANIC CARBON (mg/kg)														
TOTAL ORGANIC CARBON (mg/kg)	2.5 J	0.64 J	1.2 J	2 J	10.5 J	1.9 J	7.7	6.8	3 J	6.7	1.4 J	0.86 J	2.3 J	0.56 J

TABLE 5-15
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	30SB5-15-17 1/5/93 15 - 17'	30SB6-10-12 1/5/93 10 - 12'	30SB7-10-12 1/5/93 10 - 12'	W30SB00801 3/22/98 28 - 30'	W30SB00902 3/23/98 12 - 14'	W30SB01001 3/21/98 16 - 18'	W30SB01101 3/21/98 8 - 10'	W30SB01201 3/21/98 12 - 14'	W30SB01303 3/23/98 10 - 12'
VOLATILES (µg/kg)									
1,2-DICHLOROETHENE (TOTAL)									
2-BUTANONE									
ACETONE	27	45	380	11 J	23 J	5 J	4 J		5 J
ETHYLBENZENE									
METHYLENE CHLORIDE									
TOLUENE									
TRICHLOROETHENE									
XYLENES, TOTAL									
SEMIVOLATILES (µg/kg)									
2-METHYLNAPHTHALENE									
4-METHYLPHENOL									
BENZO(A)PYRENE									
BENZO(B)FLUORANTHENE									
BENZO(G,H,I)PERYLENE									
BIS(2-ETHYLHEXYL)PHTHALATE					39 J		42 J		55 J
DIETHYL PHTHALATE									
DIMETHYL PHTHALATE									
INDENO(1,2,3-CD)PYRENE									
N-NITROSODIPHENYLAMINE									
NAPHTHALENE									
PHENANTHRENE									
PYRENE									
PESTICIDES/PCBs (µg/kg)									
4,4'-DDD									
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
TOTAL PETROLEUM HYDROCARBONS	2.7		4.3	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
TPH (C8-C40)	NA	NA	NA						11.8
METALS (mg/kg)									
ALUMINUM	2720	3230	5720	392	436	269	37000	41800	5150
ARSENIC	2 J	8.6	6		2.8		5.4	6.6	1.3
BARIUM	1.8 J	4.7 J	6.8 J				6.9 J	7.5 J	1.5 J
CADMIUM									
CALCIUM			65.4 J					181	
CHROMIUM	4.4	7.5	15.4	3.1	3	4.1	28	37.8	12.3
COBALT		2.3 J	1.9 J						
COPPER	0.48 J				0.76		7.4	9.1	1.5
CYANIDE	0.46 J	0.53 J	0.52 J						
IRON	*4500*	*19800*	*15900*	*67*	1330	309	19300	24500	*7210*
LEAD	1.9	9.4	7.1	0.51	0.84	0.56	6	5.8	1.6
MAGNESIUM	8.9 J	43.9 J	49.7 J				98.2	115	
MANGANESE	9	88.1	26.7	0.43	0.47	3.2	29.8	17.7	3.6
MERCURY	0.04 J	0.02 J	0.02 J						
NICKEL				0.35		0.4	2.6 J	3.3 J	0.53
POTASSIUM				*8.6*	*18.2*	10.9			7.3
SELENIUM		1.8	3.1						
SILVER		0.84 J							
SODIUM								51.4	
VANADIUM	12.4	40.4	43.9	0.35	7.1	1.7	52	63.5	16.3
ZINC									
TOTAL ORGANIC CARBON (mg/kg)									
TOTAL ORGANIC CARBON (mg/kg)	0.5 J		0.88 J			0.93	3.7 J	3.4 J	0.98

Notes:
The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
mg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

Table 5-16 summarizes the statistical analysis of the data and background concentrations. Background concentrations are based on Troup loamy soil found at Site 30. USEPA Region III RBCs and the FDEP soil cleanup goals for industrial soils are also presented in Table 5-16.

Volatile Organic Compounds

Eight VOCs [1,2-dichloroethene (total), 2-butanone, acetone, ethylbenzene, methylene chloride, toluene, TCE, and xylenes] were detected in 23 of 36 subsurface soil samples and 3 of 4 duplicates. Acetone (17 detections), methylene chloride (5 detections), and TCE (4 detections) were the most frequently detected VOCs. The VOC 2-butanone was detected three times, ethylbenzene two times, and the remaining VOCs were detected once each. Subsurface soil sample 30SB00302 (5 to 7 feet bgs) from soil boring 30B003 had the highest number of VOC detections with six detections, ranging from 9 J µg/kg (ethylbenzene) to 310 µg/kg (1,2-dichloroethene). Subsurface soil sample 30SB00103 (10-12 feet bgs) at soil boring 30B001 had the next highest number of VOC detections with three (2-butanone at 5 J µg/kg, acetone at 120 µg/kg, and ethylbenzene at 8 J µg/kg). Soil boring 30B003 is located near the wash rack area and 30B001 is approximately 110 feet north of the former waste oil tanks. The remaining subsurface soil samples had two or less VOC detections.

Acetone was the VOC with the highest detected concentration (690 J µg/kg at 30SB01-10-12 at 10 to 12 feet bgs). Acetone concentrations ranged from 4 J µg/kg at W30SB01101 (8 to 10 feet bgs) to 690 µg/kg at 30SB01-10-12 (10 to 12 feet bgs). The VOC 1,2-dichloroethene at 310 µg/kg (30B00302 at 5 to 7 feet bgs) had the next highest VOC concentration. TCE concentrations ranged from 1 J µg/kg (30B00502 at 5 to 7 feet bgs) to 160 µg/kg (30SB01-5-7). No VOCs were detected at concentrations exceeding USEPA Region III RBCs or FDEP cleanup goals for industrial soil. The distribution of VOCs in subsurface soil is shown in Figure 5-15.

Semivolatile Organic Compounds

Thirteen SVOCs were detected in 16 of 36 subsurface soil samples. The most frequently detected SVOCs were 2-methylnaphthalene and bis(2-ethylhexyl)phthalate with five detections each. Benzo(g,h,i)perylene and naphthalene each had four detections and the remaining SVOCs had one detection each. The subsurface soil samples with the most SVOC detections were 30SB02-10-12 (five detections) located near the former waste oil tanks, 30B00303 (four detections) located at the wash rack area, and 30SB04-5-7 located near the former waste oil tanks. The remaining subsurface soil samples had two or less SVOC detections each.

TABLE 5-16
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 of 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value(1)	Screening Toxicity Value: Region III RBC(2) Soil Industrial	Screening Toxicity Value: Region III RBC(2) Soil Basis	Screening Toxicity Value: Florida(3) Soil Industrial
Volatiles										
1,2-Dichloroethene (total)	1/36	0.31	0.31	mg/kg	30B00302	0.31	NA	1800	N	130(4)
2-Butanone	3/30	0.005	0.01	mg/kg	30B00302	0.01	NA	120000	N	21000
Acetone	17/36	0.004	0.69	mg/kg	30SB1-10-12(92)	0.69	NA	20000	N	5500
Ethylbenzene	2/36	0.008	0.009	mg/kg	30B00302	0.009	NA	20000	N	8400
Methylene Chloride	5/36	0.002	0.01	mg/kg	30B00302	0.01	NA	760	C	23
Toluene	1/36	0.02	0.02	mg/kg	30B00302	0.02	NA	41000	N	2600
Trichloroethene	4/36	0.001	0.16	mg/kg	30SB1-5-7(92)	0.16	NA	520	C	8.5
Xylenes, Total	1/36	0.042	0.042	mg/kg	30B00302	0.042	NA	410000	N	40000
Semivolatiles										
2-Methylnaphthalene	5/36	0.042	0.27	mg/kg	30B00302	0.27	NA	0	N	560
4-Methylphenol	1/36	0.044	0.044	mg/kg	30SB02-10-12(93)	0.044	NA	1000	N	3000
Benzo(a)pyrene	1/36	0.047	0.047	mg/kg	30SB02-10-12(93)	0.047	NA	0.78	C	0.5
Benzo(b)fluoranthene	1/36	0.062	0.062	mg/kg	30SB02-10-12(93)	0.062	NA	7.8	C	4.8
Benzo(g,h,i)perylene	4/36	0.002	0.15	mg/kg	30SB1-35-37(92)	0.15	NA	8200(5)		41000
Bis(2-Ethylhexyl)phthalate	5/36	0.039	16	mg/kg	30B00303	16	NA	410	C	280
Diethyl Phthalate	1/36	0.036	0.036	mg/kg	30SB4-25-27(93)	0.036	NA	160000	N	920000
Dimethyl Phthalate	1/36	0.33	0.33	mg/kg	30SB1-10-12(92)	0.33	NA	100000	N	NA
Indeno(1,2,3-cd)pyrene	1/36	0.071	0.071	mg/kg	30SB02-10-12(93)	0.071	NA	7.8	C	5.3
N-Nitrosodiphenylamine	1/36	0.71	0.71	mg/kg	30B00303	0.71	NA	1200	C	440
Naphthalene	4/36	0.046	20	mg/kg	30SB04-5-7(93)	20	NA	8200	N	270
Phenanthrene	1/36	0.68	0.68	mg/kg	30SB04-5-7(93)	0.68	NA	4100(5)	N	30000
Pyrene	1/36	0.33	0.33	mg/kg	30SB4-15-17(93)	0.33	NA	6100	N	37000
Pesticides/PCBs										
4,4'-DDD	1/23	0.0063	0.0063	mg/kg	30SB1-10-12(92)	0.0063	NA	24	C	18
Metals										
Aluminum	23/23	105	41800	mg/kg	W30SB01201	41800	13917	200000	N	NA
Arsenic	15/23	0.19	8.6	mg/kg	30SB6-10-12(93)	8.6	3.1	3.8	C	3.7
Barium	18/23	0.2	17.4	mg/kg	30SB1-2-4(92)-D	17.4	7.9	14000	N	87000
Cadmium	3/23	0.4	0.71	mg/kg	30SB1-120(92)	0.71	0.46	100	N	1300
Calcium	16/23	16.5	787	mg/kg	30SB1-5-7(92)	787	222	NA	-	NA

TABLE 5-16
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 of 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value: Region III RBC[2] Soil Industrial	Screening Toxicity Value: Region III RBC[2] Soil Basis	Screening Toxicity Value: Florida[3] Soil Industrial
Metals (Continued)										
Chromium	23/23	0.63	37.8	mg/kg	W30SB01201	37.8	11.4	610[6]	N	420[6]
Cobalt	5/23	1	2.3	mg/kg	30SB6-10-12(93)	2.3	0.74	12000	N	110000
Copper	18/23	0.48	9.1	mg/kg	W30SB01201	9.1	4.4	8200	N	73000
Cyanide	10/17	0.37	0.53	mg/kg	30SB02-10-12(93)	0.53	ND	4100	N	39000
Cyanide	10/17	0.37	0.53	mg/kg	30SB6-10-12(93)	0.53	ND	4100	N	39000
Iron	23/23	67	24500	mg/kg	W30SB01201	24500	9055	61000	N	480000
Lead	21/23	0.23	22	mg/kg	30SB04-5-7(93)	22	4.2	400[7]	-	920
Magnesium	17/23	8.9	191	mg/kg	30SB1-2-4(92)-D	191	136	NA	-	NA
Manganese	22/23	0.29	177	mg/kg	30SB1-5-7(92)	177	21.3	4100	N	22000
Mercury	6/23	0.02	0.05	mg/kg	30SB1-2-4(92)-D	0.05	ND	61[8]	N	26
Nickel	6/23	0.35	3.3	mg/kg	W30SB01201	3.3	2.5	4100	N	28000
Potassium	11/21	7.3	215	mg/kg	30SB1-2-4(92)-D	215	90.5	NA	-	NA
Selenium	6/23	0.15	3.1	mg/kg	30SB7-10-12(93)	3.1	0.15	1000	N	10000
Silver	4/23	0.52	0.94	mg/kg	30SB04-5-7(93)	0.94	0.56	1000	N	9100
Sodium	9/23	33.9	257	mg/kg	30SB1-120(92)	257	ND	NA	-	NA
Vanadium	23/23	0.35	63.5	mg/kg	W30SB01201	63.5	22.5	1400	N	7400
Zinc	19/23	0.5	10.5	mg/kg	30SB1-120(92)	10.5	7.8	61000	N	560000
Total Petroleum Hydrocarbons										
Total Petroleum Hydrocarbons	23/33	2.7	21200	mg/kg	30SB04-5-7(93)	21200	NA	NA	-	2500
TPH (c8-c40)	1/6	11.8	11.8	mg/kg	W30SB01303	11.8	NA	NA	-	2500
Total Organic Carbon										
Total Organic Carbon	12/12	42.7	1890	mg/kg	30B00203	1890	769	NA	-	NA

Notes.

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998.
(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for non-carcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January 21, 1999.
(4) Value is for cis-1,2-dichloroethene.
(5) Value is for naphthalene.
(6) Value is for hexavalent chromium.
(7) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(8) Value is for mercuric chloride.
The average of a sample and its duplicate is used for all calculations.
J - estimated value.
mg/kg - milligrams per kilogram.
NA - not available

Naphthalene was the SVOC with the highest concentration, 20,000 µg/kg at 30SB04 at 5 to 7 feet bgs. Naphthalene concentrations ranged from 46 J µg/kg to 20,000 µg/kg. No SVOCs were detected in the Site 30 subsurface soil samples at concentrations exceeding USEPA Region III RBCs or FDEP cleanup goals for industrial soil. The distribution of SVOCs in subsurface soil is shown in Figure 5-15.

Total Petroleum Hydrocarbons

TPH was detected in 24 of 39 subsurface soil samples. TPH concentrations ranged from 2.7 mg/kg at 30SB05 (15 to 17 feet bgs) to 21,200 mg/kg at 30SB04 (5 to 7 feet bgs). TPH concentrations in three subsurface soil samples at two locations (30SB1-10-12 at 5300 mg/kg, 30SB4-15-17 at 3760 mg/kg, and 30SB04- 5-7 at 21,200 mg/kg) exceeded the FDEP cleanup goal of 2500 mg/kg for industrial soil. The deepest soil sample at 25 to 27 feet bgs at 30SB04 had a TPH concentration (97.8 mg/kg) below the FDEP cleanup goal for industrial soil. Subsurface soil samples 30SB01 and 30SB04 are located near the former waste oil tanks.

Pesticides/PCBs

The pesticide 4,4'-DDD at 6.3 J µg/kg (30SB01-10-12 at 10 to 12 feet bgs) was the only pesticide compound detected in the 23 subsurface soil samples analyzed for pesticides. This concentration of 4,4'-DDD does not exceed the USEPA Region III RBCs or FDEP soil cleanup goals for industrial soils. PCBs were not detected in subsurface soil samples at Site 30.

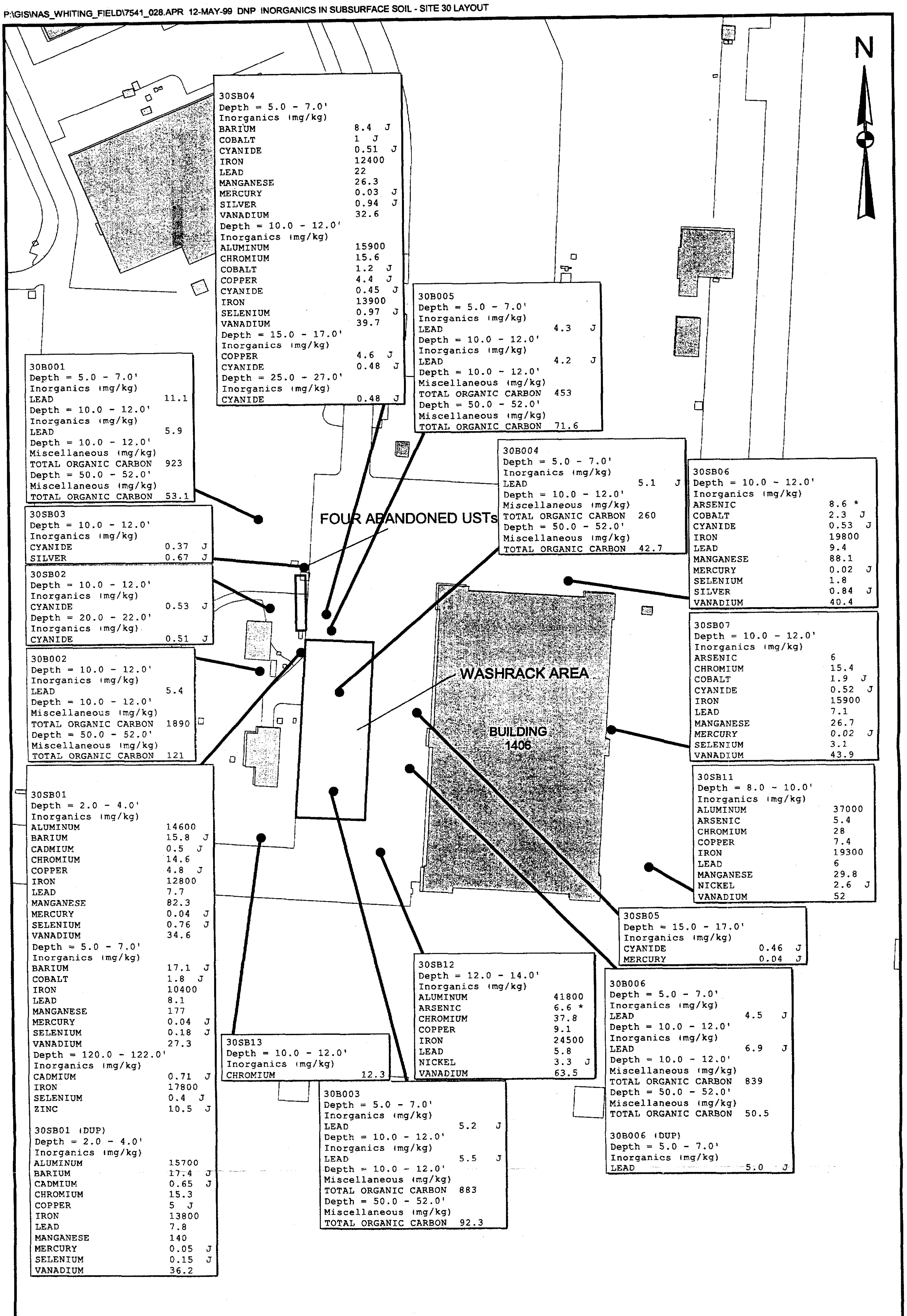
Inorganics

Twenty-two inorganic analytes were detected in 23 of the 24 subsurface soil samples analyzed for metals, and lead was the only inorganic analyte detected in 15 of 16 samples. Four of the inorganic analytes (aluminum, chromium, iron, and vanadium) were detected in all of the samples. Fifteen non-nutrient analytes (aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, silver, vanadium, and zinc) were detected above background concentrations for Troup soils. Only arsenic exceeded the USEPA Region III RBCs (3.8 mg/kg) and FDEP cleanup goals (3.7 mg/kg) for industrial soil. Arsenic concentrations ranged from 0.67 mg/kg at 30SB04 (5 to 7 feet bgs) to 8.6 mg/kg at 30SB06 (10 to 12 feet bgs). The distribution of inorganic analytes detected above background concentrations in subsurface soil is shown in Figure 5-16.

5.2.4.3 Summary

The source of chemicals detected in the surface and subsurface soils at Site 30 can be attributed to aircraft maintenance activities at the South Field Hangar, the former waste oil tanks, and aircraft cleaning

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 12-MAY-99 DNP INORGANICS IN SUBSURFACE SOIL - SITE 30 LAYOUT



NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99			CONTRACT NUMBER
CHECKED BY	DATE		INORGANICS IN SUBSURFACE SOIL AT SITE 30	APPROVED BY / DATE
COST/SCHEDULE-AREA			NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY / DATE
SCALE AS NOTED				DRAWING NO. FIGURE 5-16 / REV 0

00241G16Z

at the wash rack area located on the east side of the hangar. Chemicals detected in the surface and subsurface soils include VOCs, SVOCs, pesticide compounds, and inorganics.

5.2.5 Site 32

Surface and subsurface soil sampling has been conducted in three phases. Soil borings 32SB01 through 32SB08 were installed by ABB-ES in January 1993. The wash rack area was investigated in July 1993 with the installation of three soil borings (WR-SB01 - WR-SB03). Additional soil borings, 32SB09 through 32SB19, were installed by Tetra Tech NUS in March and April 1998 to sample previously uninvestigated soil gas hot spots and define the horizontal and vertical extent of soil contamination.

5.2.5.1 Surface Soil

Seven surface soil samples and one duplicate were collected at Site 32 in 1993. The soil samples were analyzed for VOCs, TPH, SVOCs, pesticides/PCBs, and metals. Surface soil sample locations are presented on Figure 3-1. Surface soil analytical results are summarized in Table 5-17. Table 5-18 summarizes the statistical analysis of the data and presents background concentrations. Background concentrations are based on Troup loamy soil found at Site 32. USEPA Region III residential RBCs for soils and the FDEP residential soil cleanup goals are also presented on Table 5-18.

Volatile Organic Compounds

Three VOCs, acetone, TCE, and xylenes, were detected in the surface soil samples from Site 32. Acetone was the most frequently detected compound with four detections ranging from an estimated 3 μg/kg (32SB2-0-2) to 200 μg/kg (32SB3-0-2). Trace levels of TCE were detected at 32SB1-1-2 (2 J μg/kg), and 32SB2-0-2 (1 J μg/kg) located adjacent to the east and west sides of Building 1424. Total xylenes were detected only in sample 32SB3-0-2 at an estimated concentration of 11 μg/kg. No VOCs were detected at concentrations exceeding USEPA Region III RBCs or FDEP soil cleanup goals for residential soil. The distribution of VOCs in surface soil is presented on Figure 5-17.

Semivolatile Organic Compounds

Nine SVOCs were detected at two surface soil sample locations (32SB3-0-2 and 32SB6-0-2) in the vicinity of the wash rack at Site 32. Sample 32SB6-0-2 contained eight SVOCs at concentrations ranging from an estimated 1,200 μg/kg of pyrene to 15,000 μg/kg of 2-methylnaphthalene. Sample 32SB3-0-2 contained five compounds ranging in concentration from an estimated 36 μg/kg of pyrene to 1,700 μg/kg

TABLE 5-17
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	32SB1-1-2 1/9/93 1 - 2'	32SB2-0-2 1/9/93 0 - 2'	32SB3-0-2 1/12/93 0 - 2'	32SB3-0-2-D 1/12/93 0 - 2'	32SB4-0-2 1/12/93 0 - 2'	32SB5-1-2 1/19/93 1 - 2'	32SB6-0-2 1/12/93 0 - 2'	32SB7-0-2 1/20/93 0 - 2'
VOLATILES (µg/kg)								
ACETONE		3 J	200	150	18			15 J
TRICHLOROETHENE	2 J	1 J						
XYLENES, TOTAL			11 J					
SEMIVOLATILES (µg/kg)								
2,4-DIMETHYLPHENOL							1500 J	
2-METHYLNAPHTHALENE			810	620			15000	
ACENAPHTHENE							1400 J	
FLUORANTHENE			53 J					
FLUORENE							2600 J	
N-NITROSODIPHENYLAMINE							1600 J	
NAPHTHALENE			1700	1400			2500 J	
PHENANTHRENE			120 J	63 J			5100 J	
PYRENE			36 J				1200 J	
PESTICIDES/PCBs (µg/kg)								
4,4'-DDD								2.2 J
4,4'-DDE								0.69 J
AROCLOR-1254							160 J	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)								
TOTAL PETROLEUM HYDROCARBONS			401	784		27.1	12300	7180
METALS (mg/kg)								
ALUMINUM	11000	21900	5740	9280	6580	21600	6980	9970
ANTIMONY		6 J						
ARSENIC	0.76 J		0.91 J	0.71 J	0.71 J	2.3 J	0.46 J	2.8
BARIUM	11.1 J	10.6 J	7.6 J	9.9 J	10.1 J	15.9 J	10.1 J	11.1 J
BERYLLIUM	0.06 J	0.12 J				0.22 J		0.09 J
CALCIUM	257 J	611 J	493 J	931 J	293 J	339 J	497 J	277 J
CHROMIUM	22.5	18	4.9	7.1	5.6	16.1	8.4	9.3
COBALT	1.1 J	1.8 J				0.75 J	1.4 J	1.5 J
COPPER	1.6 J	3 J	3.1 J	5.7	3.3 J	5.1 J	3.9 J	4.7 J
CYANIDE	0.58 J	0.47 J				0.48 J		0.46 J
IRON	9290	13200	4160	5250	3970	10800	3350	5100
LEAD	2.8	3.9	3	2.6	2.5	3.1	9.8	30.7
MAGNESIUM	81.7 J	130 J	44.4 J	84.4 J	114 J	207 J	131 J	147 J
MANGANESE	37.4	32.9	91.5	95	11.2	95.5	61.4	71
MERCURY	0.03 J	0.03 J	0.03	0.04	0.04 J	0.02 J	0.04	
NICKEL	3.9 J	4 J			4 J		2.5 J	2.8 J
POTASSIUM	198 J	273 J	180 J	210 J	161 J	119 J	203 J	257 J
SELENIUM			0.22 J			3.7		
SILVER	0.69 J	1.2 J						
SODIUM		13 J	172 J	159 J	175 J	14 J	193 J	21.3 J
VANADIUM	25.3	36.8	9.8 J	13.2	9.7 J	29.3	8.8 J	13.7
ZINC	1.9 J	3.5 J	3.5 J	4.9 J	5.1	6.8	8.5	10.6

TABLE 5-17
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA

Notes:

The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-18
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Concentration Used for Screening	Background Value [1]	Screening Toxicity Value: Region III RBC [2] Soil Residential	Screening Toxicity Value: Region III RBC [2] Soil Basis	Screening Toxicity Value: Florida [3] Soil Residential
Volatiles										
Acetone	0.003	0.2	mg/kg	32SB3-0-2(93)	4/7	0.2	NA	780	N	780
Trichloroethene	0.001	0.002	mg/kg	32SB1-1-2(93)	2/7	0.002	NA	58	C	6
Xylenes, Total	0.011	0.011	mg/kg	32SB3-0-2(93)	1/7	0.011	NA	16000	N	5900
Semivolatiles										
2,4-Dimethylphenol	1.5	1.5	mg/kg	32SB6-0-2(93)	1/7	1.5	NA	160	N	910
2-Methylnaphthalene	0.62	15	mg/kg	32SB6-0-2(93)	2/7	15	NA	160	N	83
Acenaphthene	1.4	1.4	mg/kg	32SB6-0-2(93)	1/7	1.4	NA	470	N	1900
Fluoranthene	0.053	0.053	mg/kg	32SB3-0-2(93)	1/7	0.053	NA	310	N	2900
Fluorene	2.6	2.6	mg/kg	32SB6-0-2(93)	1/7	2.6	NA	310	N	2200
N-Nitrosodiphenylamine	1.6	1.6	mg/kg	32SB6-0-2(93)	1/7	1.6	NA	130	C	170
Naphthalene	1.4	2.5	mg/kg	32SB6-0-2(93)	2/7	2.5	NA	160	N	40
Phenanthrene	0.063	5.1	mg/kg	32SB6-0-2(93)	2/7	5.1	NA	160 [4]	N	2000
Pyrene	0.036	1.2	mg/kg	32SB6-0-2(93)	2/7	1.2	NA	230	N	2200
Pesticides/PCBs										
4,4'-DDD	0.0022	0.0022	mg/kg	32SB7-0-2(93)	1/7	0.0022	NA	2.7	C	4.6
4,4'-DDE	0.0007	0.0007	mg/kg	32SB7-0-2(93)	1/7	0.0007	NA	1.9	C	3.3
Aroclor-1254	0.16	0.16	mg/kg	32SB6-0-2(93)	1/7	0.16	NA	0.32	N	0.5 [5]
Inorganics										
Aluminum	5740	21900	mg/kg	32SB2-0-2(93)	7/7	21900	7924	7800	N	72000
Antimony	6	6	mg/kg	32SB2-0-2(93)	1/7	6	4	3.1	N	26
Arsenic	0.46	2.8	mg/kg	32SB7-0-2(93)	6/7	2.8	1.6	0.43	C	0.8
Barium	7.6	15.9	mg/kg	32SB5-1-2(93)	7/7	15.9	11.6	550	N	110
Beryllium	0.06	0.22	mg/kg	32SB5-1-2(93)	4/7	0.22	0.18	16	N	120
Calcium	257	931	mg/kg	32SB3-0-2(93)-D	7/7	931	198	NA	--	NA
Chromium	4.9	22.5	mg/kg	32SB1-1-2(93)	7/7	22.5	5.5	23 [6]	N	210 [6]
Cobalt	0.75	1.8	mg/kg	32SB2-0-2(93)	5/7	1.8	1.5	470	N	4700
Copper	1.6	5.7	mg/kg	32SB3-0-2(93)-D	7/7	5.7	4.7	310	N	110
Cyanide	0.46	0.58	mg/kg	32SB1-1-2(93)	4/7	0.58	0.14	160	N	30
Iron	3350	13200	mg/kg	32SB2-0-2(93)	7/7	13200	4416	2300	N	23000
Lead	2.5	30.7	mg/kg	32SB7-0-2(93)	7/7	30.7	5.7	400 [7]	--	400
Magnesium	44.4	207	mg/kg	32SB5-1-2(93)	7/7	207	134	NA	--	NA
Manganese	11.2	95.5	mg/kg	32SB5-1-2(93)	7/7	95.5	196	160	N	1600
Mercury	0.02	0.04	mg/kg	32SB3-0-2(93)-D 32SB6-0-2(3) 32SB4-0-2(93)	6/7	0.04	0.06	2.3 [8]	N	3.4
Nickel	2.5	4	mg/kg	32SB2-0-2(93) 32SB4-02-(93)	5/7	4	3.6	160	N	110
Potassium	119	273	mg/kg	32SB2-0-2(93)	7/7	273	88.5	NA	--	NA
Selenium	0.22	3.7	mg/kg	32SB5-1-2(93)	2/7	3.7	0.23	39	N	390
Silver	0.69	1.2	mg/kg	32SB2-0-2(93)	2/7	1.2	0.35	39	N	390

TABLE 5-18
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Concentration Used for Screening	Background Value (1)	Screening Toxicity Value: Region III RBC (2) Soil Residential	Screening Toxicity Value: Region III RBC (2) Soil Basis	Screening Toxicity Value: Florida (3) Soil Residential
Inorganics (Continued)										
Sodium	13	193	mg/kg	32SB6-0-2(93)	6/7	193	203	NA	--	NA
Vanadium	8.8	36.8	mg/kg	32SB2-0-2(93)	7/7	36.8	10.9	55	N	15
Zinc	1.9	10.6	mg/kg	32SB7-0-2(93)	7/7	10.6	7.7	2300	N	23000
Petroleum Hydrocarbons										
Total Petroleum Hydrocarbons	27.1	12300	mg/kg	32SB6-0-2(93)	4/7	12300	NA	NA	--	340

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998.
(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for non-carcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C.
(4) Value is for naphthalene.
(5) Value is for total aroclor.
(6) Value is for hexavalent chromium.
(7) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(8) Value is for mercuric chloride.
mg/kg - milligrams per kilogram.
NA - not available

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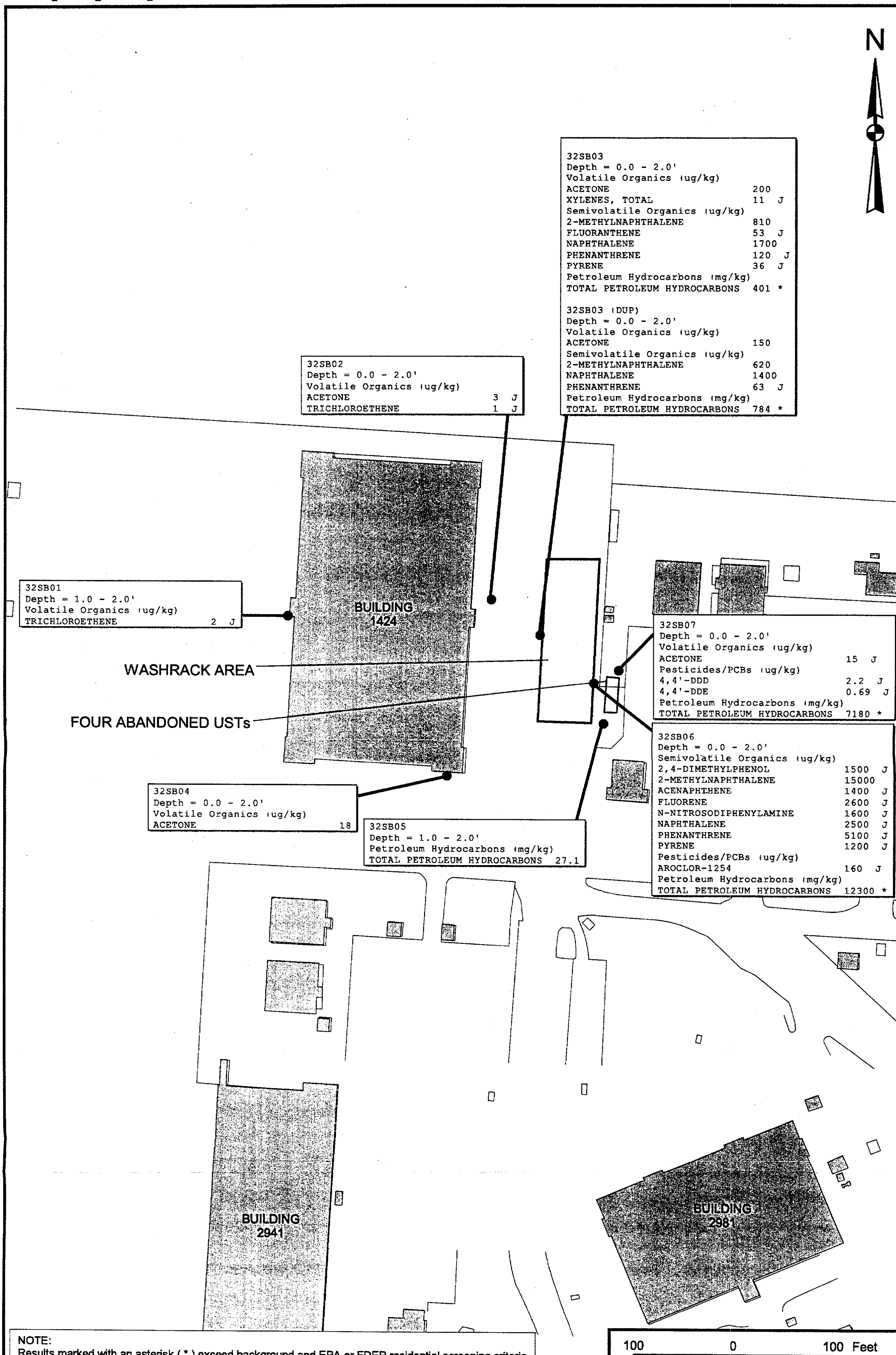

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY J. BELLONE	DATE 15-SEP-99			CONTRACT NUMBER
CHECKED BY	DATE		ORGANICS IN SURFACE SOIL AT SITE 32	APPROVED BY / DATE
COST/SCHEDULE-AREA			NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY / DATE
SCALE AS NOTED				DRAWING NO. FIGURE 5-17 / REV 0

Rev. 1
09/27/99

00241G172

of naphthalene. No SVOCs were detected at concentrations exceeding their respective USEPA RBCs or FDEP soil cleanup goals for residential soil. The extent of SVOCs in the surface soil at Site 32 is illustrated on Figure 5-17.

Total Petroleum Hydrocarbons

TPH was detected at four surface soil sample locations in the vicinity of the wash rack (32SB3-0-2, 32SB5-1-2, 32SB6-0-2, and 32SB7-0-2). Concentrations of TPH ranged from 27.1 mg/kg (32SB5-1-2) to 12,300 mg/kg (32SB6-0-2). TPH levels exceeded the FDEP soil cleanup goal of 350 mg/kg for residential soil at 32SB3-0-2, 32SB6-0-2, and 32SB7-0-2. The distribution of TPH is shown on Figure 5-17.

Pesticides/PCBs

Three pesticide/PCB compounds were detected in two surface soil samples at Site 32. Trace levels of 4,4'-DDD and 4,4'-DDE were detected in 32SB7-0-2 at estimated concentrations of 2.2 µg/kg and 0.69 µg/kg, respectively. Aroclor-1254 was detected at an estimated concentration of 160 µg/kg in 32SB6-0-2. No pesticide/PCB compounds were detected above FDEP soil cleanup goals or USEPA Region III RBCs for residential soil. The distribution of pesticide/PCBs in surface soils is presented in Figure 5-17.

Inorganics

Twenty-two inorganic analytes were detected in the surface soil at Site 32. Twelve of the analytes were detected in all seven samples and the duplicate. Sixteen non-nutrient analytes (aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, cyanide, iron, lead, nickel, selenium, silver, vanadium, and zinc) were detected at concentrations above background soil concentrations for Troup soils. Aluminum, antimony, arsenic, and iron exceeded USEPA Region III RBCs for residential soil.

Vanadium was detected above FDEP residential soil cleanup goals in three samples, 32SB1-1-2, 32SB2-0-2, and 32SB5-1-2; and arsenic was detected above FDEP residential soil cleanup goals in three samples, 32SB3-0-2, 32SB5-1-2, and 32SB7-0-2. Maximum concentrations were 36.8 mg/kg for vanadium, 21,900 mg/kg for aluminum, 6 mg/kg for antimony, and 13,200 mg/kg for iron, all in sample 32SB2-0-2. The maximum concentration for arsenic was 2.8 mg/kg in sample 32SB7-0-2. The distribution of inorganic constituents detected above background levels is shown on Figure 5-18.

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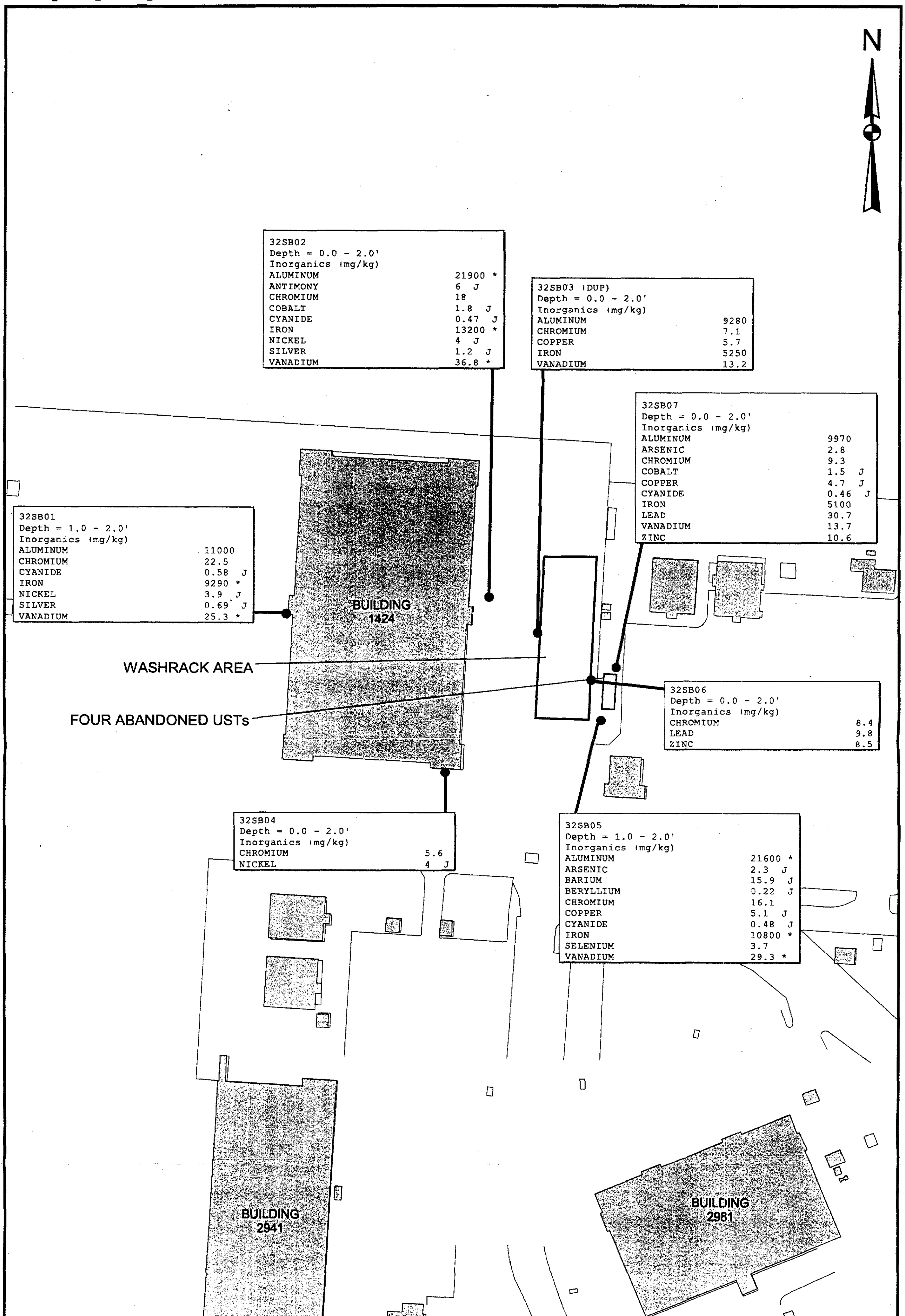

NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP residential screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99			CONTRACT NUMBER
CHECKED BY	DATE		INORGANICS IN SURFACE SOIL AT SITE 32 NAS WHITING FIELD, MILTON, FLORIDA	APPROVED BY / DATE
COST/SCHEDULE-AREA				APPROVED BY / DATE
SCALE: AS NOTED				DRAWING NO. FIGURE 5-18 / REV 0

5-86

Rev. 1
09/27/99

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5.2.5.2 Subsurface Soil

Seventy-four subsurface soil samples and 9 duplicate samples were collected from 22 soil borings, including 12 samples from 3 soil borings at the wash rack located on the east side of Building 1424. All samples were collected during the 1993 and 1998 investigations and were analyzed for VOCs, TPH, SVOCs, pesticides/PCBs, and inorganics. Cyanide was not included in the inorganic analyses during the 1998 soil investigation. Chromium was the only inorganic constituent analyzed for in the wash rack samples. Table 5-19 summarizes the subsurface soil analytical results. Table 5-20 summarizes the frequency of detections, range of detections, and background concentrations. USEPA Region III industrial RBCs for soils and the FDEP industrial soil cleanup goals are also presented on Table 5-20. Soil boring locations are displayed on Figure 3-1.

Volatile Organic Compounds

Twelve VOCs were detected in the subsurface soil at Site 32. All maximum VOC concentrations, except 2-butanone, carbon disulfide, and chloromethane, were detected in the wash rack borings. Boring WR-SB01 displayed the highest degree of VOC contamination at the site. Compounds identified at WR-SB01 include (with maximum concentrations): 1,2-DCE (430 J µg/kg), acetone (2,000 J µg/kg), ethylbenzene (5,100 µg/kg), methylene chloride (610 J µg/kg), PCE (1,700 J µg/kg), toluene (13,000 µg/kg), TCE (1,300 J µg/kg), and xylenes (32,000 µg/kg).

Acetone was the most common compound identified, being detected in 35 samples. Concentrations ranged from an estimated 2 µg/kg in 32SB1-5-7 to 2,100 µg/kg in WR-SB03-10-12. Benzene was detected in sample WR-SB03-15-17 at an estimated concentration of 1,400 µg/kg, below the USEPA Region III RBC and FDEP soil cleanup goal for industrial soil. The greatest depth at which VOCs were detected was 90 to 92 feet bgs at 32SB14 (acetone 100 µg/kg). No other VOC concentrations were above the FDEP industrial soil cleanup levels or USEPA Region III industrial RBCs for soil. The distribution of VOCs in the subsurface soil is shown on Figure 5-19.

Semivolatile Organic Compounds

Ten SVOCs were detected in the subsurface soil at Site 32 (Figure 5-19). Bis(2-ethylhexyl)phthalate was the most common compound with 17 positive detections ranging from 43 µg/kg to 600 µg/kg. The maximum concentration was detected in 32SB5-95-97 (95 to 97 feet bgs). Bis(2-ethylhexyl)phthalate is a commonly recognized field or laboratory derived contaminant according to USEPA (USEPA, 1994a).

TABLE 5-19
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 8

SAMPLE NUMBER	32SB1-10-12	32SB1-15-17	32SB1-15-17-D	32SB1-20-22	32SB1-25-27	32SB1-35-37	32SB1-35-37-D	32SB1-5-7	32SB1-50-52	32SB2-12-14	32SB2-5-7	32SB3-10-12	32SB3-20-22
COLLECTION DATE	1/9/93	1/11/93	1/11/93	1/12/93	1/12/93	1/12/93	1/12/93	1/9/93	1/9/93	1/12/93	1/12/93	1/12/93	1/12/93
SAMPLE DEPTH	10 - 12'	15 - 17'	15 - 17'	20 - 22'	25 - 27'	35 - 37'	35 - 37'	5 - 7'	50 - 52'	12 - 14'	5 - 7'	10 - 12'	20 - 22'
VOLATILES (ug/kg)													
1,2-DICHLOROETHENE (TOTAL)													
2-BUTANONE												8 J	
ACETONE			8	65	34	69	44	2 J	44	130	110	230	110
BENZENE													
CARBON DISULFIDE													
CHLOROMETHANE													
ETHYLBENZENE													
METHYLENE CHLORIDE			4										
TETRACHLOROETHENE													
TOLUENE													
TRICHLOROETHENE													
XYLENES, TOTAL													
SEMIVOLATILES (ug/kg)													
2,4-DIMETHYLPHENOL													
2-METHYLNAPHTHALENE													
ACENAPHTHENE													
ANTHRACENE													
BIS(2-ETHYLHEXYL)PHTHALATE													
CARBAZOLE											39 J		
DI-N-OCTYL PHTHALATE											40 J		
DIBENZOFURAN													
FLUORANTHENE													
FLUORENE													
N-NITROSODIPHENYLAMINE													
NAPHTHALENE													
PHENANTHRENE													
PYRENE													
PESTICIDES/PCBs (ug/kg)													
4,4'-DDD													
4,4'-DDE													
AROCLOR-1254													
TOTAL PETROLEUM HYDROCARBONS (mg/kg)													
TOTAL PETROLEUM HYDROCARBONS												63.2	
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)													
ALUMINUM	4450	2410	3120	277	376	379	6.9 J	2630	215	3920	14500	6070	1940
ANTIMONY													
ARSENIC								0.91 J		1 J	0.81 J	1.3 J	0.18 J
BARIUM	6 J	5.6	5.9	0.47 J	1.1 J	0.06 J		5.5 J	0.12 J	6.2 J	13.1 J	6.5 J	3.6 J
BERYLLIUM													
CADMIUM							0.4 J						
CALCIUM	32 J	28.6	25.5	93.1 J	77.9 J	82.6 J		42.6 J	63 J	204 J	308 J	132 J	77.8 J
CHROMIUM	4.3	4.6	4.2		0.91 J	1.1 J		4.3		10.2	10	5.5	2.7
COBALT	0.53 J		0.75					1 J					
COPPER	0.98 J	0.49	1.1	0.85 J	1.1 J	0.8 J		0.71 J	0.79 J	2.1 J	4 J	4.2 J	1.3 J
CYANIDE	0.55 J	0.48	0.68					0.51 J					
IRON	7120	3540	1970	121	232	176		5520	29.8	4960	8950	3950	647
LEAD	2	2	2.1	0.6 J	0.38 J	0.42 J	0.43 J	3.1	0.13 J	3	3.3	3.8	1.1
MAGNESIUM	60.9 J	52	65.5	15.4 J	24.6 J	13.1 J	20 J	59 J	14.7 J	52.1 J	119 J	81.5 J	42.7 J
MANGANESE	6.7	4.3	4.7	0.86 J	1.7 J	1.8 J		8.2	0.56 J	14.4	39.3	6.2	3.5
MERCURY	0.02 J	0.02		0.04 J	0.03 J	0.04 J	0.06 J	0.03 J	0.03 J	0.04	0.04	0.03	0.03 J
NICKEL											2 J	2.3 J	
POTASSIUM	320 J	242	412	41.9 J	72.3 J	54.2 J	75.7 J	281 J	63.8 J	130 J	165 J	672 J	144 J
SELENIUM								1.2			0.11 J		
SILVER	0.96 J	0.91	0.91					0.89 J					
SODIUM	76.8 J	19.7	20.1	160 J	184 J	166 J		75.6 J	140 J	234 J	181 J	214 J	196 J
VANADIUM	28.3	15.6	12.5	0.53 J	1.4 J	0.56 J	0.5 J	18.7		15.2	20.4	15.8	6.6 J
ZINC		0.42	0.8	2.1 J	2.8 J	2 J		0.52 J	2.9 J	4.1 J	7.5 J	2.9 J	2.6 J

TABLE 5-19
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 8

SAMPLE NUMBER	32SB3-30-32	32SB3-5-7	32SB4-15-17	32SB4-20-22	32SB4-20-22-D	32SB4-25-27	32SB4-35-37	32SB4-45-47	32SB5-10-12	32SB5-20-22	32SB5-45-47	32SB5-45-47-D
COLLECTION DATE	1/12/93	1/12/93	1/12/93	1/12/93	1/12/93	1/12/93	1/12/93	1/12/93	1/19/93	1/19/93	1/19/93	1/19/93
SAMPLE DEPTH	30 - 32'	5 - 7'	15 - 17'	20 - 22'	20 - 22'	25 - 27'	35 - 37'	45 - 47'	10 - 12'	20 - 22'	45 - 47'	45 - 47'
VOLATILES (ug/kg)												
1,2-DICHLOROETHENE (TOTAL)												
2-BUTANONE		6 J							4 J		13 J	9 J
ACETONE	58	170	55	100	58	48	53	33	34	20	22 J	11
BENZENE												
CARBON DISULFIDE												
CHLOROMETHANE												
ETHYLBENZENE												
METHYLENE CHLORIDE												
TETRACHLOROETHENE												
TOLUENE												
TRICHLOROETHENE												
XYLENES, TOTAL												
SEMIVOLATILES (ug/kg)												
2,4-DIMETHYLPHENOL												
2-METHYLNAPHTHALENE												
ACENAPHTHENE												
ANTHRACENE												
BIS(2-ETHYLHEXYL)PHTHALATE												
CARBAZOLE												
DI-N-OCTYL PHTHALATE												
DIBENZOFURAN												
FLUORANTHENE		39 J										
FLUORENE												
N-NITROSODIPHENYLAMINE												
NAPHTHALENE												
PHENANTHRENE												
PYRENE												
PESTICIDES/PCBs (ug/kg)												
4,4'-DDD												
4,4'-DDE												
AROCLOR-1254												
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
TOTAL PETROLEUM HYDROCARBONS		13					2					
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)												
ALUMINUM	640	10800	8900	951	1100	751	458	156	6650	4920	1500	838
ANTIMONY												
ARSENIC		1.1 J	2.1 J		0.18 J				1.8 J	1.6 J	1.1 J	1.4 J
BARIUM	1.2 J	13.7 J	7 J	2.5 J	2.8 J	2.1 J	1.1 J	0.06 J	6.3 J	6.4 J	1.3 J	1.6 J
BERYLLIUM									0.08 J			
CADMIUM	0.26											
CALCIUM	133 J	155 J	151 J	98 J	95.6 J	96.5 J	105 J	91.1 J	355 J	24.5 J		
CHROMIUM	0.94 J	8.9	24.6	1.7 J	1.6 J		0.92 J		7.4	5.4	1.4 J	1 J
COBALT		1.5 J										
COPPER	7.8	4.3 J	5.3 J	1.1 J	1.4 J	1.4 J	0.97 J	0.8 J	2.1 J	0.98 J		0.58 J
CYANIDE									0.56 J	0.58 J	0.51 J	0.51 J
IRON	88.8	6130	13300	1230	1190	324	75.7	44.6 J	5440	1420	79.7	79.1
LEAD	0.32 J	3.8	2.8	1.2	1.2	0.7	0.25 J	0.19 J	2.1 J	1.7	0.42 J	0.7
MAGNESIUM	24.5 J	117 J	74.6 J	31 J	31 J	28.6 J	14.7 J	10.4 J	54.2 J	53.4 J		7.9 J
MANGANESE	0.87 J	21.2	8.9	2.3 J	2.1 J		0.21 J		27.1	4.6	1.3 J	0.92 J
MERCURY	0.03 J	0.03	0.04 J			0.04 J	0.03 J	0.05 J				
NICKEL	1.7 J	2.3 J					2.2 J	1.8 J				
POTASSIUM		541 J	76.5 J	116 J	69.4 J	59.4 J	43.4 J	54.3 J	223 J	145 J		
SELENIUM			0.12 J						0.53 J	0.59 J		0.52 J
SILVER												
SODIUM	173 J	196 J	209 J	162 J	183 J	199 J	174 J	157 J	18 J	20.4 J	14.9 J	
VANADIUM	0.6 J	15.5	50.5	8.4 J	7.8 J	2.3 J			25.4	11.6 J	0.95 J	0.95 J
ZINC	2.7 J	5.6	5.9 J	1.9 J	2.5 J	1.8 J	1.9 J	3.7 J	1.9 J	1.1 J	0.91 J	1.3 J

TABLE 5-19
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 3 OF 8

SAMPLE NUMBER	32SB5-5-7	32SB5-61-63	32SB5-95-97	32SB6-10-12	32SB6-20-22	32SB6-30-32	32SB6-45-47	32SB6-45-47-D	32SB6-5-7	32SB6-5-7-D	32SB7-15-17	32SB7-30-32	32SB7-5-7
COLLECTION DATE	1/19/93	1/20/93	1/20/93	1/12/93	1/12/93	1/12/93	1/12/93	1/12/93	1/11/93	1/11/93	1/20/93	1/21/93	1/20/93
SAMPLE DEPTH	5 - 7'	61 - 63'	95 - 97'	10 - 12'	20 - 22'	30 - 32'	45 - 47'	45 - 47'	5 - 7'	5 - 7'	15 - 17'	30 - 32'	5 - 7'
VOLATILES (ug/kg)													
1,2-DICHLOROETHENE (TOTAL)													
2-BUTANONE		50 J								3 J			
ACETONE		57 J	35 J	75	47	49	72	95	54 J	75			
BENZENE													
CARBON DISULFIDE													
CHLOROMETHANE													
ETHYLBENZENE													
METHYLENE CHLORIDE													
TETRACHLOROETHENE													
TOLUENE											1100 J		
TRICHLOROETHENE													
XYLENES, TOTAL											11000	770 J	
SEMIVOLATILES (ug/kg)													
2,4-DIMETHYLPHENOL													
2-METHYLNAPHTHALENE									52 J		27000	2600	3200
ACENAPHTHENE													
ANTHRACENE											53 J		
BIS(2-ETHYLHEXYL)PHTHALATE			600 J						73 J		440 J		
CARBAZOLE													
DI-N-OCTYL PHTHALATE													
DIBENZOFURAN													
FLUORANTHENE											40 J		
FLUORENE											1000 J	220 J	
N-NITROSODIPHENYLAMINE													
NAPHTHALENE											21000	1100	7200
PHENANTHRENE									59 J		340 J	79 J	
PYRENE													
PESTICIDES/PCBs (ug/kg)													
4,4'-DDD													
4,4'-DDE													
AROCLOR-1254													
TOTAL PETROLEUM HYDROCARBONS (mg/kg)													
TOTAL PETROLEUM HYDROCARBONS	5.8			62.5					104	315	2580	2650	2310
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)													
ALUMINUM	33200	343	789	26100	245	429	369	419	10200	13900	2780	302	14700
ANTIMONY													
ARSENIC	2.1 J	0.4 J	0.37 J	3.3			0.2 J		1.8 J	1.7 J	1.8 J	0.41 J	2.7
BARIUM	16.5 J	0.14 J	1.9 J	14.7 J	0.12 J	0.12 J	1.1 J	0.13 J	12.7 J	16.7 J	4.4 J	0.43 J	18.7 J
BERYLLIUM	0.21 J										0.07 J		0.11 J
CADMIUM				0.44 J									
CALCIUM	251 J	32 J	8.2 J	138 J	62.7 J	57.2 J	83.9 J	76.4 J	335 J	502 J	11.6 J		168 J
CHROMIUM	26.3	2.3	2 J	24		1.3 J	1.5 J	0.88 J	11.2	12.9	2.9	0.87 J	14.7
COBALT		0.51 J	0.88 J								0.99 J		2.5 J
COPPER	7.2	0.53 J	1.3 J	8.4	0.75 J	0.79 J	1.2 J	0.77 J	5.2 J	7.8	0.85 J	0.64 J	3.8 J
CYANIDE	0.56 J	0.4 J	0.45 J								0.49 J	0.49 J	0.52 J
IRON	16000	190	98.2	12100	82	64.8	102	114	9470	9630	1600	77.4	7250
LEAD	3	0.2 J	1.2 J	3.4	0.23 J	0.19 J	0.61 J	0.37 J	3.7	3.3	2.1 J	0.45 J	3.5
MAGNESIUM	243 J	8.7 J	16.6 J	234 J	19.9 J	12.6 J	21.3 J	18.8 J	125 J	264 J	43.5 J		284 J
MANGANESE	53.5	1.1 J	1.1 J	10.7	0.51 J	0.82 J	2.4 J	3.5	20	29.5	2.3 J	0.47 J	48.1
MERCURY	0.02 J			0.04	0.03	0.03	0.03 J	0.03 J					
NICKEL	4.4 J			2.8 J					1.9 J	2.2 J			4.7 J
POTASSIUM	146 J			474 J	70.1 J	81.7 J	84.5 J	74 J	315 J	382 J	191 J		331 J
SELENIUM	0.97 J		0.99 J	0.23 J								1.5	1.4
SILVER			0.77 J										0.7 J
SODIUM	23.5 J			235 J	155 J	164 J	205 J	179 J	197 J	180 J	30 J		24.1 J
VANADIUM	43.1	0.9 J	1.4 J	42.4	0.59 J		1.4 J	1.5 J	23.2	24.3	9.3 J	0.69 J	19.2
ZINC	9.1	3.4 J	0.44 J	8.5	1.8 J	1.5 J	3.4 J	3 J		11.8	0.6 J		6.4

TABLE 5-19
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 4 OF 8

SAMPLE NUMBER	32SB8-13-15	32SB8-5-7	W32SB00901	W32SB01001	W32SB01002	W32SB01101	W32SB01102	W32SB01201	W32SB01202	W32SB01203	W32SB01301	W32SB01302	W32SB01303	W32SB01401
COLLECTION DATE	1/21/93	1/21/93	3/9/98	3/10/98	3/10/98	3/9/98	3/9/98	3/6/98	3/7/98	3/8/98	3/22/98	3/22/98	3/22/98	4/4/98
SAMPLE DEPTH	13 - 15'	5 - 7'	20 - 22'	18 - 20'	30 - 32'	16 - 18'	28 - 30'	12 - 14'	35 - 37'	80 - 82'	26 - 28'	55 - 57'	75 - 77'	28 - 30'
VOLATILES (ug/kg)														
1,2-DICHLOROETHENE (TOTAL)														
2-BUTANONE									21 J					
ACETONE												5 J		
BENZENE														
CARBON DISULFIDE														
CHLOROMETHANE														
ETHYLBENZENE														
METHYLENE CHLORIDE														
TETRACHLOROETHENE														
TOLUENE													2 J	
TRICHLOROETHENE														
XYLENES, TOTAL														
SEMIVOLATILES (ug/kg)														
2,4-DIMETHYLPHENOL														
2-METHYLNAPHTHALENE														
ACENAPHTHENE														
ANTHRACENE														
BIS(2-ETHYLHEXYL)PHTHALATE			56 J		43 J		67 J		79 J			52 J	100 J	200 J
CARBAZOLE														
DI-N-OCTYL PHTHALATE														
DIBENZOFURAN														
FLUORANTHENE														
FLUORENE														
N-NITROSODIPHENYLAMINE														
NAPHTHALENE														
PHENANTHRENE														
PYRENE														
PESTICIDES/PCBs (ug/kg)														
4,4'-DDD														
4,4'-DDE														
AROCLOR-1254														
TOTAL PETROLEUM HYDROCARBONS (mg/kg)														
TOTAL PETROLEUM HYDROCARBONS			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH (C8-C40)	NA	NA	9.49			9.6		21.6						
METALS (mg/kg)														
ALUMINUM	1630	5470	659	10700	2400	9820	1550	7650	1440	468	1570	537	621	1180
ANTIMONY														
ARSENIC	1.2 J	2.5												
BARIUM	3.8 J	10.9 J		8.4	2.3	7.4		13.7			1.7 J	0.55 J	1 J	1.2
BERYLLIUM		0.15 J												
CADMIUM														
CALCIUM	18.8 J	63 J												
CHROMIUM	1.2 J	4.3	2 J	11.1 J	3.2 J	13 J	3.3 J	14.5 J	2.4 J	3.9 J	2.4	3	9.5	4.8
COBALT		0.69 J												
COPPER	0.64 J	1.6 J		3.5 J		2.5 J		2.8 J						
CYANIDE	0.46 J	0.41 J												
IRON	448	3950	170	4300	221	5640	171	3240	74.9	133	99.7	46	195	68.1
LEAD	2.8	3.8	1.1 J	4.3 J	1.1 J	4.9 J	1 J	3.5 J	0.86 J	1.1 J	0.98	0.45	0.85	0.9
MAGNESIUM	41.5 J	67.2 J		101		70.1		177						
MANGANESE	3.5	18.1	1.7	7.3		4.3		39.6		1	0.57	0.42	1.3	0.65
MERCURY	0.02 J			0.11										
NICKEL								3.6				0.26	1.7	
POTASSIUM				100	50.4	134		108			32.8	9.5	16.9	
SELENIUM		2.2												
SILVER														
SODIUM														
VANADIUM	5.1 J	9.3 J	1.3	19.5	3.9	28.7	2.6	9.9	1.1	1.5	1.2	0.48	1.4	1.1
ZINC		1.8 J						5.5	2.9					

TABLE 5-19
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 5 OF 8

SAMPLE NUMBER	W32SB01402	W32SB01403	W32SB01403-D	W32SB01404	W32SB01502	W32SB01601	W32SB01601-D	W32SB01602	W32SB01603	W32SB01604	W32SB01701	W32SB01702	W32SB01703	W32SB01704
COLLECTION DATE	4/4/98	4/4/98	4/4/98	4/4/98	3/9/98	3/5/98	3/5/98	3/5/98	3/5/98	3/5/98	3/3/98	3/3/98	3/4/98	3/4/98
SAMPLE DEPTH	55 - 57'	75 - 77'	75 - 77'	90 - 92'	16 - 18'	28 - 30'	28 - 30'	45 - 47'	65 -67'	85 - 87'	20 - 22'	30 -32'	75 - 77'	79 - 81'
VOLATILES (ug/kg)														
1,2-DICHLOROETHENE (TOTAL)										2 J				
2-BUTANONE														
ACETONE				10										
BENZENE										20				17
CARBON DISULFIDE													1 J	1 J
CHLOROMETHANE									2 J				2 J	
ETHYLBENZENE										5 J			1 J	
METHYLENE CHLORIDE														
TETRACHLOROETHENE														
TOLUENE										6 J			2 J	2 J
TRICHLOROETHENE										5 J				
XYLENES, TOTAL										11			8	19
SEMIVOLATILES (ug/kg)														
2,4-DIMETHYLPHENOL														
2-METHYLNAPHTHALENE														
ACENAPHTHENE														
ANTHRACENE														
BIS(2-ETHYLHEXYL)PHTHALATE	49 J	470	56 J	45 J										
CARBAZOLE														
DI-N-OCTYL PHTHALATE														
DIBENZOFURAN														
FLUORANTHENE														
FLUORENE														
N-NITROSODIPHENYLAMINE														
NAPHTHALENE														
PHENANTHRENE														
PYRENE														
PESTICIDES/PCBs (ug/kg)														
4,4'-DDD														
4,4'-DDE														
AROCLOR-1254														
TOTAL PETROLEUM HYDROCARBONS (mg/kg)														
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH (C8-C40)														
METALS (mg/kg)														
ALUMINUM	511	843	651	348	5990	2760	3030	1470	546	4770	7750	2840	622	7720
ANTIMONY														
ARSENIC														2.4
BARIUM	1.9	1.9			10.9	2.7	2.7			9	8.9			15.2
BERYLLIUM														
CADMIUM														
CALCIUM														
CHROMIUM	7.8	3.4	1.5	2.1	7.5 J	6.2 J	4.5 J	3.4 J	1.2 J	17.4 J	5.5 J	4.6 J		16.2 J
COBALT														
COPPER	0.91				2 J						4.9	1.7	1.4	2.7
CYANIDE														
IRON	117	105	53.1	111	1420	328	332	71.8	63.2	2980	978	139	36.4	5450
LEAD	0.51	0.86	0.6	0.37	5.9 J	1.6 J	1.5 J	0.68 J		6.4 J	3.6 J	1.1 J		6.1 J
MAGNESIUM					96					123				184
MANGANESE	1.3	0.86	0.86		5.4	1.2	1.4		1.6	6	3.8			6.7
MERCURY														
NICKEL														
POTASSIUM										216	197			408
SELENIUM														
SILVER														
SODIUM					137									
VANADIUM	0.84	1.2	0.72	0.76	9.4	3.7	4.1	1.3		25.2	8.6	1.9		22.7
ZINC											2.5 J			9.3 J

TABLE 5-19
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 6 OF 8

SAMPLE NUMBER	W32SB01801	W32SB01901	W32SB01902	W32SB01903	WR-SB01(10-12)	WR-SB01(15-17)	WR-SB01(20-22)	WR-SB01(5-7)	WR-SB01(5-7)-D	WR-SB02(10-12)	WR-SB02(15-17)	WR-SB02(20-22)	WR-SB02(5-7)
COLLECTION DATE	4/5/98	4/5/98	4/5/98	4/5/98	7/30/93	7/30/93	7/30/93	7/30/93	7/30/93	7/30/93	7/30/93	7/30/93	7/30/93
SAMPLE DEPTH	6 - 8'	6 - 8'	40 - 42'	60 - 62'	10 - 12'	15 - 17'	20 - 22'	5 - 7'	5 - 7'	10 - 12'	15 - 17'	20 - 22'	5 - 7'
VOLATILES (ug/kg)													
1,2-DICHLOROETHENE (TOTAL)					300 J			430 J					
2-BUTANONE													
ACETONE					1000 J			2000 J		1500 J		700 J	
BENZENE											250 J		
CARBON DISULFIDE													
CHLOROMETHANE													
ETHYLBENZENE					3800 J	1700 J	170 J	4900	5100	790 J			
METHYLENE CHLORIDE					250 J	380 J			610 J	160 J	240 J		
TETRACHLOROETHENE					1400 J	390 J			1700 J				
TOLUENE					8400 J	2300 J		13000	11000	280 J			
TRICHLOROETHENE						1300 J	290 J						
XYLENES, TOTAL					25000 J	12000 J	1600	32000	32000	3900	480 J	540 J	
SEMIVOLATILES (ug/kg)													
2,4-DIMETHYLPHENOL													
2-METHYLNAPHTHALENE					37000 J	18000	23000 J	43000 J	37000 J	26000 J	6200	18000 J	4400
ACENAPHTHENE													
ANTHRACENE													
BIS(2-ETHYLHEXYL)PHTHALATE		67 J	43 J	85 J									590 J
CARBAZOLE													
DI-N-OCTYL PHTHALATE													
DIBENZOFURAN					1400 J	980 J	1100 J						
FLUORANTHENE													
FLUORENE					970 J	640 J							
N-NITROSODIPHENYLAMINE													
NAPHTHALENE					21000 J	8600	8900 J	26000 J	22000 J	19000 J	3700	13000 J	8900
PHENANTHRENE													
PYRENE													
PESTICIDES/PCBs (ug/kg)													
4,4'-DDD													
4,4'-DDE													
AROCLOR-1254													
TOTAL PETROLEUM HYDROCARBONS (mg/kg)													
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH (C8-C40)	8.56 J	22.6											
METALS (mg/kg)													
ALUMINUM	6550	6990	1240	542									
ANTIMONY													
ARSENIC													
BARIUM	9	10.9											
BERYLLIUM													
CADMIUM													
CALCIUM	196												
CHROMIUM	5.5	7	2.4	2.5	13.4	10.6	1.4 J	20.3	14.1	13.6	7.7	8	4.8
COBALT	0.54	0.75											
COPPER	2.6	2.7											
CYANIDE													
IRON	2630	3040	69.7	44.1									
LEAD	2.4	2.4	0.5	0.35									
MAGNESIUM	131	142											
MANGANESE	27	20.6	2.4	0.69									
MERCURY													
NICKEL	1.7	2.3											
POTASSIUM	84.6	90.9											
SELENIUM													
SILVER													
SODIUM													
VANADIUM	7.9	8.5	0.89										
ZINC	4.7	4.7											

TABLE 5-19
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 7 OF 8

SAMPLE NUMBER COLLECTION DATE SAMPLE DEPTH	WR-SB03(10-12) 7/30/93 10 - 12'	WR-SB03(15-17) 7/30/93 15 - 17'	WR-SB03(20-22) 7/30/93 20 - 22'	WR-SB03(5-7) 7/30/93 5 - 7'
VOLATILES (ug/kg)				
1,2-DICHLOROETHENE (TOTAL)				
2-BUTANONE				
ACETONE	2100 J			2000 J
BENZENE		1400 J		
CARBON DISULFIDE				
CHLOROMETHANE				
ETHYLBENZENE		150 J		440 J
METHYLENE CHLORIDE	170 J			160 J
TETRACHLOROETHENE				
TOLUENE				
TRICHLOROETHENE				
XYLENES, TOTAL				210 J
SEMIVOLATILES (ug/kg)				
2,4-DIMETHYLPHENOL				
2-METHYLNAPHTHALENE	6500 J	5200 J	990 J	24000 J
ACENAPHTHENE				
ANTHRACENE				
BIS(2-ETHYLHEXYL)PHTHALATE				
CARBAZOLE				
DI-N-OCTYL PHTHALATE				
DIBENZOFURAN				1500 J
FLUORANTHENE				
FLUORENE				
N-NITROSODIPHENYLAMINE				
NAPHTHALENE	1600 J	1400 J		6900 J
PHENANTHRENE				
PYRENE				
PESTICIDES/PCBs (ug/kg)				
4,4'-DDD				
4,4'-DDE				
AROCLOR-1254				
TOTAL PETROLEUM HYDROCARBONS (mg/kg)				
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA
TPH (C8-C40)				
METALS (mg/kg)				
ALUMINUM				
ANTIMONY				
ARSENIC				
BARIUM				
BERYLLIUM				
CADMIUM				
CALCIUM				
CHROMIUM	7.6	9	2.5	9.5
COBALT				
COPPER				
CYANIDE				
IRON				
LEAD				
MAGNESIUM				
MANGANESE				
MERCURY				
NICKEL				
POTASSIUM				
SELENIUM				
SILVER				
SODIUM				
VANADIUM				
ZINC				

TABLE 5-19
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 8 OF 8

Notes:

The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-20
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value: Region III RBC[2] Soil Industrial	Screening Toxicity Value: Region III RBC[2] Soil Basis	Screening Toxicity Value: Florida[3] Soil Industrial
Volatiles										
1,2-Dichloroethene (total)	3/74	0.002	0.43	mg/kg	WR-SB01(5-7)	0.43	NA	1800	N	130[4]
2-Butanone	7/47	0.003	0.05	mg/kg	32SB5-61-63(93)	0.05	NA	120000	N	21000
Acetone	35/74	0.002	2.1	mg/kg	WR-SB03(10-12)	2.1	NA	20000	N	5500
Benzene	4/74	0.017	1.4	mg/kg	WR-SB03(15-17)	1.4	NA	200	C	1.6
Carbon Disulfide	2/74	0.001	0.001	mg/kg	W32SB01703	0.001	NA	20000	N	1400
Carbon Disulfide	2/74	0.001	0.001	mg/kg	W32SB01704	0.001	NA	20000	N	1400
Chloromethane	2/74	0.002	0.002	mg/kg	W32SB01603	0.002	NA	440	C	2.3
Chloromethane	2/74	0.002	0.002	mg/kg	W32SB01703	0.002	NA	440	C	2.3
Ethylbenzene	9/74	0.001	5.1	mg/kg	WR-SB01(5-7)-D	5.1	NA	20000	N	8400
Methylene Chloride	8/74	0.004	0.61	mg/kg	WR-SB01(5-7)-D	0.61	NA	760	C	23
Tetrachloroethene	3/74	0.39	1.7	mg/kg	WR-SB01(5-7)-D	1.7	NA	110	C	17
Toluene	9/74	0.002	13	mg/kg	WR-SB01(5-7)	13	NA	41000	N	2600
Trichloroethene	3/74	0.005	1.3	mg/kg	WR-SB01(15-17)	1.3	NA	520	C	8.5
Xylenes, Total	13/74	0.008	32	mg/kg	WR-SB01(5-7)	32	NA	410000	N	40000
Xylenes, Total	13/74	0.008	32	mg/kg	WR-SB01(5-7)-D	32	NA	410000	N	40000
Semivolatiles										
2-Methylnaphthalene	16/74	0.052	43	mg/kg	WR-SB01(5-7)	43	NA	4100	N	560
Anthracene	1/74	0.053	0.053	mg/kg	32SB7-15-17(93)	0.053	NA	61000	N	260000
Bis(2-Ethylhexyl)phthalate	17/74	0.043	0.6	mg/kg	32SB5-95-97(93)	0.6	NA	410	C	280
Carbazole	1/74	0.039	0.039	mg/kg	32SB2-5-7(93)	0.039	NA	290	C	190
Di-n-octyl phthalate	1/74	0.04	0.04	mg/kg	32SB2-5-7(93)	0.04	NA	4100	N	27000
Dibenzofuran	4/74	0.98	1.5	mg/kg	WR-SB03(5-7)	1.5	NA	820	N	5000
Fluoranthene	2/74	0.039	0.04	mg/kg	32SB7-15-17(93)	0.04	NA	8200	N	48000
Fluorene	4/74	0.22	1	mg/kg	32SB7-15-17(93)	1	NA	8200	N	28000
Naphthalene	14/74	1.1	26	mg/kg	WR-SB01(5-7)	26	NA	8200	N	270
Phenanthrene	3/74	0.059	0.34	mg/kg	32SB7-15-17(93)	0.34	NA	4100[5]	N	30000
Metals										
Aluminum	62/62	6.9	33200	mg/kg	32SB5-5-7(93)	33200	13917	200000	N	NA
Arsenic	23/62	0.18	3.3	mg/kg	32SB6-10-12(93)	3.3	3.1	3.8	C	3.7
Barium	51/62	0.06	18.7	mg/kg	32SB7-5-7(93)	18.7	7.9	14000	N	87000
Beryllium	5/62	0.07	0.21	mg/kg	32SB5-5-7(93)	0.21	0.13	410	N	800
Cadmium	3/62	0.26	0.44	mg/kg	32SB6-10-12(93)	0.44	0.46	100	N	1300
Calcium	33/62	8.2	502	mg/kg	32SB6-5-7(93)-D	502	222	NA	-	NA
Chromium	68/74	0.87	26.3	mg/kg	32SB5-5-7(93)	26.3	11.4	610[6]	N	420[6]
Cobalt	11/62	0.51	2.5	mg/kg	32SB7-5-7(93)	2.5	0.74	12000	N	110000
Copper	45/62	0.49	8.4	mg/kg	32SB6-10-12(93)	8.4	4.4	8200	N	73000
Cyanide	14/34	0.4	0.68	mg/kg	32SB1-15-17-D	0.68	ND	4100	N	39000

TABLE 5-20
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 32
NAS WHITING FIELD, MILTON, FLORIDA

								Screening Toxicity Value		
								Region III RBC[2]		Florida[3]
Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value[1]	Soil Industrial	Soil Basis	Soil Industrial
Metals (Continued)										
Iron	62/62	29.8	16000	mg/kg	32SB5-5-7(93)	16000	9055	61000	N	480000
Lead	60/62	0.13	6.4	mg/kg	W32SB01604	6.4	4.2	400[7]	N	920
Magnesium	41/62	7.9	284	mg/kg	32SB7-5-7(93)	284	136	NA	-	NA
Manganese	53/62	0.21	53.5	mg/kg	32SB5-5-7(93)	53.5	21.3	4100	N	22000
Mercury	24/62	0.02	0.11	mg/kg	W32SB01001	0.11	ND	61[8]	N	26
Mercury	24/62	0.02	0.11	mg/kg	W32SB01001	0.11	ND	61[8]	N	26
Nickel	15/62	0.26	4.7	mg/kg	32SB7-5-7(93)	4.7	2.5	4100	N	28000
Potassium	39/62	9.5	672	mg/kg	32SB3-10-12(93)	672	90.5	NA	-	NA
Selenium	12/62	0.11	2.2	mg/kg	32SB8-5-7(93)	2.2	0.15	1000	N	10000
Silver	5/62	0.7	0.96	mg/kg	32SB1-10-12(93)	0.96	0.56	1000	N	9100
Sodium	30/62	14.9	235	mg/kg	32SB6-10-12(93)	235	ND	NA	-	NA
Vanadium	55/62	0.48	50.5	mg/kg	32SB4-15-17(93)	50.5	22.5	1400	N	7400
Zinc	37/62	0.42	11.8	mg/kg	32SB6-5-7(93)-D	11.8	7.8	61000	N	560000
Total Petroleum Hydrocarbons										
Total Petroleum Hydrocarbons	9/42	2	2650	mg/kg	32SB7-30-32(93)	2650	NA	NA	-	2500
TPH (c8-c40)	5/20	8.56	22.6	mg/kg	W32SB01901	22.6	NA	NA	-	2500

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998. Background screening value for inorganics is two times the mean detected concentr

(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for non-carcinogens).

(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January 21, 1999.

(4) Value is for cis-1,2-dichloroethene.

(5) Value is for naphthalene.

(6) Value is for hexavalent chromium.

(7) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

(8) Value is for mercuric chloride.

The average of a sample and its duplicate is used for all calculations.

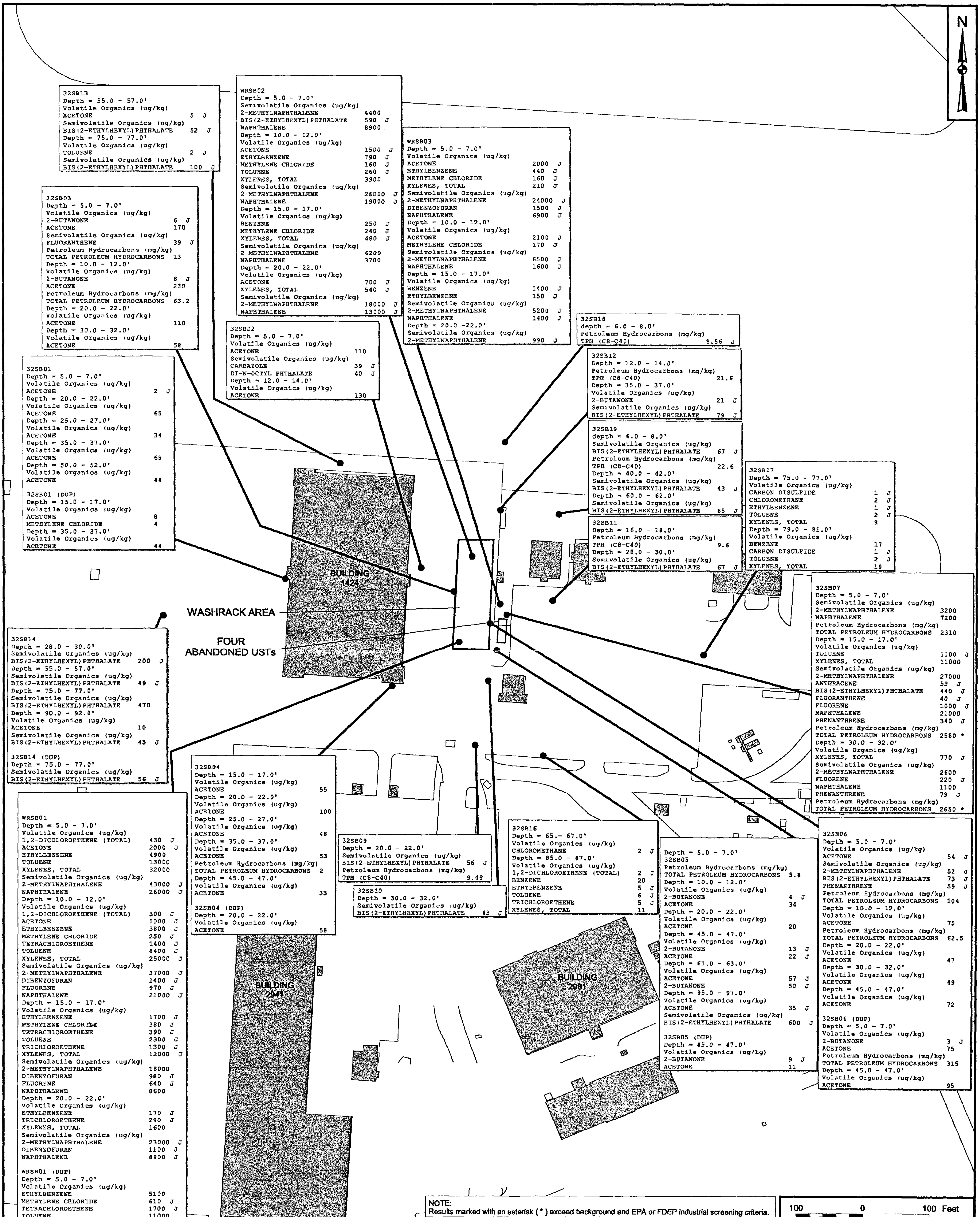
J - estimated value.

mg/kg - milligrams per kilogram.

NA - not available

ND - not determined

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 12-MAY-99 DNP [5-19] (CV) ORGANICS IN SUBSURFACE SOIL - SITE 32 LAYOUT



DRAWN BY J. BELLONE	DATE 15-SEP-99	ORGANICS IN SUBSURFACE SOIL AT SITE 32 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-19 / REV 0

Other SVOCs identified in more than 10 samples included naphthalene (14 detections) and 2-methylnaphthalene (16 detections). Naphthalene concentrations ranged from 1,100 μg/kg to 26,000 μg/kg. The 2-methylnaphthalene concentrations ranged from 52 μg/kg to 43,000 μg/kg. Most of the detections were in samples collected from the wash rack borings. The maximum concentration of naphthalene was an estimated 26,000 μg/kg in WR-SB01-5-7 (5 to 7 feet bgs). This sample also contained the maximum concentration of 2-methylnaphthalene at an estimated 43,000 μg/kg.

Soil boring 32SB7, located adjacent to the wash rack, displayed the highest number of SVOCs with seven compounds identified. Compounds detected in the soil at 32SB7 included 2-methylnaphthalene (3,200 to 27,000 μg/kg), anthracene (53 J μg/kg), bis(2-ethylhexyl)phthalate (440 J μg/kg), fluoranthene (40 J μg/kg), fluorene (220 J to 1,000 J μg/kg), naphthalene (1,100 to 21,000 μg/kg), and phenanthracene (79 J to 340 J μg/kg).

Other SVOC compounds identified in the subsurface soil at Site 32 include cabazola and di-n-octyl phthalate. No SVOCs were detected at concentrations exceeding industrial USEPA Region III RBCs or FDEP soil cleanup goals. Figure 5-19 shows the distribution of SVOCs in the subsurface soil at Site 32.

Total Petroleum Hydrocarbons

TPH was detected in nine subsurface soil samples and TPH (c8-c40) was detected in five subsurface soil samples. TPH concentrations ranged from 2 mg/kg in 32SB4-35-37 to 2,650 mg/kg in 32SB7-30-32. The c8-c40 fraction TPH concentrations ranged from 8.56 mg/kg in W32SB1801 (6-8 feet bgs) to 22.6 mg/kg in W32SB1901 (6-8 feet bgs). Two samples (32SB7-15-17 at 2,580 mg/kg and 32SB7-30-32 at 2,650 mg/kg) exceeded the FDEP soil cleanup goals (2500 mg/kg) for TPH. The distribution of TPH at Site 32 is presented in Figure 5-19.

Pesticides/PCBs

No pesticide/PCB compounds were detected in the subsurface soil at Site 32.

Inorganics

Twenty-two inorganic analytes were detected in the subsurface soil at Site 32. Seventeen non-nutrient analytes (aluminum, arsenic, barium, beryllium, chromium, cobalt, copper, cyanide, iron, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc) were detected at concentrations above background. Chromium was the only inorganic constituent analyzed in all 74 subsurface soil samples and duplicates collected at the site. It was detected in 68 of the 74 normal samples. Aluminum and iron were the only analytes detected in all 62 normal samples in which they were analyzed. No inorganic analyte was detected at concentrations exceeding the USEPA Region III industrial RBCs for soil or the FDEP industrial soil cleanup goals. Figure 5-20 shows the distribution of inorganics detected above background levels at Site 32.

5.2.5.3 Summary

The source of chemicals in the surface and subsurface soils at Site 32 can be attributed to aircraft maintenance activities at the North Field Hangar, the former waste oil tanks, and aircraft cleaning at the wash rack area located on the east side of the hangar. Chemicals detected in the surface and subsurface soils include VOCs, SVOCs, and inorganics. Pesticides/PCBs were detected in surface soils but not in subsurface soils.

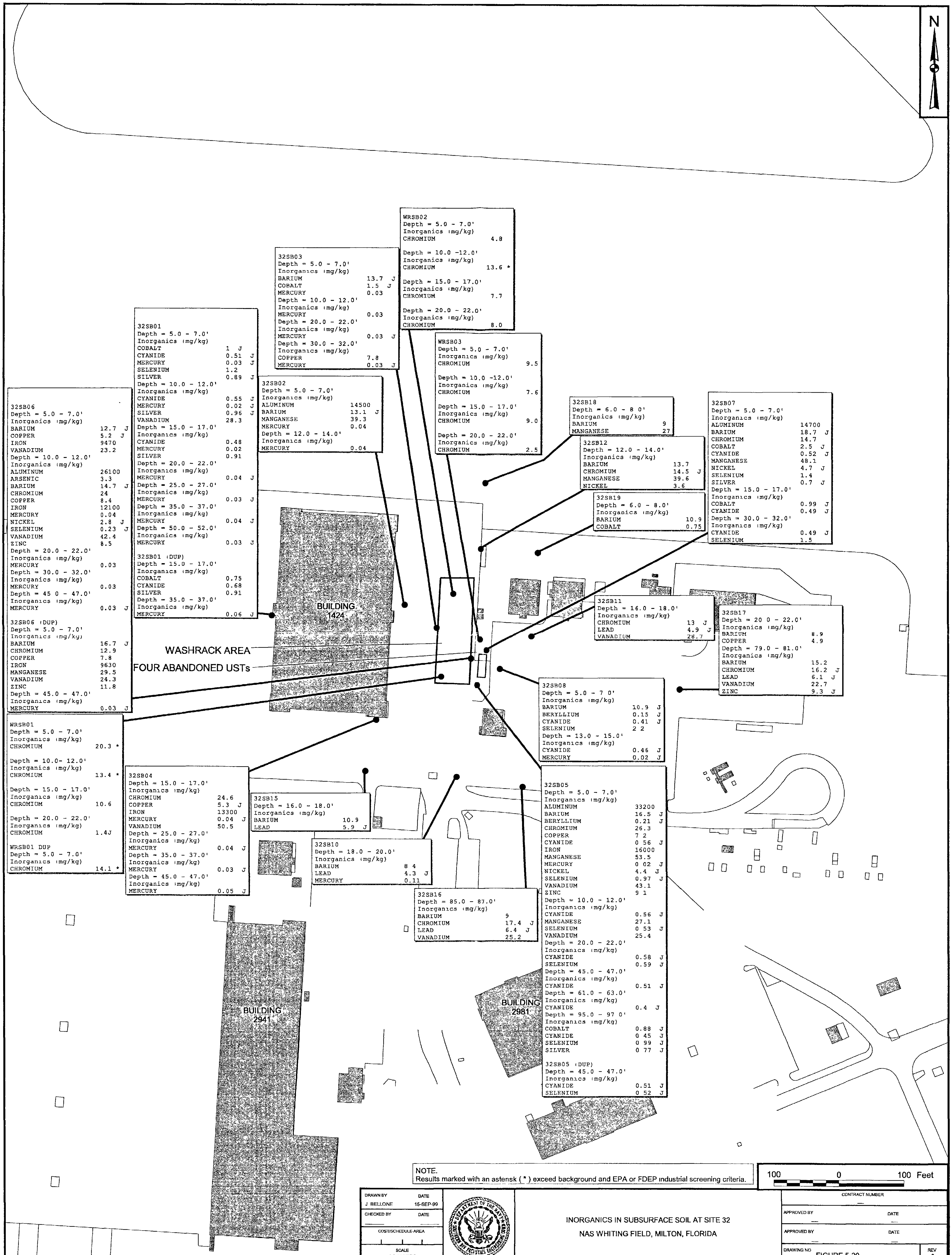
Samples collected from the wash rack area contained the highest number of VOCs and SVOCs at Site 32. The concentrations of VOCs and SVOCs were also highest in the vicinity of the wash rack. The majority of the VOC contamination was located within 20 feet bgs. The deepest detection of VOCs in the wash rack area was acetone at a depth of 97 feet bgs at 32SB5. The deepest detection of VOC analytes other than acetone or 2-butanone in the area of the wash rack was 30 to 32 feet bgs at 32SB7.

Organic compounds were also detected at soil borings 32SB16 of the sanitary sewer and at 32SB17. The deepest detection of VOCs outside the wash rack area was acetone at 90 to 92 feet bgs at 32SB14. Low levels of several VOCs were detected at 85 to 87 feet bgs at 32SB16 located along the sanitary sewer line. Because few compounds were detected in the higher soil samples, the detection of these compounds may be the result of volatilization of VOCs into the vadose zone from dissolved constituents in perched groundwater at a depth of approximately 87 feet bgs encountered in 32SB16 and 32SB17.

SVOCs were detected almost exclusively around the wash rack area in the surface and subsurface soil. Soil boring 32SB07 contained the highest number of SVOC analytes, while WR-SB01 contained two analytes at their highest concentrations in the subsurface soils. The only analyte detected outside the wash rack was bis(2-ethylhexyl)phthalate. The deepest sample to exhibit SVOCs was at 95 to 97 feet bgs at 32SB05.

Pesticide/PCB compounds are confined to the surface soil at 32SB06 and 32SB07. Inorganic analytes were infrequently detected above background.

P:\GIS\NAS_WHITING_FIELD\7541_028 APR 12-MAY-99 DNP [5-20] (CV) INORGANICS IN SUBSURFACE SOIL - SITE 32 LAYOUT



5.2.6 Site 33

Surface and subsurface soil sampling was conducted in three phases. Soil borings 33SB01 through 33SB05 were installed by ABB-ES in December 1992. The wash rack area was investigated in June 1996 with the installation of three soil borings (33B001 - 33B003). Additional soil borings, 33SB06 through 33SB12, were installed by Tetra Tech NUS in March 1998 to sample previously uninvestigated soil gas hot spots and define the horizontal and vertical extent of soil contamination.

5.2.6.1 Surface Soil

Six surface soil samples, including one duplicate, were collected at Site 33 during three field events. One sample and a duplicate were collected in 1992, three samples were collected in June 1996, and one sample was collected in 1998. Surface soil sample locations are presented on Figure 3-2. Most soil samples were analyzed for VOCs, TPH, SVOCs, pesticides/PCBs, and metals. Samples collected in 1996 were not analyzed for pesticides/PCBs. Inorganic analysis for the 1996 samples consisted of lead only. Surface soil analytical results are summarized in Table 5-21. Table 5-22 summarizes the statistical analysis of the data and presents background concentrations. Background concentrations are based on Troup loamy soil found at Site 33. USEPA Region III residential RBCs for soils and the FDEP residential soil cleanup goals are also presented on Table 5-22.

Volatile Organic Compounds

Seven VOCs were detected in the surface soil at Site 33. TCE was the most common compound identified with detections in all surface soil samples except at W33SB00601. Concentrations of TCE ranged from 14 μg/kg (33B00101) to 130 μg/kg (33B00201). Six of seven VOCs identified at the site were detected in 33B00301 ranging in concentration from an estimated 1 μg/kg of 1,1,1-TCA to 100 μg/kg of TCE. No VOC concentrations in the surface soil exceeded the USEPA Region III residential RBCs or the FDEP residential soil cleanup goals. The distribution of VOCs in the surface soil is presented on Figure 5-9.

Semivolatile Organic Compounds

Three SVOCs were detected in the surface soil at Site 33. All three compounds (2-methylnaphthalene, fluorene, and naphthalene) were identified in 33SB5-0-2 and the associated duplicate (33SB5-0-2-D). Concentrations ranged from 68 μg/kg of fluorene to 2,500 μg/kg of 2-methylnaphthalene. No SVOC

TABLE 5-21
POSITIVE ANALYTICAL DETECTIONS FOR SURFACE SOIL SAMPLES AT SITE 33
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

SAMPLE NUMBER	33B00101	33B00201	33B00301	33SB5-0-2	33SB5-0-2-D	W33SB00601
COLLECTION DATE	6/6/96	6/6/96	6/6/96	12/6/92	12/6/92	3/18/98
SAMPLE DEPTH	0 - 2'	0 - 2'	0 - 2'	0 - 2'	0 - 2'	0 - 2'
VOLATILES (µg/kg)						
1,1,1-TRICHLOROETHANE			1 J			
1,2-DICHLOROETHENE (TOTAL)		2 J	2 J			
2-BUTANONE			4 J			
METHYLENE CHLORIDE	3 J	2 J	2 J			
TETRACHLOROETHENE			2 J			
TRICHLOROETHENE	14	130	100	48	29	
XYLENES, TOTAL					11 J	
SEMIVOLATILES (UG/MG)						
2-METHYLNAPHTHALENE				2000	2500	
FLUORENE					68 J	
NAPHTHALENE				270 J	350 J	
PESTICIDES/PCBs (µg/kg)						
4,4'-DDE	NA	NA	NA			0.16 J
4,4'-DDT	NA	NA	NA			0.6 J
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
TOTAL PETROLEUM HYDROCARBONS		13.8		2340	2260	
TPH (C8-C40)	NA	NA	NA	NA	NA	10.7
METALS (mg/kg)						
ALUMINUM	NA	NA	NA	11400	28400	14700
ARSENIC	NA	NA	NA	2.6	2.8	2.7
BARIUM	NA	NA	NA	11.2 J	18.1 J	23.2
CADMIUM	NA	NA	NA	0.39 J	0.9 J	2.2
CALCIUM	NA	NA	NA	720 J	870 J	296
CHROMIUM	NA	NA	NA	11.9	19	12
COBALT	NA	NA	NA		1.7 J	1.2
COPPER	NA	NA	NA	4.7 J	7.4	8
IRON	NA	NA	NA	13700	14400	6560
LEAD	4.3	6.6	8.1	6.1	6.4	15.9 J
MAGNESIUM	NA	NA	NA	74.2 J	204 J	204
MANGANESE	NA	NA	NA	93.4	89.7	150
MERCURY	NA	NA	NA	0.17	0.07 J	
NICKEL	NA	NA	NA		3.2 J	3.5
POTASSIUM	NA	NA	NA	123 J	197 J	
SELENIUM	NA	NA	NA		0.22 J	
SODIUM	NA	NA	NA	239 J	172 J	
VANADIUM	NA	NA	NA	37.2	39.6	18.3
ZINC	NA	NA	NA	6.1 J	10.9	21.9 J

Notes:
The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-22
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS AT SITE 33
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Location of Maximum Concentration	Units	Background Value[1]	Screening Toxicity Value: Region RBC III[2] Soil Residential	Screening Toxicity Value: Region RBC III[2] Soil Basis	Screening Toxicity Value: Florida[3] Soil Residential
Volatiles									
1,1,1-Trichloroethane	1/5	0.001	0.001	33B00301	mg/kg	NA	160	N	400
1,2-Dichloroethene (total)	2/5	0.002	0.002	33B00201	mg/kg	NA	70	N	19[4]
1,2-Dichloroethene (total)	2/5	0.002	0.002	33B00301	mg/kg	NA	70	N	19[4]
2-Butanone	1/4	0.004	0.004	33B00301	mg/kg	NA	4700	N	3100
Methylene Chloride	3/5	0.002	0.003	33B00101	mg/kg	NA	85	C	16
Tetrachloroethene	1/5	0.002	0.002	33B00301	mg/kg	NA	12	C	8.9
Trichloroethene	4/5	0.014	0.13	33B00201	mg/kg	NA	58	C	6
Xylenes, Total	1/5	0.011	0.011	33SB5-0-2(92)-D	mg/kg	NA	16000	N	5900
Semivolatiles									
2-Methylnaphthalene	1/5	2	2.5	33SB5-0-2(92)-D	mg/kg	NA	160	N	83
Fluorene	1/5	0.068	0.068	33SB5-0-2(92)-D	mg/kg	NA	310	N	2200
Naphthalene	1/5	0.27	0.35	33SB5-0-2(92)-D	mg/kg	NA	160	N	40
Pesticides/PCBs									
4,4'-DDE	1/3	0.0002	0.0002	W33SB00601	mg/kg	NA	1.9	C	3.3
4,4'-DDT	1/3	0.0006	0.0006	W33SB00601	mg/kg	NA	1.9	C	3.3
Inorganics									
Aluminum	2/2	11400	28400	33SB5-0-2(92)-D	mg/kg	7924	7800	N	72000
Arsenic	2/2	2.6	2.8	33SB5-0-2(92)-D	mg/kg	1.6	0.43	C	0.8
Barium	2/2	11.2	23.2	W33SB00601	mg/kg	11.6	550	N	110
Cadmium	2/2	0.39	2.2	W33SB00601	mg/kg	0.29	3.9	N	75
Calcium	2/2	296	870	33SB5-0-2(92)-D	mg/kg	198	NA	-	NA
Chromium	2/2	11.9	19	33SB5-0-2(92)-D	mg/kg	5.5	23[5]	N	210[5]
Cobalt	2/2	1.2	1.7	33SB5-0-2(92)-D	mg/kg	1.5	470	N	4700
Copper	2/2	4.7	8	W33SB00601	mg/kg	4.7	310	N	110
Iron	2/2	6560	14400	33SB5-0-2(92)-D	mg/kg	4416	2300	N	23000
Lead	5/5	4.3	15.9	W33SB00601	mg/kg	5.7	400[6]		400[6]
Magnesium	2/2	74.2	204	W33SB00601	mg/kg	134	NA	-	NA
Magnesium	2/2	74.2	204	33SB5-0-2(92)-D	mg/kg	134	NA	-	NA
Manganese	2/2	89.7	150	W33SB00601	mg/kg	196	160	N	1600
Mercury	1/2	0.07	0.17	33SB5-0-2(92)	mg/kg	0.06	2.3[7]	N	3.4
Nickel	2/2	3.2	3.5	W33SB00601	mg/kg	3.6	160	N	110
Potassium	1/2	123	197	33SB5-0-2(92)-D	mg/kg	88.5	NA	-	NA
Selenium	1/2	0.22	0.22	33SB5-0-2(92)-D	mg/kg	0.23	39	N	390
Sodium	1/2	172	239	33SB5-0-2(92)	mg/kg	203	NA	-	NA
Vanadium	2/2	18.3	39.6	33SB5-0-2(92)-D	mg/kg	10.9	55	N	15
Zinc	2/2	6.1	21.9	W33SB00601	mg/kg	7.7	2300	N	23000
Petroleum Hydrocarbons									
Total Petroleum Hydrocarbons	3/5	13.8	2340	33SB5-0-2(92)	mg/kg	NA	NA	-	340
TPH (c8-c40)	1/1	10.7	10.7	W33SB00601	mg/kg	NA	NA	-	340

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES 1998.
(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for non-carcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January 21, 1999.
(4) Value is for cis-1,2-dichloroethene.
(5) Value is for hexavalent chromium.
(6) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(7) Value is for mercuric chloride.
mg/kg - milligrams per kilogram
NA - not available

concentrations in the surface soil at Site 33 exceeded the USEPA Region III residential RBCs or the FDEP residential soil cleanup goals. The distribution of SVOCs in the surface soil is presented on Figure 5-9.

Total Petroleum Hydrocarbons

TPH was detected in three surface soil samples (including one duplicate). Concentrations ranged from 13.8 mg/kg in 33B00201 to 2,340 mg/kg in 33SB5-0-2. TPH (c8-c40) was detected in W33SB00601 at a concentration of 10.7 mg/kg. The maximum TPH concentration exceeds the FDEP residential cleanup goals for soil of 350 mg/kg. The distribution of TPH in the surface soil is presented on Figure 5-9.

Pesticides/PCBs

Trace levels of two pesticide/PCB compounds were detected in the surface soil at Site 33. Both compounds, 4,4'-DDE and 4,4'-DDT, were identified in W33SB00601 at estimated concentrations of 0.16 μg/kg and 0.6 μg/kg, respectively. Neither concentration exceeded the USEPA Region III residential RBCs or FDEP residential soil cleanup goals. The distribution of pesticides/PCBs in the surface soil is presented on Figure 5-9.

Inorganics

Nineteen inorganic constituents were detected in two surface soil samples and one duplicate sample. Lead was the only constituent analyzed for in all surface soil samples at Site 33 and was detected in all six samples. Concentrations of lead ranged from 4.3 mg/kg in 33B00101 to an estimated 15.9 mg/kg in W33SB00601. Eleven other non-nutrient inorganic constituents (aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, iron, mercury, vanadium, and zinc) were detected above background for Troup soils.

Four inorganic constituents were detected at concentrations exceeding regulatory criteria for residential soils. Aluminum concentrations ranged from 11,400 mg/kg to 28,400 mg/kg, exceeding the USEPA residential soil RBC of 7,800 mg/kg. Arsenic concentrations ranged from 2.6 mg/kg to 2.8 mg/kg. These concentrations exceed the USEPA Region III residential soil RBC (0.43 mg/kg) and the FDEP residential soil cleanup goal (0.8 mg/kg). Iron concentrations ranged from 6,560 mg/kg to 14,400 mg/kg, exceeding the USEPA Region III residential soil RBC of 2,330 mg/kg. Vanadium was detected at concentrations ranging from 18.3 mg/kg to 39.6 mg/kg. These concentrations exceed the FDEP residential soil cleanup goal of 15 mg/kg. The distribution of inorganics in the surface soil is displayed on Figure 5-10.

5.2.6.2 Subsurface Soil

Forty-four subsurface soil samples (including 4 duplicate samples) were collected from 13 soil borings at Site 33. Soil samples were analyzed for VOCs, TPH, SVOCs, pesticides/PCBs, and inorganics. Lead was the only inorganic constituent analyzed for in the samples collected during the 1996 field event. Soil samples collected in 1996 were not analyzed for pesticides/PCBs. Eight of the samples collected in 1996 were analyzed for TOC and lead only. Table 5-23 summarizes the subsurface soil analytical results. Table 5-24 summarizes the frequency of detections, range of detections, and background concentrations. USEPA Region III industrial RBCs for soils and the FDEP industrial soil cleanup goals are also presented on Table 5-24. Soil boring locations are displayed on Figure 3-2.

Volatile Organic Compounds

Six VOCs were detected in the subsurface soil at Site 33. Acetone was the most frequently detected VOC with ten detections. Concentrations of acetone ranged from an estimated 3 µg/kg to 150 µg/kg at 33SB2-15-17 (15 to 17 feet bgs). Methylene chloride was detected in four subsurface soil samples at estimated concentrations of 1 µg/kg to 2 µg/kg.

Sample 33SB2-5-7 (5 to 7 feet bgs) contained the highest concentrations of VOCs at Site 33. Ethylbenzene was detected at a concentration of 1,500 µg/kg and xylenes were detected at a concentration of 4,800 µg/kg. No VOCs were identified above the USEPA Region III industrial RBCs for soil or the FDEP industrial soil cleanup goals. The distribution of VOCs in subsurface soil at Site 33 is shown on Figure 5-11.

Semivolatile Organic Compounds

Eight SVOCs were detected in the subsurface soil at Site 33. The most frequently identified compounds were bis(2-ethylhexyl)phthalate and naphthalene with four detections each. Concentrations of bis(2-ethylhexyl)phthalate ranged from an estimated 56 µg/kg to an estimated 410 µg/kg. The maximum concentration was detected in 33SB4-3-5 (3 to 5 feet bgs). Naphthalene concentrations ranged from an estimated 130 µg/kg to 610 µg/kg. The maximum naphthalene concentration was detected in 33SB2-5-7 (5 to 7 feet bgs). The SVOC 2-methylnaphthalene exhibited the highest concentration in the subsurface soil at the site with a detection of 2,100 µg/kg in 33SB2-5-7.

Subsurface soil sample 33SB2-5-7 contained the most SVOCs at Site 33 with four compounds detected in the sample, including 2-methylnaphthalene, naphthalene, phenanthrene (240 J µg/kg) and pyrene

TABLE 5-23
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 33
NAS WHTING FIELD, MILTON, FLORIDA
PAGE 1 OF 6

SAMPLE NUMBER	33B00102	33B00102-D	33B00103	33B00108	33B00202	33B00203	33B00205	33B00208	33B00302
COLLECTION DATE	6/6/96	6/6/96	6/6/96	6/6/96	6/6/96	6/6/96	6/6/96	6/6/96	6/6/96
SAMPLE DEPTH	5 - 7'	5 - 7'	10 - 12'	50 - 52'	5 - 7'	10 - 12'	20 - 22'	50 - 52'	5 - 7'
VOLATILES (µg/kg)									
1,2-DICHLOROETHENE (TOTAL)				NA			NA	NA	
ACETONE				NA			NA	NA	
ETHYLBENZENE				NA			NA	NA	
METHYLENE CHLORIDE		1 J		NA		1 J	NA	NA	
TRICHLOROETHENE				NA			NA	NA	
XYLENES, TOTAL				NA			NA	NA	
SEMIVOLATILVES (µg/kg)									
2-METHYLNAPHTHALENE				NA			NA	NA	
BIS(2-ETHYLHEXYL)PHTHALATE				NA			NA	NA	
BUTYLBENZYL PHTHALATE				NA			NA	NA	
DI-N-BUTYL PHTHALATE				NA			NA	NA	
FLUORENE				NA			NA	NA	
NAPHTHALENE				NA			NA	NA	
PHENANTHRENE				NA			NA	NA	
PYRENE				NA			NA	NA	
PESTICIDES/PCBs (µg/kg)									
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
TOTAL PETROLEUM HYDROCARBONS				NA	18.8				
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)									
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	8	8	4.5	NA	9.6	5.8	5.7	NA	7.8
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (mg/kg)									
TOTAL ORGANIC CARBON	NA	NA	776	45.9	NA	732	NA	62.9	NA

TABLE 5-23
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 33
NAS WHTING FIELD, MILTON, FLORIDA
PAGE 2 OF 6

SAMPLE NUMBER	33B00302-D	33B00303	33B00304	33B00305	33B00308	33SB1-10-12	33SB1-25-27	33SB1-3-5	33SB2-10-12
COLLECTION DATE	6/6/96	6/6/96	6/6/96	6/6/96	6/6/96	12/3/92	12/3/92	12/3/92	12/1/92
SAMPLE DEPTH	5 - 7'	10 - 12'	15 - 17'	20 - 22'	40 - 42'	10 - 12'	25 - 27'	3 - 5'	10 - 12'
VOLATILES (µg/kg)									
1,2-DICHLOROETHENE (TOTAL)	4 J	3 J			NA				
ACETONE					NA	17 J			
ETHYLBENZENE					NA				
METHYLENE CHLORIDE	2 J	2 J			NA				
TRICHLOROETHENE	13	5 J			NA				
XYLENES, TOTAL					NA				380 J
SEMIVOLATILVES (µg/kg)									
2-METHYLNAPHTHALENE		160 J	79 J		NA				
BIS(2-ETHYLHEXYL)PHTHALATE					NA				
BUTYLBENZYL PHTHALATE					NA		37 J		
DI-N-BUTYL PHTHALATE					NA				
FLUORENE					NA				150 J
NAPHTHALENE		240 J	130 J		NA				370 J
PHENANTHRENE					NA				69 J
PYRENE					NA				
PESTICIDES/PCBs (µg/kg)									
4,4'-DDE	NA	NA	NA	NA	NA				
4,4'-DDT	NA	NA	NA	NA	NA				
ALPHA-CHLORDANE	NA	NA	NA	NA	NA				
DIELDRIN	NA	NA	NA	NA	NA				
GAMMA-CHLORDANE	NA	NA	NA	NA	NA				
HEPTACHLOR	NA	NA	NA	NA	NA				
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
TOTAL PETROLEUM HYDROCARBONS		274	109	2.1	NA	9.2	10.2		1310
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)									
ALUMINUM	NA	NA	NA	NA	NA	29900	3190	13700	8070
ARSENIC	NA	NA	NA	NA	NA	1.5 J	1.2 J	0.76 J	3.8
BARIUM	NA	NA	NA	NA	NA	9.1 J	3.4 J	14.9 J	4.8 J
BERYLLIUM	NA	NA	NA	NA	NA				
CADMIUM	NA	NA	NA	NA	NA	0.88 J	0.45 J	0.6 J	0.65 J
CALCIUM	NA	NA	NA	NA	NA	399 J	141 J	374 J	234 J
CHROMIUM	NA	NA	NA	NA	NA	20	5.4	8.6	12.3
COBALT	NA	NA	NA	NA	NA	1.3 J		1.4 J	
COPPER	NA	NA	NA	NA	NA	6.6	2.1 J	4.2 J	3 J
IRON	NA	NA	NA	NA	NA	15100	5830	6970	13200
LEAD	7	5.5	2.3	2.2	NA	3.7	0.92	2.7	21.1
MAGNESIUM	NA	NA	NA	NA	NA	99 J	25.1 J	139 J	40.6 J
MANGANESE	NA	NA	NA	NA	NA	84.1	15.3	114	31.7
MERCURY	NA	NA	NA	NA	NA	0.03 J		0.03 J	
NICKEL	NA	NA	NA	NA	NA	3.6 J			
POTASSIUM	NA	NA	NA	NA	NA	119 J	82.6 J	129 J	83.6 J
SELENIUM	NA	NA	NA	NA	NA	0.49 J	0.17 J	0.48 J	
SODIUM	NA	NA	NA	NA	NA	186 J	179 J	156 J	249 J
VANADIUM	NA	NA	NA	NA	NA	39.6	16.7	17.6	34.5
ZINC	NA	NA	NA	NA	NA	8.6 J	4 J	8.5 J	6.9
TOTAL ORGANIC CARBON (mg/kg)									
TOTAL ORGANIC CARBON	NA	926	NA	NA	51.2	NA	NA	NA	NA

TABLE 5-23
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 33
NAS WHTING FIELD, MILTON, FLORIDA
PAGE 3 OF 6

SAMPLE NUMBER	33SB2-120-122	33SB2-15-17	33SB2-2-4	33SB2-35-37	33SB2-35-37-D	33SB2-5-7	33SB2-60-62	33SB2-80-82	33SB2-95-97
COLLECTION DATE	12/3/92	12/1/92	12/1/92	12/3/92	12/3/92	12/1/92	12/3/92	12/3/92	12/3/92
SAMPLE DEPTH	120 - 122'	15 - 17'	2 - 4'	35 - 37'	35 - 37'	5 - 7'	60 - 62'	80 - 82'	95 - 97'
VOLATILES (µg/kg)									
1,2-DICHLOROETHENE (TOTAL)									
ACETONE		150 J		14 J			40 J		3 J
ETHYLBENZENE						1500			
METHYLENE CHLORIDE									
TRICHLOROETHENE									
XYLENES, TOTAL						4800			
SEMIVOLATILVES (µg/kg)									
2-METHYLNAPHTHALENE						2100			
BIS(2-ETHYLHEXYL)PHTHALATE			61 J						
BUTYLBENZYL PHTHALATE									
DI-N-BUTYL PHTHALATE									
FLUORENE									
NAPHTHALENE						610			
PHENANTHRENE						240 J			
PYRENE						40 J			
PESTICIDES/PCBs (µg/kg)									
4,4'-DDE	2.4 J								
4,4'-DDT	13 J								
ALPHA-CHLORDANE			50 J			3.3 J			
DIELDRIN			13 J						
GAMMA-CHLORDANE			77 J			4.7 J			
HEPTACHLOR			3.5 J						
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
TOTAL PETROLEUM HYDROCARBONS	2.3	610	17.7	2110	2980	7790	222	862	27.2
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)									
ALUMINUM	36.8 J	8920	9590	616	233	5610	575	597	138
ARSENIC		1.4 J	11.5	0.43 J		5.2	0.36 J		
BARIUM	0.45 J	3.6 J	10.8 J			8.9 J	0.63 J	0.64 J	0.54 J
BERYLLIUM									
CADMIUM		0.65 J	0.39 J			0.77 J			
CALCIUM	81.9 J	147 J	617 J	92.3 J	75.1 J	655 J	88.6 J	82.4 J	56 J
CHROMIUM	2 J	12.8	8.6			21.5	1.3 J	2.9	0.85 J
COBALT									
COPPER	0.54 J	3.7 J	6.5	1.3 J	0.62 J	3.1 J	0.62 J	0.93 J	0.65 J
IRON	67.4	13900	5970	828 J	324 J	8490	318	1500	333
LEAD	0.26 J	4.9	16.7	1.9 J	1.1 J	24.3	0.45 J	0.57 J	0.29 J
MAGNESIUM	15.1 J	33.9 J	125 J			58.1 J	19 J	20.1 J	11 J
MANGANESE	0.32 J	26.4	41.4	1.7 J		93.3	1.8 J	2.3 J	1.5 J
MERCURY			0.05 J			0.04 J			
NICKEL									
POTASSIUM		77 J	124 J			90 J	42.2 J	49.1 J	
SELENIUM							0.25 J		
SODIUM	157 J	202 J	179 J	162 J	147 J	171 J	159 J	163 J	128 J
VANADIUM		37.1	16.3	2.4 J	1.1 J	17.1	1.2 J	6.7 J	0.97 J
ZINC	15.4	6.2 J	19.3			7.6	4.9 J	4.8 J	1.9 J
TOTAL ORGANIC CARBON (mg/kg)									
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	15100	NA	NA	NA

TABLE 5-23
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 33
NAS WHTING FIELD, MILTON, FLORIDA
PAGE 4 OF 6

SAMPLE NUMBER	33SB3-10-12	33SB3-15-17	33SB3-4-6	33SB4-15-17	33SB4-3-5	33SB4-5-7	33SB5-10-12	33SB5-20-22	33SB5-5-7
COLLECTION DATE	12/1/92	12/1/92	12/1/92	12/2/92	12/2/92	12/2/92	12/6/92	12/6/92	12/6/92
SAMPLE DEPTH	10 - 12'	15 - 17'	4 - 6'	15 - 17'	3 - 5'	5 - 7'	10 - 12'	20 - 22'	5 - 7'
VOLATILES (µg/kg)									
1,2-DICHLOROETHENE (TOTAL)									
ACETONE	5 J	35 J	3 J						
ETHYLBENZENE									
METHYLENE CHLORIDE									
TRICHLOROETHENE									
XYLENES, TOTAL									
SEMIVOLATILVES (µg/kg)									
2-METHYLNAPHTHALENE									
BIS(2-ETHYLHEXYL)PHTHALATE		190 J		56 J	410 J				
BUTYLBENZYL PHTHALATE									
DI-N-BUTYL PHTHALATE									
FLUORENE									
NAPHTHALENE									
PHENANTHRENE									
PYRENE									
PESTICIDES/PCBs (µg/kg)									
4,4'-DDE									
4,4'-DDT									
ALPHA-CHLORDANE									
DIELDRIN									
GAMMA-CHLORDANE									
HEPTACHLOR									
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
TOTAL PETROLEUM HYDROCARBONS		4.3		5.6	14.1		4.8		18.2
TPH (C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)									
ALUMINUM	25100	14400	11000	3740	9960	27000	36100	6320	47800
ARSENIC	2.9	0.73 J	1.9 J	2.6	0.7 J	2.1 J	0.89 J	2.3	4.9
BARIUM	3.3 J	3.7 J	12.5 J	2.2 J	14.3 J	14.5 J	7.2 J	2.8 J	13.5 J
BERYLLIUM	0.13 J								
CADMIUM	0.52 J	0.68 J	0.57 J	0.5 J	0.45 J	0.72 J	0.74 J	0.55 J	1 J
CALCIUM	209 J	284 J	351 J	263 J	691 J	548 J	254 J	100 J	434 J
CHROMIUM	16.6	12.8	6.9	10.2	6.9	18.5	34.7	11.9	30.6
COBALT			1.5 J		1.8 J	1.3 J			1.8 J
COPPER	4.9 J	4.2 J	2.9 J	2.3 J	2.9 J	5.9	7.8	3.6 J	11.1
IRON	12800	13000	6590	12700	5880	14900	20600	15100	22300
LEAD	3.3	3.5	3.2	4.8	7.5	4.7	4.2	4.7	9.5
MAGNESIUM	62.2 J	69.5 J	124 J	24.9 J	95.8 J	148 J	80.3 J	35.5 J	170 J
MANGANESE	24.3	27.7	87.7	21.8	169	46.8	31.7	17.9	60
MERCURY					0.04 J	0.03 J			0.05 J
NICKEL			2.7 J			3.8 J			3.2 J
POTASSIUM	60 J		93.3 J	43.5 J	107 J	180 J	154 J	116 J	205 J
SELENIUM		0.22 J		0.52 J	0.43 J	0.64 J			
SODIUM	193 J	186 J	165 J	217 J	218 J	214 J	248 J	181 J	160 J
VANADIUM	34.9	34.8	15.9	34.5	14.4	38.2	57.1	40.4	61.5
ZINC	5.2	6.7	5.8 J	4 J	5.9	8.6	7.4	5.2 J	13.6
TOTAL ORGANIC CARBON (mg/kg)									
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 5-23
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 33
NAS WHTING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00603	W33SB00701	W33SB00801	W33SB00901	W33SB00901-D	W33SB01001	W33SB01101	W33SB01201
COLLECTION DATE	3/18/98	3/19/98	3/20/98	3/18/98	3/18/98	3/19/98	3/20/98	3/19/98
SAMPLE DEPTH	28 - 30'	22 - 24'	8 - 10'	14 - 16'	14 - 16'	16 - 18'	6 - 8'	20 - 22'
VOLATILES (µg/kg)								
1,2-DICHLOROETHENE (TOTAL)								
ACETONE			4 J				3 J	
ETHYLBENZENE								
METHYLENE CHLORIDE								
TRICHLOROETHENE								
XYLENES, TOTAL		2 J						
SEMIVOLATILVES (µg/kg)								
2-METHYLNAPHTHALENE								
BIS(2-ETHYLHEXYL)PHTHALATE								
BUTYLBENZYL PHTHALATE								
DI-N-BUTYL PHTHALATE								49 J
FLUORENE								
NAPHTHALENE								
PHENANTHRENE								
PYRENE								
PESTICIDES/PCBs (µg/kg)								
4,4'-DDE								
4,4'-DDT								
ALPHA-CHLORDANE								
DIELDRIN								
GAMMA-CHLORDANE								
HEPTACHLOR								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA
TPH (C8-C40)	9.34							
METALS (mg/kg)								
ALUMINUM	1430	29200	32400	39600	38100	27300	38500	6220
ARSENIC		5.1	4.6	6.8	7.5	4.8	5.6	
BARIUM		5.1	7.7	8.5	9.1	10.1	7.5	5
BERYLLIUM								
CADMIUM								
CALCIUM								227
CHROMIUM	3.1	31.4	19.3	35.1	31.8	24.8	28.4	70
COBALT								
COPPER		6.6	7.9	9.9	9.8	7	8.5	2.8
IRON	378	15100	14700	20300	21000	14000	18300	4160
LEAD	1.2 J	5.1 J	6.1 J	7.3 J	7.4 J	5.1 J	7.1 J	4 J
MAGNESIUM		65.1	130	128	129	127	96.7	56
MANGANESE	1	29.3	34.6	29.1	30.2	9	40.5	9.2
MERCURY								
NICKEL		2.4	2.5	3.1	2.9	2.2	2.5	14
POTASSIUM								
SELENIUM								
SODIUM								
VANADIUM	1.5	42.1	41	59.2	60.9	47.7	50.9	14.4
ZINC		3.4 J	4.9 J	5.3 J	5.2 J	3.8 J	4.3 J	
TOTAL ORGANIC CARBON (mg/kg)								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 5-23
POSITIVE ANALYTICAL DETECTIONS FOR SUBSURFACE SOIL SAMPLES AT SITE 33
NAS WHTING FIELD, MILTON, FLORIDA

Notes:

The chemicals shown in this table are those detected above reporting limits or above background for inorganics.
The A or D in the sample number indicates a duplicate sample.
A blank cell indicates the chemical was analyzed for but not detected.
µg/kg - micrograms per kilogram.
J - The associated numerical value is an estimated quantity.
mg/kg - milligrams per kilogram.
NA - Indicates the chemical was not analyzed for.

TABLE 5-24
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 33
NAS WHITING FIELD, MILTON FLORIDA
PAGE 1 OF 2

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value		
								Region III RBC[2]		Florida[3]
								Soil Industrial	Soil Basis	Soil Industrial
Volatiles										
1,2-Dichloroethene (total)	2/36	0.003	0.004	mg/kg	33B00302-D	0.004	NA	1800	N	130[4]
Acetone	10/36	0.003	0.15	mg/kg	33SB2-15-17(92)	0.15	NA	20000	N	5500
Ethylbenzene	1/36	1.5	1.5	mg/kg	33SB2-5-7(92)	1.5	NA	20000	N	8400
Methylene Chloride	4/36	0.001	0.002	mg/kg	33B00302-D	0.002	NA	760	C	23
Methylene Chloride	4/36	0.001	0.002	mg/kg	33B00303	0.002	NA	760	C	23
Trichloroethene	2/36	0.005	0.013	mg/kg	33B00302-D	0.013	NA	520	C	8.5
Xylenes, Total	3/36	0.002	4.8		33SB2-5-7(92)	4.8	NA	410000	N	40000
Semivolatiles										
2-Methylnaphthalene	3/36	0.079	2.1	mg/kg	33SB2-5-7(92)	2.1	NA	4100	N	560
Bis(2-Ethylhexyl)phthalate	4/36	0.056	0.41	mg/kg	33SB4-3-5(92)	0.41	NA	410	C	280
Butylbenzyl Phthalate	1/36	0.037	0.037	mg/kg	33SB1-25-27(92)	0.037	NA	41000	N	320000
Di-n-butyl phthalate	1/36	0.049	0.049	mg/kg	W33SB01201	0.049	NA	20000	N	140000
Fluorene	1/36	0.15	0.15	mg/kg	33SB2-10-12(92)	0.15	NA	8200	N	28000
Naphthalene	4/36	0.13	0.61	mg/kg	33SB2-5-7(92)	0.61	NA	8200	N	270
Phenanthrene	2/36	0.069	0.24	mg/kg	33SB2-5-7(92)	0.24	NA	4100 [5]	N	30000
Pyrene	1/36	0.04	0.04	mg/kg	33SB2-5-7(92)	0.04	NA	6100	N	37000
Pesticides/PCBs										
4,4'-DDE	1/28	0.0024	0.0024	mg/kg	33SB2-120-122(92)	0.0024	NA	17	C	13
4,4'-DDT	1/28	0.013	0.013	mg/kg	33SB2-120-122(92)	0.013	NA	17	C	13
Alpha-Chlordane	2/28	0.0033	0.05	mg/kg	33SB2-2-4(92)	0.05	NA	16	C	12[6]
Dieldrin	1/28	0.013	0.013	mg/kg	33SB2-2-4(92)	0.013	NA	0.36	C	0.3
Gamma-Chlordane	2/28	0.0047	0.077	mg/kg	33SB2-2-4(92)	0.077	NA	16	C	12[6]
Heptachlor	1/28	0.0035	0.0035	mg/kg	33SB2-2-4(92)	0.0035	NA	1.3	C	0.9
Metals										
Aluminum	28/28	36.8	47800	mg/kg	33SB5-5-7(92)	47800	13917	200000	N	NA
Arsenic	23/28	0.36	11.5	mg/kg	33SB2-2-4(92)	11.5	3.1	3.8	C	3.7
Barium	26/28	0.45	14.9	mg/kg	33SB1-3-5(92)	14.9	7.9	14000	N	87000
Beryllium	1/28	0.13	0.13	mg/kg	33SB3-10-12(92)	0.13	0.13	410	N	800
Cadmium	16/28	0.39	1	mg/kg	33SB5-5-7(92)	1	0.46	100	N	1300
Calcium	22/28	56	691	mg/kg	33SB4-3-5(92)	691	222	NA	-	NA
Chromium	27/28	0.85	70	mg/kg	W33SB01201	70	11.4	610 [7]	N	420 [7]
Cobalt	6/28	1.3	1.8	mg/kg	33SB4-3-5(92)	1.8	0.74	12000	N	110000
Cobalt	6/28	1.3	1.8	mg/kg	33SB5-5-7(92)	1.8	0.74	12000	N	110000
Copper	27/28	0.54	11.1	mg/kg	33SB5-5-7(92)	11.1	4.4	8200	N	73000
Iron	28/28	67.4	22300	mg/kg	33SB5-5-7(92)	22300	9055	61000	N	480000

TABLE 5-24
SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS AT SITE 33
NAS WHITING FIELD, MILTON FLORIDA

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value: Region III RBC[2] Soil Industrial	Screening Toxicity Value: Region III RBC[2] Soil Basis	Screening Toxicity Value: Florida[3] Soil Industrial
Metals (Continued)										
Lead	37/38	0.26	24.3	mg/kg	33SB2-5-7(92)	24.3	4.2	400[8]	-	920
Magnesium	26/28	11	170	mg/kg	33SB5-5-7(92)	170	136	NA	-	NA
Manganese	28/28	0.32	169	mg/kg	33SB4-3-5(92)	169	21.3	4100	N	22000
Mercury	7/28	0.03	0.05	mg/kg	33SB2-2-4(92)	0.05	ND	61[9]	N	26
Mercury	7/28	0.03	0.05	mg/kg	33SB5-5-7(92)	0.05	ND	61[9]	N	26
Nickel	10/28	2.2	14	mg/kg	W33SB01201	14	2.5	4100	N	28000
Potassium	17/28	42.2	205	mg/kg	33SB5-5-7(92)	205	90.5	NA	-	NA
Selenium	8/28	0.17	0.64	mg/kg	33SB4-5-7(92)	0.64	0.15	1000	N	10000
Sodium	21/28	128	249	mg/kg	33SB2-10-12(92)	249	ND	NA	-	NA
Vanadium	27/28	0.97	61.5	mg/kg	33SB5-5-7(92)	61.5	22.5	1400	N	7400
Zinc	25/28	1.9	19.3	mg/kg	33SB2-2-4(92)	19.3	7.8	61000	N	560000
Total Petroleum Hydrocarbons										
Total Petroleum Hydrocarbons	20/32	2.1	7790	mg/kg	33SB2-5-7(92)	7790	NA	NA	-	2500
TPH (c8-c40)	1/7	9.34	9.34	mg/kg	W33SB00603	9.34	NA	NA	-	2500
Total Organic Carbon										
Total Organic Carbon	6/6	45.9	926	mg/kg	33B00303	926	NA	NA	-	NA

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-EES 1998. Background screening value for inorganics is two times the mean detected concentration
(2) Region III Risk-Based Concentration Table, October 1, 1998 (USEPA 1998a). (Note: 1/10th RBC value used for non-carcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., January 21, 1999.
(4) Value is for cis-1,2-dichloroethene.
(5) Value is for naphthalene.
(6) Value is for chlordane.
(7) Value is for hexavalent chromium.
(8) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(9) Value is for mercuric chloride.
The average of a sample and its duplicate is used for all criteria.
J - estimated value.
mg/kg - milligrams per kilogram.
NA - not available
ND - not determined

(40 J µg/kg). No SVOCs were detected at concentrations above the USEPA Region III industrial RBCs or the FDEP industrial soil cleanup goals. The distribution of SVOCs in the subsurface soil at Site 33 is presented on Figure 5-11.

Total Petroleum Hydrocarbons

TPH was detected in 20 of 32 samples analyzed for TPH. Concentrations ranged from 2.1 mg/kg to 7,790 mg/kg. The maximum concentration was detected in 33SB2-5-7 (5 to 7 feet bgs). TPH (c8-c40) was detected in one of seven samples analyzed for the fraction: it was detected at a concentration of 9.34 mg/kg in W33SB00603 (28 to 30 feet bgs). Two samples (33SB2-35-37-D, 35 to 37 feet bgs, and 33SB2-5-7, 5 to 7 feet bgs) contained TPH concentrations exceeding the FDEP industrial soil cleanup goals of 2,500 mg/kg. The distribution of TPH at Site 33 is shown on Figure 5-11.

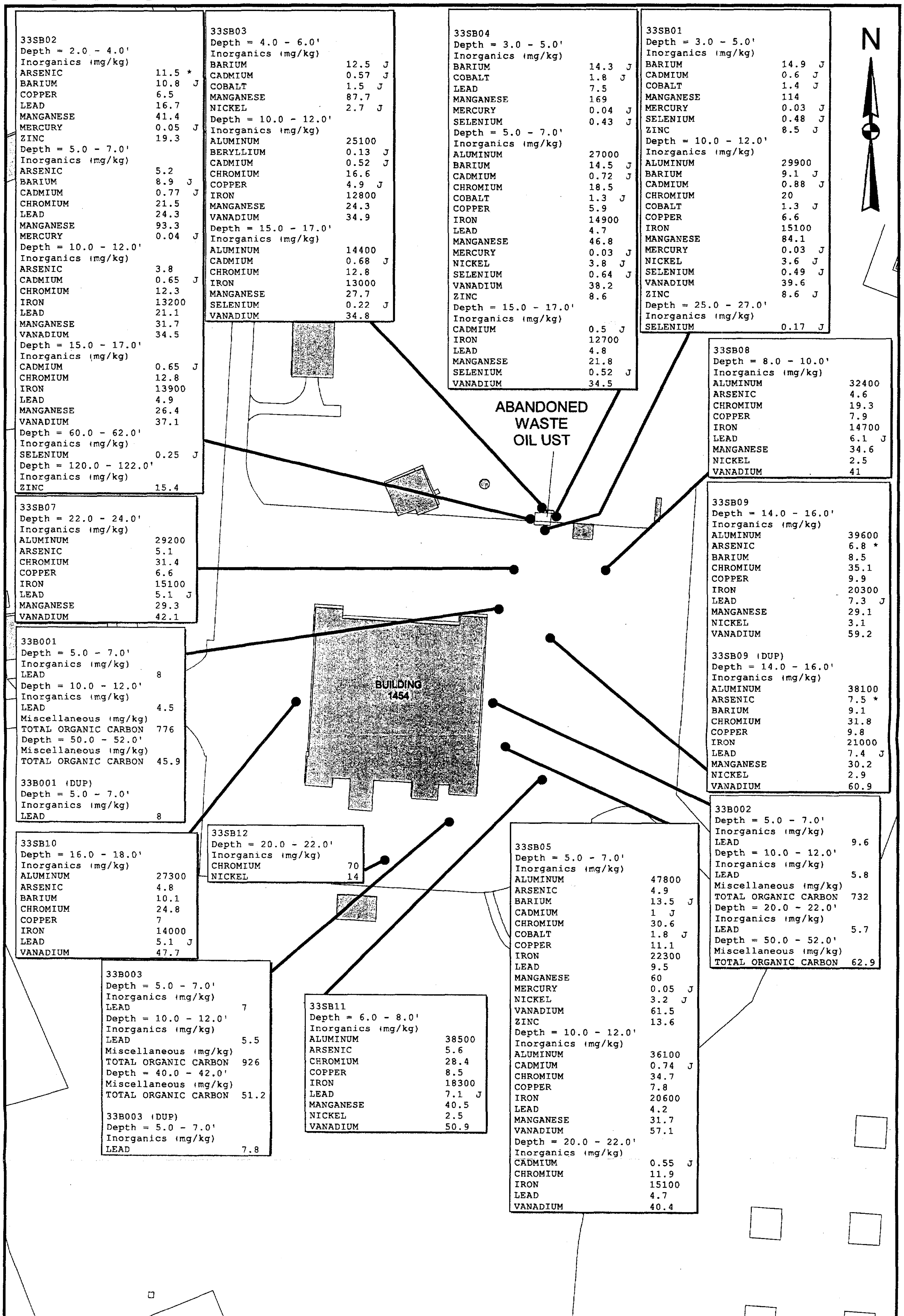
Pesticides/PCBs

Six pesticide/PCB compounds were detected in the subsurface soil at Site 33. All the compounds were detected at 33SB2 at depths between 2 and 122 feet bgs. Pesticides 4,4'-DDE and 4,4'-DDT were detected in the deepest soil sample (120-122 feet bgs) at 33SB2 at estimated concentrations of 2.4 µg/kg and 13 µg/kg, respectively. Maximum concentrations of the other four compounds (alpha-chlordane, dieldren, gamma-chlordane, and heptachlor) were detected in the 2- to 4-foot sample depth range at concentrations ranging from 3.5 µg/kg of heptachlor to 77 µg/kg of gamma-chlordane. No pesticide/PCBs were detected above the USEPA Region III industrial RBCs or the FDEP industrial soil cleanup goals. The distribution of pesticides/PCBs in the subsurface soil at Site 33 is shown on Figure 5-11.

Inorganics

Twenty inorganic analytes were detected in the subsurface soil at Site 33. Fifteen non-nutrient analytes (aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, vanadium, and zinc) were detected above background levels. Lead was detected in 37 of 38 samples at concentrations ranging from 0.26 to 24.3 mg/kg. Of the 15 analytes detected above background, only arsenic exceeded regulatory criteria. Arsenic was detected in 23 of 28 samples at concentrations ranging from 0.36 to 11.5 mg/kg. Ten of the detections exceeded the USEPA Region III industrial RBCs and the FDEP industrial soil cleanup goals. Distribution of inorganic analytes in the subsurface soil is shown on Figure 5-21.

P:\GIS\NAS_WHITING_FIELD\7541_028.APR 12-MAY-99 DNP INORGANICS IN SUBSURFACE SOIL - SITE 33 LAYOUT



NOTE:
Results marked with an asterisk (*) exceed background and EPA or FDEP industrial screening criteria.

DRAWN BY: J. BELLONE	DATE: 15-SEP-99	INORGANICS IN SUBSURFACE SOIL AT SITE 33 NAS WHITING FIELD, MILTON, FLORIDA	CONTRACT NUMBER: —
CHECKED BY:	DATE:		APPROVED BY: — DATE: —
COST/SCHEDULE-AREA			APPROVED BY: — DATE: —
SCALE: AS NOTED			DRAWING NO.: FIGURE 5-21 REV: 0

00241G212

5.2.6.3 Summary

The source of chemicals in the surface and subsurface soils at Site 33 can be attributed to maintenance activities at the Midfield Hangar for aircraft and ground equipment and a possible release near the former underground waste oil tank. Chemicals detected in the surface and subsurface soils include VOCs, SVOCs, pesticides/PCBs, and inorganics.

The area around the former underground waste oil tank displays the highest number and concentrations of all chemicals at the site. The horizontal extent of the soil impact around the waste oil tank appears to be the immediate tank vicinity. The high number of metals and SVOCs in the soil in that area suggests a waste oil source for the soil chemicals. The deepest soil impact was from pesticide compounds and TPH at a depth of 120 to 122 feet bgs in 33SB02, a saturated sample. The deepest VOC detected in the subsurface soil was acetone at a depth of 95 to 97 feet bgs.

Soil at the southeast corner of Building 1454 contains VOC, SVOCs, and inorganics. The area of impact is limited to that corner and concentrations do not exceed regulatory limits. The deepest sample where chemicals were detected in this area was 20 to 22 feet bgs. The trace detections of TCE and 1,2-DCE indicate a solvent source used at the facility for engine parts cleaning.

6.0 HUMAN HEALTH RISK ASSESSMENT

An HHRA has been conducted as part of the RI for Sites 3, 4, 6, 30, 32, and 33 at NAS Whiting Field. The purpose of the HHRA is to characterize the risks associated with the potential exposures to chemicals detected in surface and subsurface soil. The HHRA for groundwater will be conducted as part of the RI for Site 40, Basewide Groundwater. This HHRA is conducted in accordance with the following guidance documents:

- Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A) (USEPA, 1989b),
- Guidance for Data Useability in Risk Assessment (Part A), Final (USEPA, 1992c), and
- Region IV Risk Assessment Guidance (USEPA, 1995).

Additionally, the HHRA will consider FDEP guidance:

- Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C. (FDEP, 1999).

The methodology for the HHRA is described in Chapter 2.0 of the GIR (ABB-ES, 1998). The HHRA methodology presented in the GIR (ABB-ES, 1998) consists of the following steps:

- Data evaluation
- Selection of COPCs
- Exposure assessment
- Toxicity assessment
- Risk characterization

The reader should note that the baseline risk assessment (BRA) presented in this document was prepared per the guidelines established by the USEPA for the CERCLA and RCRA programs. The BRA was performed to provide risk estimates to be used to determine if remedial actions (e.g., deed restrictions, environmental cleanup) are necessary. However, the RI process and the BRA do not override or negate an employer's obligations under the Occupational Safety and Health Act (OSHA). The Permissible Exposure Limits established by OSHA are regulatory requirements that must be complied with by each employer to which they apply. Also, it should be noted the underlying risk assessment methodology (and assumptions) used to perform BRAs differ from that used to derive occupational exposure limits set by OSHA and other agencies such as the American Conference of Governmental Industrial Hygienists and the National Institute for Occupational Safety and Health. These agencies establish regulatory and recommended exposure limits designed to protect employees from deleterious effects (acute to chronic, local as well as systemic). These agency limits consider both time-weighted average and instantaneous exposures, focusing primarily on the inhalation route of exposure (with lesser regard to direct dermal contact, and little to no consideration of ingestion as a likely occupational exposure pathway). BRA methodology is often tailored to reflect site-specific conditions and land use scenarios. The methodology often considers several different, relatively long-term exposures (e.g., a year for a construction worker, 25 years for the typical industrial worker, 30 years for a hypothetical future resident) and focuses on systemic effects of exposure through the ingestion, dermal contact, and inhalation routes of exposure. However, in some cases, the dermal contact and inhalation routes of exposure are evaluated qualitatively only.

The location, physical description, and history associated with Sites 3, 4, 6, 30, 32,and 33 are described in Chapters 1.0 and 2.0 of this report. During the RI, surface soil and subsurface soil samples were collected from Sites 3, 4, 6, 30, 32, and 33. Exposure via surface and subsurface soil pathways was quantified for Sites 3, 4, and 6. Sites 32 and 33 are covered with concrete and Site 30 is mostly covered with concrete, limiting potential current surface soil exposure to a small area of Site 30. However, for purposes of completeness, exposures to surface soils were evaluated in Section 6.5 assuming the concrete was removed from Sites 30, 32, and 33. The investigation methodology, sampling locations, and the sampling rationale are presented in Chapter 3.0 of this report. A discussion of the analytical results is presented in Chapter 5.0.

6.1 DATA EVALUATION

The data evaluation involves numerous activities, including sorting data by medium, evaluating analytical methods, evaluating quantitation limits, and evaluating data quality with respect to qualifiers and codes.

The DQOs for collecting environmental samples and conducting laboratory analyses are described in the GIR (ABB-ES, 1998). Chemical analyses were performed in accordance with the CLP Statement of Work. The analytical results were evaluated, using the National Functional Guidelines (USEPA, 1994a,b) and the Quality Assurance Section of the RI/FS Work Plan (Brown & Root Environmental, 1997b) to assess the laboratory's compliance with the analytical methodology. The analytical data were reviewed, validated, and evaluated using the criteria specified in the DQOs. Based upon the evaluation of the analytical data conformance with the DQOs, the data presented in this report are acceptable for use in this HHRA. See Sections 3.0 and 4.0 for further details.

Contract-required detection limits (CRDLs) for surface and subsurface soil were compared to USEPA Region III RBCs and Florida Soil Cleanup Target Levels for residential and industrial scenarios, respectively.

6.2 SELECTION OF HUMAN HEALTH CHEMICALS OF POTENTIAL CONCERN

COPCs were selected using the methodology described in Section 2.5 of the GIR (ABB-ES, 1998). This COPC methodology considers (1) frequency of detection of analytes, (2) consistency with background conditions, (3) a comparison to regulatory and risk-based screening values, and (4) the presence of analytes in blanks or laboratory QC samples.

In selecting COPCs, USEPA Region IV criteria (USEPA, 1995) and USEPA Region III (1998a) and Florida SCTLs (FDEP, 1999) were used. For each medium, the following criteria were used to exclude detected analytes from the list of COPCs. Each criterion by itself was justification for excluding the analyte.

Less than 5 Percent Frequency of Detection. If an analyte had a frequency of detection (number of samples in which the analyte was detected divided by the number of samples analyzed for that analyte) less than 5 percent (USEPA, 1995) and was not selected as a COPC in another medium, it was not selected as a COPC. The frequency of detection screening criteria was only considered when there were greater than 20 samples in a specific medium. No COPCs were eliminated from this HHRA based on the frequency screening criteria.

Less than Background Screening Concentrations. If the maximum detected concentration of an analyte was less than twice the arithmetic mean of the background concentration (inorganics only), the analyte was not selected as a COPC (USEPA, 1995). The background data sets for surface soil and subsurface soil are identified below.

- A representative surface soil background data set consisting of eight Troup loamy soil samples was used for background screening of Sites 3, 4, 30, 32, and 33 surface soil. Sample locations are identified on Figure 3-10 of the GIR (ABB-ES, 1998), and sampling rationale is discussed in Subsection 3.3.1 of the GIR (ABB-ES, 1998). The background surface soil data used for screening Sites 3, 4, 30, 32, and 33 surface soils are presented in Table 3-8 of the GIR (ABB-ES, 1998). Table 3-9 in the GIR (ABB-ES, 1998) presents the summary statistics and background screening value (twice the arithmetic mean of detected analyte concentrations) used in the HHRA surface soil evaluation.

- A representative surface soil background data set consisting of eight Troup loamy soil samples and one Dothan/Lucy/Bonifay soil sample was used for background screening of Site 6 surface soil. Sample locations are identified on Figure 3-10 of the GIR (ABB-ES, 1998), and sampling rationale is discussed in Subsection 3.3.1 of the GIR (ABB-ES, 1998). The background surface soil data used for screening Site 6 surface soil are presented in Tables 3-8 and 3-14 of the GIR (ABB-ES, 1998). The two data sets were combined and background screening values were determined (twice the arithmetic mean of detected analyte concentrations).

- Sixteen background subsurface soil sample locations for Whiting Field are identified in Figure 3-10 of the GIR (ABB-ES, 1998) and are discussed in Subsection 3.3.1 of the GIR (ABB-ES, 1998). Tables 3-15 through 3-17 of the GIR (ABB-ES, 1998) present analyte concentrations detected in the background samples for various types of subsurface soil. All background subsurface soil data were combined into one data set for background screening due to the limited number of background samples of certain soil types. Table 3-18 in the GIR (ABB-ES, 1998) presents the summary statistics for analytes detected in background subsurface soil samples and used for selecting COPCs in Sites 3, 4, 6, 30, 32, and 33 subsurface soil.

Less than Risk-Based Screening Concentrations, Standards, and Guidelines. If the maximum detected concentration of the analyte in a medium was less than its corresponding adjusted USEPA Region III RBC (USEPA, 1998a), and less than Florida standards and guidelines, the analyte was not selected as a COPC (USEPA, 1995). In the USEPA Region III RBC table, the target hazard quotient (HQ) is 1 and the target cancer risk is 1×10^{-6}. All RBCs based on noncarcinogenic effects were adjusted for a target HQ of 0.1 per USEPA Region IV guidance (USEPA, 1995).

The maximum detected concentrations of analytes in surface soil were compared to the Region III RBCs (USEPA, 1998a) and Florida Soil Cleanup Target Levels developed assuming a residential land use scenario. The maximum subsurface soil concentrations were compared to the Region III Risk-Based Concentrations (USEPA, 1998a) and Florida Soil Cleanup Target Levels (FDEP, 1999) developed assuming an industrial/and use scenario. No RBC is available for lead in soil due to a lack of toxicity data. Based on USEPA recommendation, a screening level of 400 mg/kg for lead under residential land use is used as the RBC for lead in soil (USEPA, 1994c). No RBC is available for TRPH; therefore, the FDEP Risk-Based Cleanup Target Levels of 350 mg/kg and 2,500 mg/kg are used for screening surface and subsurface soil, respectively (FDEP, 1999).

Less than Essential Nutrient Screening Values. If the maximum detected concentration of an essential nutrient (i.e., sodium, potassium, magnesium, and calcium) in a medium was below a toxic level and consistent with or only slightly above its background concentration, the essential nutrient was not selected as a COPC. The derivation of essential nutrient screening values is presented in Appendix C-1 of the GIR (ABB-ES, 1998). Iron was not screened using the essential nutrient value.

Comparison to Associated Blank Concentrations. If the analyte concentration was within 5 or 10 times the associated blank concentration for the common laboratory contaminants, the analyte was not selected as a COPC (USEPA, 1989b).

If the analyte met any of the above criteria, it was not selected as a COPC. In situations where multiple screening values were available, a chemical was excluded only if its maximum concentration was less than all of the corresponding screening values. After applying these criteria with professional judgment, COPCs were identified for each medium. COPC selection for surface and subsurface soil at each site is presented in Sections 6.2.1 through 6.2.6.

When TPH or iron was selected as a COPC, the risk of TPH or iron exposure for each receptor was evaluated separately. TPH and iron risks are discussed in Sections 6.7 and 6.8 due to the uncertainty associated with the results.

6.2.1 Site 3 Surface and Subsurface Soil

Surface Soil

Eight surface soil samples [3SB1-0-2(93), 3SB2-1-2(93), 3SB3-0-2(93), 3SB4-0-2(93), 3SB5-1-2(93), 3SB6-1-2(93), 3SB9-1-2(93), and W03SB01301] were collected from Site 3 (Figure 3-1). VOCs, SVOCs, PCBs, and inorganic data from all of these samples were evaluated in this HHRA. Table 6-1 identifies the six analytes (dieldrin, aluminum, arsenic, chromium, iron, and vanadium) selected as COPCs for surface soil at Site 3.

Subsurface Soil

Fifteen subsurface soil samples [3SB1-5-7(93), 3SB10-10-12(93), 3SB2-5-7(93), 3SB3-10-12(93), 3SB3-5-7(93), 3SB4-10-12(93), 3SB4-5-7(93), 3SB5-10-12(93), 3SB5-5-7(93), 3SB6-10-12(93), 3SB6-5-7(93), 3SB7-10-12(93), 3SB8-10-12(93) 3SB9-5-7(93), and 3SB2-10-12(93) with duplicate 3SB2-10-12A(93)] were collected from Site 3 (Figure 3-1). VOCs, SVOCs, pesticides, PCBs, and inorganic data from these samples were evaluated in this HHRA. Table 6-2 identifies arsenic as the only COPC in the subsurface soil.

TABLE 6-1

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 3 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Scenario Time Frame:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil (0 to 2 feet)
Exposure Point:	Site 3

CAS Number	Chemical	Minimum Detected Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Location of Sample Maximum	Units	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value(1)	Screening Toxicity Value Region III (2) Soil Residential	Soil(4) Basis	Florida (3) Soil Residential	COPC Flag	Rationale for Contaminant Deletion or Selection(5)
Volatiles																
78-93-3	2-Butanone	0.006	J	0.006	J	3SB3-0-2(93)	mg/kg	1/7	0.01 - 0.011	0.006	NA	4700	N	3100	No	BSL
67-64-1	Acetone	0.016		0.1		3SB3-0-2(93)	mg/kg	2/8	0.005 - 0.011	0.1	NA	780	N	780	No	BSL
127-18-4	Tetrachloroethene	0.003	J	0.003	J	3SB5-1-2(93)	mg/kg	1/8	0.005 - 0.011	0.003	NA	12	C	8.9	No	BSL
Semivolatiles																
56-55-3	Benzo(a)anthracene	0.098	J	0.098	J	3SB9-1-2(93)	mg/kg	1/7	0.35 - 0.38	0.098	NA	0.87	C	1.4	No	BSL
50-32-8	Benzo(a)pyrene	0.02	J	0.04	J	3SB9-1-2(93)	mg/kg	2/7	0.35 - 0.38	0.04	NA	0.087	C	0.1	No	BSL
205-99-2	Benzo(b)fluoranthene	0.084	J	0.084	J	3SB9-1-2(93)	mg/kg	1/7	0.35 - 0.38	0.084	NA	0.87	C	1.4	No	BSL
207-08-9	Benzo(k)fluoranthene	0.081	J	0.081	J	3SB9-1-2(93)	mg/kg	1/7	0.35 - 0.38	0.081	NA	8.7	C	15	No	BSL
117-81-7	Bis(2-Ethylhexyl)phthalate	0.037	J	0.037	J	3SB2-1-2(93)	mg/kg	1/7	0.34 - 0.38	0.037	0.08	46	C	76	No	BSL
218-01-9	Chrysene	0.13	J	0.13	J	3SB9-1-2(93)	mg/kg	1/7	0.35 - 0.38	0.13	NA	87	C	140	No	BSL
53-70-3	Dibenzo(a,h)anthracene	0.006	J	0.006	J	W03SB01301	mg/kg	1/7	0.34 - 0.38	0.006	NA	0.087	C	0.1	No	BSL
206-44-0	Fluoranthene	0.22	J	0.22	J	3SB9-1-2(93)	mg/kg	1/7	0.35 - 0.38	0.22	NA	310	N	2900	No	BSL
85-01-8	Phenanthrene	0.048	J	0.048	J	3SB9-1-2(93)	mg/kg	1/7	0.35 - 0.38	0.048	NA	160 (6)	N	2000	No	BSL
129-00-0	Pyrene	0.18	J	0.18	J	3SB9-1-2(93)	mg/kg	1/7	0.35 - 0.38	0.18	NA	230	N	2200	No	BSL
Pesticides/PCBs																
72-54-8	4,4'-DDD	0.0042		0.0042		3SB3-0-2(93)	mg/kg	1/8	0.0035 - 0.0093	0.0042	NA	2.7	C	4.6	No	BSL
72-55-9	4,4'-DDE	0.0005	J	0.0034	J	3SB3-0-2(93)	mg/kg	3/8	0.0035 - 0.0036	0.0034	NA	1.9	C	3.3	No	BSL
50-29-3	4,4'-DDT	0.0009	J	0.001	J	W03SB01301	mg/kg	2/8	0.0021 - 0.0093	0.001	NA	1.9	C	3.3	No	BSL
5103-71-9	Alpha-Chlordane	0.01		0.01		3SB1-0-2(93)	mg/kg	1/8	0.0018 - 0.0019	0.01	NA	1.8 (7)	C	3.1 (7)	No	BSL
60-57-1	**Dieldrin**	0.0009	J	0.044		3SB3-0-2(93)	mg/kg	4/8	0.0035 - 0.0036	0.044	NA	0.04	C	0.07	Yes	ASL
12789-03-6	Gamma-Chlordane	0.017		0.017		3SB1-0-2(93)	mg/kg	1/8	0.0018 - 0.0019	0.017	NA	1.8 (7)	C	3.1 (7)	No	BSL
1024-57-3	Heptachlor Epoxide	0.026		0.026		3SB1-0-2(93)	mg/kg	1/8	0.0018 - 0.0019	0.026	NA	0.07	C	0.1	No	BSL
Inorganics																
7429-90-5	**Aluminum**	4380		21500		3SB3-0-2(93)	mg/kg	8/8	NA	21500	15848	7800	N	72000	Yes	ASL
7440-38-2	**Arsenic**	0.58	J	5.5		3SB1-0-2(93)	mg/kg	8/8	NA	5.5	3.2	0.43	C	0.8	Yes	ASL
7440-39-3	Barium	6.4	J	16.2	J	3SB5-1-2(93)	mg/kg	8/8	NA	16.2	23.2	550	N	110	No	BSL
7440-41-7	Beryllium	0.06	J	0.09	J	3SB1-0-2(93)	mg/kg	2/8	0.06 - 0.65	0.09	0.36	16	N	120	No	BSL
7440-43-9	Cadmium	0.36	J	0.72	J	3SB3-0-2(93)	mg/kg	3/8	0.26 - 0.88	0.72	0.58	3.9	N	75	No	BSL
7440-70-2	Calcium	261	J	1380		3SB4-0-2(93)	mg/kg	8/8	NA	1380	396	NA	--	NA	No	NUT
7440-47-3	**Chromium**	3.2		42.7		3SB3-0-2(93)	mg/kg	8/8	NA	42.7	11	23 (8)	N	210 (8)	Yes	ASL
7440-48-4	Cobalt	1	J	1.7	J	3SB4-0-2(93)	mg/kg	5/8	1.1 - 1.3	1.7	3	470	N	4700	No	BSL
7440-50-8	Copper	1.4	J	9.6		3SB1-0-2(93)	mg/kg	8/8	NA	9.6	9.4	310	N	110	No	BSL
57-12-5	Cyanide	0.41	J	0.51	J	3SB1-0-2(93)	mg/kg	3/7	0.16 - 0.17	0.51	0.28	160	N	30	No	BSL
7439-89-6	**Iron**	2590		12900		3SB2-1-2(93)	mg/kg	8/8	NA	12900	8832	2300	N	23000	Yes	ASL
7439-92-1	Lead	1.5	J	14.5		3SB1-0-2(93)	mg/kg	8/8	NA	14.5	11.4	400 (9)	--	400	No	BSL
7439-95-4	Magnesium	61.3	J	226	J	3SB6-1-2(93)	mg/kg	8/8	NA	226	268	NA	--	NA	No	NUT
7439-96-5	Manganese	25		151		3SB4-0-2(93)	mg/kg	8/8	NA	151	392	160	N	1600	No	BSL
7439-97-6	Mercury	0.02	J	0.06		3SB5-1-2(93)	mg/kg	5/8	0.02 - 0.04	0.06	0.12	2.3 (10)	N	3.4	No	BSL

TABLE 6-1

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 3 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

CAS Number	Chemical	Minimum Detected Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Location of Sample Maximum	Units	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value Region III[2] Soil Residential	Screening Toxicity Value Region III Soil[4] Basis	Screening Toxicity Value Florida[3] Soil Residential	COPC Flag	Rationale for Contaminant Deletion or Selection[5]
7440-02-0	Nickel	1.7	J	15.7		3SB3-0-2(93)	mg/kg	5/8	2.6 - 2.8	15.7	7.2	160	N	110	No	BSL
7440-09-7	Potassium	93	J	175	J	3SB5-1-2(93)	mg/kg	5/8	108 - 144	175	177	NA	--	NA	No	NUT
7782-49-2	Selenium	0.41	J	2.7		3SB1-0-2(93)	mg/kg	4/8	0.1 - 1.1	2.7	0.46	39	N	390	No	BSL
7440-22-4	Silver	0.57	J	1	J	3SB2-1-2(93)	mg/kg	2/8	0.44 - 0.65	1	0.7	39	N	390	No	BSL
7440-23-5	Sodium	165	J	212	J	3SB3-0-2(93)	mg/kg	4/8	11.6 - 108	212	406	NA	--	NA	No	NUT
7440-28-0	Thallium	0.15	J	0.15	J	3SB9-1-2(93)	mg/kg	1/8	0.15 - 4.8	0.15	1.16	0.55	N	NA	No	BSL
7440-62-2	**Vanadium**	5.9	J	34		3SB3-0-2(93)	mg/kg	8/8	NA	34	21.8	55	N	15	Yes	ASL
7440-66-6	Zinc	1.5	J	12.2		3SB5-1-2(93)	mg/kg	8/8	NA	12.2	15.4	2300	N	23000	No	BSL
Petroleum Hydrocarbons																
NA	TPH	7.6		27.8		3SB2-1-2(93)	mg/kg	6/8	NA	27.8	NA	NA	--	340	No	BSL

Notes:

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.

(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).

(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.

(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated samples:

3SB1-0-2(93)	3SB3-0-2(93)	3SB5-1-2(93)	3SB9-1-2(93)
3SB2-1-2(93)	3SB4-0-2(93)	3SB6-1-2(93)	W03SB01301

(5) Rationale codes: Selection or Deletion Reason:
Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)

(6) Value is for naphthalene.

(7) Value is for chlordane.

(8) Value is for hexavalent chromium.

(9) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

(10) Value is for mercuric chloride.

Chemicals which exceed criteria are bolded.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not available

TABLE 6-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 3 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Scenario Time Frame:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil (2 to 15 feet)
Exposure Point:	Site 3

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value Region III [2] Soil Industrial	Soil[4] Basis	Florida [3] Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Volatiles																
67-64-1	Acetone	0.001	J	0.09		mg/kg	3SB3-5-7(93)	9/15	0.011 - 0.013	0.09	NA	20000	N	5500	No	BSL
127-18-4	Tetrachloroethene	0.003	J	0.003	J	mg/kg	3SB5-5-7(93)	1/15	0.011 - 0.013	0.003	NA	110	C	17	No	BSL
Pesticides/PCBs																
72-54-8	4,4'-DDD	0.005	J	0.005	J	mg/kg	3SB7-10-12(93)	1/15	0.0036 - 0.0096	0.005	NA	24	C	18	No	BSL
50-29-3	4,4'-DDT	0.005	J	0.005	J	mg/kg	3SB7-10-12(93)	1/15	0.0036 - 0.0096	0.005	NA	17	C	13	No	BSL
60-57-1	Dieldrin	0.026		0.026		mg/kg	3SB1-5-7(93)	1/15	0.0036 - 0.0042	0.026	NA	0.36	C	0.3	No	BSL
Inorganics																
7429-90-5	Aluminum	1780		59600		mg/kg	3SB6-5-7(93)	15/15	NA	59600	27834	200000	N	NA	No	BSL
7440-38-2	**Arsenic**	0.62	J	16		mg/kg	3SB6-5-7(93)	15/15	0.47	16	6.2	3.8	C	3.7	Yes	ASL
7440-39-3	Barium	1.3	J	16.4	J	mg/kg	3SB9-5-7(93)	15/15	NA	16.4	15.8	14000	N	87000	No	BSL
7440-41-7	Beryllium	0.07	J	0.13	J	mg/kg	3SB7-10-12(93)	3/15	0.06 - 0.13	0.13	0.26	410	N	800	No	BSL
7440-43-9	Cadmium	0.31	J	0.79	J	mg/kg	3SB5-10-12(93)	6/15	0.27 - 0.95	0.79	0.92	100	N	1300	No	BSL
7440-70-2	Calcium	10.7	J	429	J	mg/kg	3SB9-5-7(93)	13/15	7.5 - 7.6	429	444	NA	--	NA	No	NUT
7440-47-3	Chromium	3.6		37.9		mg/kg	3SB6-5-7(93)	15/15	NA	37.9	22.8	610 [6]	N	420 [6]	No	BSL
7440-48-4	Cobalt	0.87	J	3.2	J	mg/kg	3SB1-5-7(93)	5/15	0.49 - 1.5	3.2	1.48	12000	N	110000	No	BSL
7440-50-8	Copper	1	J	11.1		mg/kg	3SB5-10-12(93)	14/15	0.37	11.1	8.80	8200	N	73000	No	BSL
57-12-5	Cyanide	0.19	J	2.6		mg/kg	3SB2-10-12(93)	8/15	0.17 - 0.19	2.6		4100	N	39000	No	BSL
7439-89-6	Iron	4380		32600		mg/kg	3SB2-5-7(93)	15/15	NA	32600	18110	61000	N	480000	No	BSL
7439-92-1	Lead	0.94		6.6		mg/kg	3SB1-5-7(93)	15/15	NA	6.6	8.4	400 [7]	--	920	No	BSL
7439-95-4	Magnesium	17.3	J	265	J	mg/kg	3SB6-5-7(93)	15/15	NA	265	272	NA	--	NA	No	NUT
7439-96-5	Manganese	4.2		39.4		mg/kg	3SB5-5-7(93)	15/15	NA	39.4	42.6	4100	N	22000	No	BSL
7439-97-6	Mercury	0.02	J	0.1		mg/kg	3SB2-5-7(93)	10/15	0.02 - 0.03	0.1		61 [8]	N	26	No	BSL
7440-02-0	Nickel	2.1	J	5	J	mg/kg	3SB6-5-7(93)	8/15	1.7 - 2.9	5	5	4100	N	28000	No	BSL
7440-09-7	Potassium	53.2	J	190	J	mg/kg	3SB6-5-7(93)	13/15	112 - 119	190	181	NA	--	NA	No	NUT
7782-49-2	Selenium	0.13	J	4.9		mg/kg	3SB7-10-12(93)	9/15	0.11 - 0.76	4.9	0.3	1000	N	10000	No	BSL
7440-22-4	Silver	0.55	J	2.1	J	mg/kg	3SB2-5-7(93)	3/15	0.47 - 0.58	2.1	1.12	1000	N	9100	No	BSL
7440-23-5	Sodium	12.7	J	217	J	mg/kg	3SB9-5-7(93)	10/15	12.1 - 13.4	217		NA	--	NA	No	NUT

TABLE 6-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 3 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value(1)	Screening Toxicity Value Region III (2) Soil Industrial	Screening Toxicity Value Region III Soil(4) Basis	Screening Toxicity Value Florida (3) Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection (5)
7440-62-2	Vanadium	14.5		77.2		mg/kg	3SB2-5-7(93)	15/15	NA	77.2	45	1400	N	7400	No	BSL
7440-66-6	Zinc	1.8	J	11.1		mg/kg	3SB5-10-12(93)	12/15	0.34 - 0.36	11.1	15.6	61000	N	560000	No	BSL
Petroleum Hydrocarbons																
NA	TPH	4.9		16.6		mg/kg	3SB1-5-7(93)	2/15	NA	16.6	NA	NA	--	2500	No	BSL

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated samples:

3SB1-5-7(93)	3SB2-10-12(93)-AVG	3SB4-10-12(93)	3SB6-10-12(93)	3SB9-5-7(93)
3SB10-10-12(93)	3SB2-5-7(93)	3SB4-5-7(93)	3SB6-5-7(93)	
3SB2-10-12(93)	3SB3-10-12(93)	3SB5-10-12(93)	3SB7-10-12(93)	
3SB2-10-12A(93)-D	3SB3-5-7(93)	3SB5-5-7(93)	3SB8-10-12(93)	

(5) Rationale codes: Selection or Deletion Reason: Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)

(6) Value is for hexavalent chromium.
(7) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(8) Value is for mercuric chloride.

Chemicals which exceed criteria are bolded.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not available

6.2.2 Site 4 Surface and Subsurface Soil

Surface Soil

Eleven surface soil samples (W04SB00101, W04SB00201, W04SB00301, W04SB00401 and duplicate W04SB00401-D, W04SB00601, W04SB00701, W04SB00801, W04SB00901, W04SB01001, and W04SB05001) were collected from Site 4 (Figure 3-1). VOCs, SVOCs, PCBs, and inorganic data from all of these samples were evaluated in this HHRA. Table 6-3 identifies the five analytes (dieldrin, aluminum, arsenic, iron, and vanadium) selected as COPCs for surface soil at Site 4.

Subsurface Soil

Only one sample, W04SB00702, and its duplicate, W04SB00702-D, were collected from the subsurface soil from a depth of 2 to 15 feet bgs at Site 4 (Figure 3-1). VOCs, SVOCs, pesticides, PCBs, and inorganic data from this sample were evaluated in this HHRA. Table 6-4A identifies arsenic as the only COPC in the subsurface soil from 2 to 15 feet bgs.

However, as a conservative approach and because the bottoms of the former USTs were located at 15 to 16.5 feet bgs, samples collected from 2 to 22 feet bgs were also evaluated. Six subsurface soil samples (W04SB00102, W04SB00202 and duplicate W04SB00202-D, W04SB00302 and duplicate W04SB00302-D, W04SB00602, W04SB00702 and duplicate W04SB00702-D, and W04SB00902 and duplicate W04SB00902-D) were collected at depths from 2 to 22 feet. The samples were analyzed for VOCs, SVOCs, pesticides, PCBs, and inorganic compounds. Table 6-4B identifies the eight analytes selected as COPCs for subsurface soil at 2 to 22 feet bgs. These include arsenic, benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. According to Section 2.5.5 of the GIR (ABB-ES, 1998), if one carcinogenic PAH is selected as a COPC [i.e. benzo(a)pyrene], all carcinogenic PAHs will be retained as COPCs. This approach is conservative and risk is likely to be overestimated, since all carcinogenic PAHs were evaluated.

6.2.3 Site 6 Surface and Subsurface Soil

Surface Soil

Three surface soil samples [6SB2-0-2(92), 6SB3-0-2(92) and duplicate 6SB3-0-2A(92), and 6SB4-0-2(92] were collected from Site 6 (Figure 3-2). VOCs, SVOCs, PCBs, and inorganic data from all of these samples were evaluated in this HHRA. Table 6-5 identifies the fourteen analytes [benzo(a)anthracene,

TABLE 6-3
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 4 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Scenario Time Frame:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil (0 to 2 feet)
Exposure Point:	Site 4

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value Region III[2] Soil Residential	Soil[4] Basis	Florida [3] Soil Residential	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Volatiles																
67-64-1	Acetone	0.006	J	0.98	J	mg/kg	W04SB01001	5/11	0.005 - 0.007	0.98	NA	780	N	780	No	BSL
75-15-0	Carbon Disulfide	0.001	J	0.001	J	mg/kg	W04SB00801	1/11	0.005 - 0.006	0.001	NA	780	N	200	No	BSL
100-41-4	Ethylbenzene	0.002	J	0.002	J	mg/kg	W04SB00301	1/11	0.005 - 0.006	0.002	NA	780	N	1100	No	BSL
108-88-3	Toluene	0.001	J	0.011		mg/kg	W04SB00301	2/11	0.005 - 0.006	0.011	NA	1600	N	380	No	BSL
1330-20-7	Xylenes, Total	0.002	J	0.004	J	mg/kg	W04SB00301	3/11	0.005 - 0.006	0.004	NA	16000	N	5900	No	BSL
Semivolatiles																
120-12-7	Anthracene	0.058	J	0.058	J	mg/kg	W04SB00301	1/11	0.35 - 0.39	0.058	NA	2300	N	18000	No	BSL
56-55-3	Benzo(a)anthracene	0.048	J	0.084	J	mg/kg	W04SB00601	2/11	0.35 - 0.39	0.084	NA	0.87	C	1.4	No	BSL
50-32-8	Benzo(a)pyrene	0.022	J	0.08	J	mg/kg	W04SB00601	3/11	0.1 - 0.12	0.08	NA	0.087	C	0.1	No	BSL
117-81-7	Bis(2-Ethylhexyl)phthalate	0.039	J	0.25	J	mg/kg	W04SB01101	7/11	0.36	0.25	NA	46	C	76	No	BSL
218-01-9	Chrysene	0.093	J	0.11	J	mg/kg	W04SB00301	2/11	0.35 - 0.39	0.11	NA	87	C	140	No	BSL
84-74-2	Di-n-butyl phthalate	0.036	J	0.036	J	mg/kg	W04SB01101	1/11	0.35 - 0.39	0.036	NA	780	N	7300	No	BSL
117-84-0	Di-n-octyl phthalate	0.048	J	0.048	J	mg/kg	W04SB01001	1/11	0.35 - 0.39	0.048	NA	160	N	1500	No	BSL
53-70-3	Dibenzo(a,h)anthracene	0.007	J	0.031	J	mg/kg	W04SB00601	3/11	0.1 - 0.12	0.031	NA	0.087	C	0.1	No	BSL
206-44-0	Fluoranthene	0.062	J	0.08	J	mg/kg	W04SB00301	3/11	0.35 - 0.39	0.08	NA	310	N	2900	No	BSL
206-44-0	Fluoranthene	0.062	J	0.08	J	mg/kg	W04SB00601	3/11	0.35 - 0.39	0.08	NA	310	N	2900	No	BSL
621-64-7	N-Nitroso-di-n-propylamine	0.01	J	0.01	J	mg/kg	W04SB00601	1/11	0.021 - 0.023	0.01	NA	0.091	C	0.09	No	BSL
85-01-8	Phenanthrene	0.075	J	0.075	J	mg/kg	W04SB00301	1/11	0.35 - 0.39	0.075	NA	160 (6)	--	2000	No	BSL
129-00-0	Pyrene	0.059	J	0.073	J	mg/kg	W04SB00601	3/11	0.35 - 0.39	0.073	NA	230	N	2200	No	BSL
Pesticides/PCBs																
72-55-9	4,4'-DDE	0.0019	J	0.063		mg/kg	W04SB01101	3/11	0.0036 - 0.0039	0.063	NA	1.9	C	3.3	No	BSL
50-29-3	4,4'-DDT	0.0017	J	0.036	J	mg/kg	W04SB01101	3/11	0.0036 - 0.0039	0.036	NA	1.9	C	3.3	No	BSL
60-57-1	**Dieldrin**	0.0004	J	0.085		mg/kg	W04SB01101	4/11	0.0036 - 0.0039	0.085	NA	0.04	C	0.07	Yes	ASL
Inorganics																
7429-90-5	**Aluminum**	7580		27800		mg/kg	W04SB00901	11/11	NA	27800	15848	7800	N	72000	Yes	ASL
7440-38-2	**Arsenic**	0.92		5.5		mg/kg	W04SB00601	9/11	2.1	5.5	3.2	0.43	C	0.8	Yes	ASL
7440-39-3	Barium	5.8		16.1		mg/kg	W04SB00701	11/11	NA	16.1	23.2	550	N	110	No	BSL
7440-70-2	Calcium	140		38000		mg/kg	W04SB00501	7/11	210 - 223	38000	396	NA	--	NA	No	NUT
7440-47-3	Chromium	5.2		21.6		mg/kg	W04SB00601	11/11	NA	21.6	11	23 (7)	N	210 (7)	No	BSL
7440-48-4	Cobalt	0.55		0.65		mg/kg	W04SB01101	3/11	0.43 - 1.1	0.65	3	470	N	4700	No	BSL
7440-50-8	Copper	2.5		8.1		mg/kg	W04SB00601	11/11	NA	8.1	9.4	310	N	110	No	BSL
7439-89-6	**Iron**	3800		14800		mg/kg	W04SB00601	11/11	NA	14800	8832	2300	N	23000	Yes	ASL
7439-92-1	Lead	3.4		19.2	J	mg/kg	W04SB00601	11/11	NA	19.2	11.4	400 (8)	--	400	No	BSL
7439-95-4	Magnesium	75.6		827		mg/kg	W04SB00501	10/11	125	827	268	NA	--	NA	No	NUT
7439-96-5	Manganese	23.2		161		mg/kg	W04SB00701	11/11	NA	161	392	160	N	1600	No	BSL
7439-97-6	Mercury	0.03		0.03		mg/kg	W04SB00401	1/11	0.03 - 0.04	0.03	0.12	2.3 (9)	N	3.4	No	BSL
7440-02-0	Nickel	1.2		3.3		mg/kg	W04SB00701	11/11	NA	3.3	7.2	160	N	110	No	BSL
7440-09-7	Potassium	50.3		160		mg/kg	W04SB00801	10/10	NA	160	177	NA	--	NA	No	NUT

TABLE 6-3
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 4 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value: Region III[2] Soil Residential	Region III[2] Soil[4] Basis	Florida [3] Soil Residential	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
7440-62-2	**Vanadium**	10.6		41.4		mg/kg	W04SB00601	11/11	NA	41.4	21.8	55	N	15	Yes	ASL
7440-66-6	Zinc	4.3		16.9		mg/kg	W04SB00701	11/11	NA	16.9	15.4	2300	N	23000	No	BSL
Petroleum Hydrocarbons																
NA	TPH	7.2		166		mg/kg	W04SB00701	8/11	NA	166	NA	NA	–	340	No	BSL

Notes:

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated samples:

W04SB00101 W04SB00401 W04SB00601 W04SB00901 W04SB05001
W04SB00201 W04SB00401-AVG W04SB00701 W04SB01001
W04SB00301 W04SB00401-D W04SB00801 W04SB01101

(5) Rationale codes: Selection or Deletion Reason: Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)

(6) Value is for naphthalene.
(7) Value is for hexavalent chromium.
(8) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(9) Value is for mercuric chloride.

Chemicals which exceed criteria are bolded.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not available

TABLE 6-4A
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 4 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Time Frame:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil (2 to 15 feet)
Exposure Point:	Site 4

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Detected Concentration	Maximum Qualifier	Units	Location of Maximun Concentraion	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Values [1]	Screening Toxicity Value Region III [2] Soil Industrial	Soil Basis[4]	Florida[3] Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Volatiles																
67-64-1	Acetone	0.21	J	0.21	J	mg/kg	W04SB00702	1/1	0.029	0.21	NA	20000	N	5500	No	BSL
100-41-4	Ethylbenzene	2.1		3.8		mg/kg	W04SB00702-D	1/1	NA	3.8	NA	20000	N	8400	No	BSL
1330-20-7	Xylenes, Total	1.2		2.9		mg/kg	W04SB00702-D	1/1	NA	2.9	NA	410000	N	40000	No	BSL
Semivolatiles																
91-57-6	2-Methylnaphthalene	0.046	J	0.059	J	mg/kg	W04SB00702-D	1/1	NA	0.059	NA	4100	N	560	No	BSL
117-81-7	Bis(2-Ethylhexyl)phthalate	0.053	J	0.053	J	mg/kg	W04SB00702-D	1/1	0.39	0.053	NA	410	C	280	No	BSL
621-64-7	N-Nitroso-di-n-propylamine	0.038		0.041		mg/kg	W04SB00702	1/1	NA	0.041	NA	0.82	C	0.2	No	BSL
Inorganics																
7429-90-5	Aluminum	27500		29600		mg/kg	W04SB00702	1/1	NA	29600	27834	200000	N	NA	No	BSL
7440-38-2	**Arsenic**	6.2		6.4		mg/kg	W04SB00702	1/1	NA	6.4	6.2	3.8	C	3.7	Yes	ASL
7440-39-3	Barium	6.9		7.4		mg/kg	W04SB00702-D	1/1	NA	7.4	15.8	14000	N	87000	No	BSL
7440-47-3	Chromium	32.1	J	34.4	J	mg/kg	W04SB00702	1/1	NA	34.4	22.8	610 [6]	N	420 [6]	No	BSL
7440-50-8	Copper	7.1	J	7.3	J	mg/kg	W04SB00702	1/1	NA	7.3	8.80	8200	N	73000	No	BSL
7439-89-6	Iron	16600		17800		mg/kg	W04SB00702	1/1	NA	17800	18110	61000	N	480000	No	BSL
7439-92-1	Lead	14.7	J	15.3	J	mg/kg	W04SB00702-D	1/1	NA	15.3	8.4	400 [7]	--	920	No	BSL
7439-95-4	Magnesium	99.4		103		mg/kg	W04SB00702-D	1/1	NA	103	272	NA	--	NA	No	NUT
7439-96-5	Manganese	17.9		19.1		mg/kg	W04SB00702	1/1	NA	19.1	42.6	4100	N	22000	No	BSL
7440-02-0	Nickel	2.5		5		mg/kg	W04SB00702-D	1/1	NA	5	5	4100	N	28000	No	BSL
7440-09-7	Potassium	138		147		mg/kg	W04SB00702-D	1/1	NA	147	181	NA	--	NA	No	NUT
7440-62-2	Vanadium	49.8		52.6		mg/kg	W04SB00702	1/1	NA	52.6	45	1400	N	7400	No	BSL
7440-66-6	Zinc	5.1		5.2		mg/kg	W04SB00702-D	1/1	NA	5.2	15.6	61000	N	560000	No	BSL
Petroleum Hydrocarbons																
NA	TPH	53.8		80.1		mg/kg	W04SB00702	1/1	NA	80.1	NA	NA	--	2500	No	BSL

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated samples:

W04SB00702 W04SB00702-D W04SB00702-AVG
(5) Rationale codes: Selection or Deletion Reason: Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)
(6) Value is for hexavalent chromium.
(7) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

Chemicals which exceed criteria are bolded.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not applicable

TABLE 6-4B
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 4 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Scenario Time Frame:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil (2 to 22 feet)
Exposure Point:	Site 4

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value Region III [2] Soil Industrial	Screening Toxicity Value Region III [2] Soil[4] Basis	Screening Toxicity Value Florida [3] Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Volatiles																
67-64-1	Acetone	0.036	J	0.86	J	mg/kg	W04SB00902	3/6	0.006 - 0.03	0.86	NA	20000	N	5500	No	BSL
75-15-0	Carbon Disulfide	0.003	J	0.003	J	mg/kg	W04SB00302-D	1/6	0.006 - 0.03	0.003	NA	20000	N	1400	No	BSL
74-87-3	Chloromethane	0.017	J	0.017	J	mg/kg	W04SB00602	1/6	0.006 - 0.029	0.017	NA	440	C	2.3	No	BSL
100-41-4	Ethylbenzene	0.073		13	J	mg/kg	W04SB00602	5/6	0.006	13	NA	20000	N	8400	No	BSL
108-88-3	Toluene	0.046		20	J	mg/kg	W04SB00602	2/6	0.006 - 0.029	20	NA	41000	N	2600	No	BSL
1330-20-7	Xylenes, Total	0.28		46	J	mg/kg	W04SB00602	5/6	0.006	46	NA	410000	N	40000	No	BSL
Semivolatiles																
105-67-9	2,4-Dimethylphenol	0.042	J	0.042	J	mg/kg	W04SB00602	1/6	0.37 - 0.39	0.042	NA	4100	N	9800	No	BSL
91-57-6	2-Methylnaphthalene	0.04	J	0.39	J	mg/kg	W04SB00302-D	3/6	0.37 - 0.39	0.39	NA	4100	N	560	No	BSL
95-48-7	2-Methylphenol	0.31	J	0.31	J	mg/kg	W04SB00602	1/6	0.37 - 0.39	0.31	NA	10000	N	28000	No	BSL
106-44-5	4-Methylphenol	0.5		0.5		mg/kg	W04SB00602	1/6	0.37 - 0.39	0.5	NA	1000	N	3000	No	BSL
83-32-9	Acenaphthene	0.083	J	1.9		mg/kg	W04SB00302-D	2/6	0.37 - 0.39	1.9	NA	12000	N	18000	No	BSL
120-12-7	Anthracene	0.041	J	1.6		mg/kg	W04SB00302-D	3/6	0.38 - 0.39	1.6	NA	61000	N	260000	No	BSL
56-55-3	**Benzo(a)anthracene**	0.072	J	1.9		mg/kg	W04SB00302-D	3/6	0.38 - 0.39	1.9	NA	7.8	C	5	Yes	(6)
50-32-8	**Benzo(a)pyrene**	0.048	J	1.1	J	mg/kg	W04SB00302-D	3/6	0.11 - 0.12	1.1	NA	0.78	C	0.5	Yes	ASL
205-99-2	**Benzo(b)fluoranthene**	0.046	J	1.2		mg/kg	W04SB00302-D	2/6	0.37 - 0.39	1.2	NA	7.8	C	4.8	Yes	(6)
191-24-2	Benzo(g,h,i)perylene	0.11	J	0.11	J	mg/kg	W04SB00302	1/6	0.37 - 0.4	0.11	NA	4100 (7)	N	41000	No	BSL
207-08-9	**Benzo(k)fluoranthene**	0.052	J	0.59		mg/kg	W04SB00302-D	2/6	0.37 - 0.39	0.59	NA	78	C	52	Yes	(6)
117-81-7	Bis(2-Ethylhexyl)phthalate	0.053	J	0.29	J	mg/kg	W04SB00302-D	2/6	0.37 - 0.4	0.29	NA	410	C	280	No	BSL
86-74-8	Carbazole	0.047	J	0.16	J	mg/kg	W04SB00302-D	2/6	0.38 - 0.4	0.16	NA	290	C	190	No	BSL
218-01-9	**Chrysene**	0.059	J	0.94		mg/kg	W04SB00302-D	3/6	0.38 - 0.39	0.94	NA	780	C	450	Yes	(6)
53-70-3	**Dibenzo(a,h)anthracene**	0.009	J	0.23		mg/kg	W04SB00302-D	3/6	0.11 - 0.12	0.23	NA	0.78	C	0.5	Yes	(6)
132-64-9	Dibenzofuran	0.051	J	0.7		mg/kg	W04SB00302-D	2/6	0.37 - 0.39	0.7	NA	820	N	5000	No	BSL
206-44-0	Fluoranthene	0.19	J	5		mg/kg	W04SB00302-D	3/6	0.38 - 0.39	5	NA	8200	N	48000	No	BSL
86-73-7	Fluorene	0.079	J	1.3		mg/kg	W04SB00302-D	2/6	0.37 - 0.39	1.3	NA	8200	N	28000	No	BSL
193-39-5	**Indeno(1,2,3-cd)pyrene**	0.12	J	0.12	J	mg/kg	W04SB00302	1/6	0.37 - 0.4	0.12	NA	7.8	C	5.3	Yes	(6)
621-64-7	N-Nitroso-di-n-propylamine	0.014	J	0.061		mg/kg	W04SB00302-D	4/6	0.023	0.061	NA	0.82	C	0.2	No	BSL
91-20-3	Naphthalene	0.05	J	0.77		mg/kg	W04SB00302-D	2/6	0.37 - 0.39	0.77	NA	4100	N	270	No	BSL
85-01-8	Phenanthrene	0.14	J	5		mg/kg	W04SB00302-D	3/6	0.38 - 0.39	5	NA	4100 (7)	N	30000	No	BSL
129-00-0	Pyrene	0.12	J	4.9		mg/kg	W04SB00302-D	3/6	0.38 - 0.39	4.9	NA	6100	N	37000	No	BSL
Inorganics																
7429-90-5	Aluminum	1700		29600		mg/kg	W04SB00702	6/6	NA	29600	27834	200000	N	NA	No	BSL
7440-38-2	**Arsenic**	1.2		6.4		mg/kg	W04SB00702	4/6	1.1 - 2.4	6.4	6.2	3.8	C	3.7	Yes	ASL
7440-39-3	Barium	3.8		13		mg/kg	W04SB00602	5/6	2.2 - 2.3	13	15.8	14000	N	87000	No	BSL
7440-70-2	Calcium	1040		1040		mg/kg	W04SB00202-D	1/6	114 - 239	1040	444	NA	--	NA	No	NUT
7440-47-3	Chromium	4.4		36.8		mg/kg	W04SB00102	6/6	NA	36.8	22.8	610 (8)	N	420 (8)	No	BSL
7440-50-8	Copper	1.5		9		mg/kg	W04SB00902-D	5/6	1.1 - 1.2	9	8.80	8200	N	73000	No	BSL
7439-89-6	Iron	964		22400		mg/kg	W04SB00902	6/6	NA	22400	18110	61000	N	480000	No	BSL
7439-92-1	Lead	3.1	J	15.3	J	mg/kg	W04SB00702-D	6/6	NA	15.3	8.4	400 (9)	--	920	No	BSL
7439-95-4	Magnesium	54.6		103		mg/kg	W04SB00702-D	4/6	15.4 - 68.7	103	272	NA	--	NA	No	NUT
7439-96-5	Manganese	3.9		116		mg/kg	W04SB00902	6/6	NA	116	42.6	4100	N	22000	No	BSL
7440-02-0	Nickel	1.3		5		mg/kg	W04SB00702-D	4/6	0.57 - 1.2	5	5	4100	N	28000	No	BSL

TABLE 6-4B
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 4 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value Region III [2] Soil Industrial	Screening Toxicity Value Region III [2] Soil[4] Basis	Screening Toxicity Value Florida [3] Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Inorganics (Continued)																
7440-09-7	Potassium	44.3		327		mg/kg	W04SB00602	6/6	NA	327	181	NA	--	NA	No	NUT
7440-62-2	Vanadium	4.6		52.6		mg/kg	W04SB00702	6/6	NA	52.6	45	1400	N	7400	No	BSL
7440-66-6	Zinc	1.2		5.2		mg/kg	W04SB00702-D	4/6	2.2 - 2.4	5.2	15.6	61000	N	560000	No	BSL
Petroleum Hydrocarbons																
NA	TPH (c8-c40)	8.84	J	179		mg/kg	W04SB00302	5/6	9.6 - 10	179	NA	NA	--	2500	No	BSL

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated Samples:

W04SB00102	W04SB00702	W04SB00902-AVG	W04SB00302-D
W04SB00202	W04SB00702-AVG	W04SB00902-D	W04SB00602
W04SB00202-AVG	W04SB00702-D	W04SB00302	
W04SB00202-D	W04SB00902	W04SB00302-AVG	

(5) Rationale codes: Selection or Deletion Reason: Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)
(6) If one carcinogenic PAH exceeded criteria, then all carcinogenic PAHs were chosen as COPCs.
(7) Value is for naphthalene.
(8) Value is for hexavalent chromium.
(9) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

Chemicals are bolded which exceed criteria or are carcinogenic PAHs.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not available

TABLE 6-5
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 6 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA

Scenario Time Frame:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil (0 to 2 feet)
Exposure Point:	Site 6

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[1]	Screening Toxicity Value: Region III[2] Soil Residential	Screening Toxicity Value: Region III[2] Soil[4] Basis	Screening Toxicity Value: Florida[3] Soil Residential	COPC Flag	Rationale for Contaminant Deletion or Selection[5]
Volatiles																
78-93-3	2-Butanone	0.004	J	0.004	J	mg/kg	6SB4-0-2(92)	1/3	0.011 - 0.012	0.004	NA	4700	N	3100	No	BSL
Semivolatiles																
91-57-6	2-Methylnaphthalene	0.048	J	0.048	J	mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	0.048	NA	160	N	83	No	BSL
83-32-9	Acenaphthene	0.12	J	0.19	J	mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	0.19	NA	470	N	1900	No	BSL
120-12-7	Anthracene	0.14	J	0.16	J	mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	0.16	NA	2300	N	18000	No	BSL
56-55-3	**Benzo(a)anthracene**	1.4		1.9		mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	1.9	NA	0.87	C	1.4	Yes	ASL
50-32-8	**Benzo(a)pyrene**	1.6		1.9		mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	1.9	NA	0.087	C	0.1	Yes	ASL
205-99-2	**Benzo(b)fluoranthene**	2		2.1		mg/kg	6SB3-0-2(92)	1/3	0.37 - 0.4	2.1	NA	0.87	C	1.4	Yes	ASL
191-24-2	Benzo(g,h,i)perylene	0.96		1.1		mg/kg	6SB3-0-2(92)	1/3	0.37 - 0.4	1.1	NA	NA	--	2300	No	BSL
207-08-9	**Benzo(k)fluoranthene**	1.5		1.7		mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	1.7	NA	8.7	C	15	Yes	[6]
117-81-7	Bis(2-Ethylhexyl)phthalate	0.84		1.3		mg/kg	6SB3-0-2(92)	1/3	0.37 - 0.4	1.3	0.161	46	C	76	No	BSL
85-68-7	Butylbenzyl Phthalate	0.15	J	0.26	J	mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	0.26	NA	1600	N	15000	No	BSL
86-74-8	Carbazole	0.26	J	0.3	J	mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	0.3	NA	32	C	53	No	BSL
218-01-9	**Chrysene**	1.7		2.1		mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	2.1	NA	87	C	140	Yes	[6]
53-70-3	**Dibenzo(a,h)anthracene**	0.053	J	0.2	J	mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	0.2	NA	0.087	C	0.1	Yes	ASL
132-64-9	Dibenzofuran	0.047	J	0.067	J	mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	0.067	NA	31	N	280	No	BSL
206-44-0	Fluoranthene	2.4		2.6		mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	2.6	NA	310	N	2900	No	BSL
86-73-7	Fluorene	0.09	J	0.14	J	mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	0.14	NA	310	N	2200	No	BSL
193-39-5	**Indeno(1,2,3-cd)pyrene**	1.4		1.6		mg/kg	6SB3-0-2(92)	1/3	0.37 - 0.4	1.6	NA	0.87	C	1.5	Yes	ASL
85-01-8	Phenanthrene	1.2		1.5		mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	1.5	NA	160[7]	--	2000	No	BSL
129-00-0	Pyrene	2		2.1		mg/kg	6SB3-0-2(92)-D	1/3	0.37 - 0.4	2.1	NA	230	N	2200	No	BSL
Pesticides/PCBs																
72-54-8	4,4'-DDD	0.13	J	0.13	J	mg/kg	6SB4-0-2(92)	1/3	0.0037 - 0.039	0.13	NA	2.7	C	4.6	No	BSL
72-55-9	4,4'-DDE	0.024	J	0.024	J	mg/kg	6SB4-0-2(92)	1/3	0.0037 - 0.039	0.024	NA	1.9	C	3.3	No	BSL
11096-82-5	**Aroclor-1260**	0.6	J	0.6	J	mg/kg	6SB4-0-2(92)	1/3	0.037 - 0.39	0.6	NA	0.32	C	0.5[8]	Yes	ASL
60-57-1	Dieldrin	0.03	J	0.03	J	mg/kg	6SB4-0-2(92)	1/3	0.0037 - 0.039	0.03	NA	0.04	C	0.07	No	BSL
Inorganics																
7429-90-5	**Aluminum**	8460		29100		mg/kg	6SB4-0-2(92)	3/3	NA	29100	15334	7800	N	72000	Yes	ASL
7440-38-2	**Arsenic**	2.1	J	3.5		mg/kg	6SB3-0-2(92)	3/3	NA	3.5	3.05	0.43	C	0.8	Yes	ASL
7440-39-3	Barium	11.2	J	19.4	J	mg/kg	6SB2-0-2(92)	3/3	NA	19.4	23.7	550	N	110	No	BSL
7440-41-7	Beryllium	0.19	J	0.37	J	mg/kg	6SB2-0-2(92)	2/3	0.12	0.37	0.35	16	N	120	No	BSL
7440-43-9	Cadmium	0.75	J	2.1		mg/kg	6SB4-0-2(92)	3/3	NA	2.1	0.575	3.9	N	75	No	BSL
7440-70-2	Calcium	209	J	664	J	mg/kg	6SB3-0-2(92)-D	3/3	NA	664	403	NA	--	NA	No	NUT
7440-47-3	**Chromium**	16.3		65	J	mg/kg	6SB3-0-2(92)	3/3	NA	65	10.7	23[9]	N	210[9]	Yes	ASL
7440-48-4	Cobalt	1.9	J	1.9	J	mg/kg	6SB2-0-2(92)	1/3	1.4	1.9	2.93	470	N	4700	No	BSL
7440-50-8	Copper	6.4		50.5		mg/kg	6SB4-0-2(92)	3/3	NA	50.5	9.32	310	N	110	No	BSL
7439-89-6	**Iron**	10000		14800		mg/kg	6SB2-0-2(92)	3/3	NA	14800	8589	2300	N	23000	Yes	ASL
7439-92-1	Lead	14.7		252	J	mg/kg	6SB3-0-2(92)	3/3	NA	252	11.4	400[10]	--	400	No	BSL
7439-95-4	Magnesium	103	J	145	J	mg/kg	6SB2-0-2(92)	3/3	NA	145	257	NA	--	NA	No	NUT
7439-96-5	Manganese	20		180		mg/kg	6SB2-0-2(92)	3/3	NA	180	403	160	N	1600	No	BBV
7439-97-6	Mercury	0.03	J	0.13		mg/kg	6SB4-0-2(92)	3/3	NA	0.13	0.113	2.3[11]	N	3.4	No	BSL
7440-02-0	Nickel	2.1	J	3.1	J	mg/kg	6SB3-0-2(92)-D	2/3	1.9	3.1	7.27	160	N	110	No	BSL
7440-09-7	Potassium	121	J	130	J	mg/kg	6SB2-0-2(92)	2/3	63.1 - 82.6	130	177	NA	--	NA	No	NUT
7440-22-4	Silver	0.69	J	0.69	J	mg/kg	6SB3-0-2(92)-D	1/3	0.47 - 0.51	0.69	0.7	39	N	390	No	BSL
7440-23-5	Sodium	162	J	233	J	mg/kg	6SB3-0-2(92)	3/3	NA	233	388	NA	--	NA	No	NUT
7440-28-0	Thallium	0.17	J	0.17	J	mg/kg	6SB4-0-2(92)	1/3	0.16 - 0.23	0.17	1.16	0.55	N	NA	No	BSL

TABLE 6-5
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 6 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value(1)	Screening Toxicity Value Region III(2) Soil Residential	Screening Toxicity Value Region III(2) Soil(4) Basis	Screening Toxicity Value Florida (3) Soil Residential	COPC Flag	Rationale for Contaminant Deletion or Selection (5)
7440-62-2	**Vanadium**	28.4		42.2		mg/kg	6SB4-0-2(92)	3/3	NA	42.2	21.2	55	N	15	Yes	ASL
7440-66-6	Zinc	9.2		162		mg/kg	6SB4-0-2(92)	3/3	NA	162	15.4	2300	N	23000	No	BSL
Petroleum Hydrocarbons																
NA	**TPH**	3580		3580		mg/kg	6SB4-0-2(92)	1/1	NA	3580	NA	NA	--	340	Yes	ASL

Notes:

(1) Troup Loamy Soil (Table 3-9) and Dothan/Lucy/Bonifay Soil (Table 3-14), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated samples:
6SB2-0-2(92) 6SB3-0-2(92) 6SB3-0-2A(92)-D 6SB3-0-2(92)-AVG

(5) Rationale codes: Selection or Deletion Reason:
Above Screening Level (ASL)
Below Background Value (BBV)
Essential Nutrient (NUT)
Below Screening Level (BSL)

(6) If one carcinogenic PAH exceeded criteria, all carcinogenic PAHs were chosen as COPCs.
(7) Value is for naphthalene.
(8) Value is for total aroclor.
(9) Value is for hexavalent chromium.
(10) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directi 6SB4-0-2(92)
(11) Value is for mercuric chloride.

Chemicals are bolded which exceed criteria.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not available

benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, Aroclor-1260, aluminum, arsenic, chromium, iron, vanadium, and TPH] selected as COPCs for surface soil at Site 6. According to Section 2.5.5 of the GIR (ABB-ES, 1998), if one carcinogenic PAH is selected as a COPC [i.e., benzo(a)anthracene], all carcinogenic PAHs are retained as COPCs.

Subsurface Soil

Five subsurface soil samples [63SB1-5-7(92), 6SB3-10-12(92), 6SB3-5-7(92), 6SB4-10-12(92), 6SB4-5-7(92)] were collected from Site 6 (Figure 3-2). VOCs, SVOCs, pesticides, PCBs, and inorganic data from these samples were evaluated in this HHRA. Table 6-6 indicates no chemical was selected as a COPC for subsurface soil at Site 6.

6.2.4 Site 30 Surface and Subsurface Soil

Surface Soil

Five surface soil samples [30B00101, 30B00201, 30SB3-0-2(93), W30SB00901, and W30SB01301] were collected from Site 30 (Figure 3-2) in the grass-covered area. VOCs, SVOCs, PCBs, and inorganic data from all of these samples were evaluated in this HHRA. Table 6-7 identifies the six analytes (aluminum, arsenic, chromium, iron, vanadium, and TPH) selected as COPCs for surface soil at Site 30.

Surface Soil: Hypothetical Future Conditions Assuming Concrete Removal

Fifteen surface soil samples [30B00101, 30B00201, 30B00301, 30B00401, 30B00501, 30B00601, 30SB02-0-2(93), 30SB03-0-2(93), 30SB04-0-2(93), 30SB1-2-4(92) and duplicate 30SB1-2-4(92)-D, 30SB5-0-2(93), 30SB6-0-2(93), 30SB7-0-2(93), W30SB00901, and W30SB01301] were collected from 0 to 4 foot depth at Site 30. VOCs, SVOCs, pesticides, PCBs, inorganic and TPH data from these samples were evaluated in this HHRA. Table D9-1 of Appendix D9 identifies the following analytes as COPCs: aluminum, arsenic, chromium, iron, manganese, vanadium, and TPH.

Subsurface Soil

Twenty-five subsurface soil samples [30B00102, 30B00103, 30B00202 and duplicate 30B00202-D, 30B00203, 30B00302, 30B00303, 30B00402, 30B00403, 30B00502 and duplicate 30B00502-D, 30B00503, 30B00602 and duplicate 30B00602-D, 30B00603, 30SB2-10-12(93) 30SB3-10-12(93), 30SB4-5-7(93), 30SB1-10-12(92), 30SB1-2-4(92) and duplicate 30SB1-2-4(92)-D, 30SB1-5-7(92), 30SB4-10-12(93),

TABLE 6-6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 6 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Scenario Time Frame:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil (2 to 15 feet)
Exposure Point:	Site 6

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Detected Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value(1)	Screening Toxicity Value Region III(2) Soil Industrial	Screening Toxicity Value Soil(4) Basis	Screening Toxicity Value Florida (3) Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection(5)
Semivolatiles																
120-12-7	Anthracene	0.11	J	0.11	J	mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.11	NA	61000	N	260000	No	BSL
56-55-3	Benzo(a)anthracene	0.32	J	0.32	J	mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.32	NA	7.8	C	5	No	BSL
50-32-8	Benzo(a)pyrene	0.29	J	0.29	J	mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.29	NA	0.78	C	0.5	No	BSL
205-99-2	Benzo(b)fluoranthene	0.038	J	0.29	J	mg/kg	6SB3-5-7(92)	2/5	0.37 - 0.39	0.29	NA	7.8	C	4.8	No	BSL
191-24-2	Benzo(g,h,i)perylene	0.16	J	0.16	J	mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.16	NA	NA	--	41000	No	BSL
207-08-9	Benzo(k)fluoranthene	0.039	J	0.29	J	mg/kg	6SB3-5-7(92)	2/5	0.37 - 0.39	0.29	NA	78	C	52	No	BSL
117-81-7	Bis(2-Ethylhexyl)phthalate	0.054	J	0.054	J	mg/kg	6SB1-5-7(92)	1/5	0.34 - 0.38	0.054	NA	410	C	280	No	BSL
86-74-8	Carbazole	0.093	J	0.093	J	mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.093	NA	290	C	190	No	BSL
218-01-9	Chrysene	0.34	J	0.34	J	mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.34	NA	780	C	450	No	BSL
206-44-0	Fluoranthene	0.038	J	0.75		mg/kg	6SB3-5-7(92)	2/5	0.37 - 0.39	0.75	NA	8200	N	48000	No	BSL
86-73-7	Fluorene	0.057	J	0.057	J	mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.057	NA	8200	N	28000	No	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	0.2	J	0.2	J	mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.2	NA	7.8	C	5.3	No	BSL
85-01-8	Phenanthrene	0.51		0.51		mg/kg	6SB3-5-7(92)	1/5	0.37 - 0.39	0.51	NA	4100 (6)	--	30000	No	BSL
129-00-0	Pyrene	0.041	J	0.59		mg/kg	6SB3-5-7(92)	2/5	0.37 - 0.39	0.59	NA	6100	N	37000	No	BSL
Pesticides/PCBs																
60-57-1	Dieldrin	0.013	J	0.013	J	mg/kg	6SB1-5-7(92)	1/5	0.0037 - 0.0038	0.013	NA	0.36	C	0.3	No	BSL
Inorganics																
7429-90-5	Aluminum	2250		24300		mg/kg	6SB3-5-7(92)	5/5	NA	24300	27834	200000	N	NA	No	BSL
7440-38-2	Arsenic	0.99	J	2.7		mg/kg	6SB4-10-12(92)	5/5	NA	2.7	6.2	3.8	C	3.7	No	BSL
7440-39-3	Barium	2	J	12.8	J	mg/kg	6SB1-5-7(92)	5/5	NA	12.8	15.8	14000	N	87000	No	BSL
7440-41-7	Beryllium	0.18	J	0.18	J	mg/kg	6SB1-5-7(92)	1/5	0.11 - 0.12	0.18	0.26	410	N	800	No	BSL
7440-43-9	Cadmium	0.4	J	0.86	J	mg/kg	6SB3-5-7(92)	4/5	0.27	0.86	0.92	100	N	1300	No	BSL
7440-70-2	Calcium	101	J	329	J	mg/kg	6SB1-5-7(92)	5/5	NA	329	444	NA	--	NA	No	NUT
7440-47-3	Chromium	8.7		30		mg/kg	6SB3-5-7(92)	5/5	NA	30	22.8	610 (7)	N	420 (7)	No	BSL
7440-50-8	Copper	1.8	J	7.2		mg/kg	6SB3-5-7(92)	5/5	NA	7.2	8.80	8200	N	73000	No	BSL
7439-89-6	Iron	9840		17500		mg/kg	6SB3-5-7(92)	5/5	NA	17500	18110	61000	N	480000	No	BSL
7439-92-1	Lead	3.7		21.1		mg/kg	6SB1-5-7(92)	5/5	NA	21.1	8.4	400 (8)	--	920	No	BSL
7439-95-4	Magnesium	23	J	84.1	J	mg/kg	6SB3-5-7(92)	5/5	NA	84.1	272	NA	--	NA	No	NUT
7439-96-5	Manganese	13.7		73.7		mg/kg	6SB1-5-7(92)	5/5	NA	73.7	42.6	4100	N	22000	No	BSL
7439-97-6	Mercury	0.03	J	0.03	J	mg/kg	6SB4-5-7(92)	1/5	0.03	0.03	NA	61 (9)	N	26	No	BSL

TABLE 6-6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 6 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Detected Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value(1)	Screening Toxicity Value Region III(2) Soil Industrial	Soil(4) Basis	Florida (3) Soil Industrial	COPC Flag	Rationale for Contaminant Delection or Selection(5)
7440-02-0	Nickel	2	J	2	J	mg/kg	6SB1-5-7(92)	1/5	1.7 - 1.8	2	5	4100	N	28000	No	BSL
7440-09-7	Potassium	58.4	J	97.2	J	mg/kg	6SB4-10-12(92)	4/5	43.6	97.2	181	NA	--	NA	No	NUT
7782-49-2	Selenium	0.16	J	0.16	J	mg/kg	6SB3-10-12(92)	1/5	0.11 - 0.12	0.16	0.3	1000	N	10000	No	BSL
7440-23-5	Sodium	177	J	247	J	mg/kg	6SB3-10-12(92)	5/5	NA	247	NA	NA	--	NA	No	NUT
7440-28-0	Thallium	0.18	J	0.35	J	mg/kg	6SB1-5-7(92)	3/5	0.16	0.35	NA	14	N	NA	No	BSL
7440-62-2	**Vanadium**	28.9		48.9		mg/kg	6SB3-5-7(92)	5/5	NA	48.9	45	1400	N	7400	No	BSL
7440-66-6	Zinc	4.5	J	15.4		mg/kg	6SB3-5-7(92)	5/5	NA	15.4	15.6	61000	N	560000	No	BSL
Petroleum Hydrocarbons																
NA	TPH	7.1		10		mg/kg	6SB4-5-7(92)	2/2	NA	10	NA	NA	--	2500	No	BSL

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value is two times the mean detected concentration.

(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).

(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.

(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated samples:
6SB1-5-7(92) 6SB3-10-12(92) 6SB3-5-7(92) 6SB4-10-12(92) 6SB4-5-7(92)

(5) Rationale codes: Selection or Deletion Reason:
Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)

(6) Value is for naphthalene.

(7) Value is for hexavalent chromium.

(8) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.

(9) Value is for mercuric chloride.

Chemicals are bolded which exceed criteria.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not available

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6-21

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TABLE 6-7
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 30 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA

Scenario Timeframe:	Current/Future
Medium:	Surface Soil - Grass Area
Exposure Medium:	Surface Soil (0 to 2 feet)
Exposure Point:	Site 30

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value (1)	Screening Toxicity Value: Region III (2) Soil Residential	Soil(4) Basis	Florida (3) Soil Residential	COPC Flag	Rationale for Contaminant Deletion or Selection (5)
Volatiles																
78-93-3	2-Butanone	0.028		0.028		mg/kg	30B00101	1/3	0.011 - 0.058	0.028	NA	4700	N	3100	No	BSL
67-64-1	Acetone	0.004	J	0.004	J	mg/kg	W30SB01301	1/5	0.006 - 0.1	0.004	NA	780	N	780	No	BSL
Semivolatiles																
91-57-6	2-Methylnaphthalene	0.069	J	0.069	J	mg/kg	30SB03-0-2(93)	1/5	0.35 - 0.38	0.069	NA	160	N	83	No	BSL
117-81-7	Bis(2-Ethylhexyl)phthalate	0.046	J	0.057	J	mg/kg	W30SB01301	2/5	0.35 - 0.37	0.057	NA	46	C	76	No	BSL
Pesticides																
60-57-1	Dieldrin	0.0093	J	0.013	J	mg/kg	30SB03-0-2(93)	2/3	0.0038	0.013	NA	0.04	C	0.07	No	BSL
12789-03-6	Gamma-Chlordane	0.0004	J	0.0004	J	mg/kg	W30SB00901	1/3	0.0019	0.0004	NA	1.8 (6)	C	3.1 (6)	No	BSL
Inorganics																
7429-90-5	**Aluminum**	11700		41600		mg/kg	W30SB01301	3/3	NA	41600	15848	7800	N	72000	Yes	ASL
7440-38-2	**Arsenic**	2.5		4.8		mg/kg	W30SB01301	3/3	NA	4.8	3.2	0.43	C	0.8	Yes	ASL
7440-39-3	Barium	10.9	J	13.6	J	mg/kg	W30SB00901	3/3	NA	13.6	23.2	550	N	110	No	BSL
7440-70-2	Calcium	344		486		mg/kg	W30SB01301	3/3	NA	486	396	NA	--	NA	No	NUT
7440-47-3	**Chromium**	13		30.7		mg/kg	W30SB01301	3/3	NA	30.7	11	23 (7)	N	210 (7)	Yes	ASL
7440-48-4	Cobalt	0.56		1.8	J	mg/kg	30SB03-0-2(93)	2/3	0.47	1.8	3	470	N	4700	No	BSL
7440-50-8	Copper	2.2	J	8.4		mg/kg	W30SB01301	3/3	NA	8.4	9.4	310	N	110	No	BSL
57-12-5	Cyanide	0.44	J	0.44	J	mg/kg	30SB03-0-2(93)	1/1	NA	0.44	0.28	160	N	30	No	BSL
7439-89-6	**Iron**	7870		24100		mg/kg	W30SB01301	3/3	NA	24100	8832	2300	N	23000	Yes	ASL
7439-92-1	Lead	6.8		42.5		mg/kg	30B00101	5-May	NA	42.5	11.4	400 (8)	--	400	No	BSL
7439-95-4	Magnesium	117		237	J	mg/kg	30SB03-0-2(93)	2/3	147	237	268	NA	--	NA	No	NUT
7439-96-5	Manganese	23.2		67.6		mg/kg	W30SB00901	3/3	NA	67.6	392	180	N	1600	No	BSL
7439-97-6	Mercury	0.02	J	0.03		mg/kg	W30SB00901	2/3	0.03	0.03	0.12	2.3 (9)	N	3.4	No	BSL
7440-02-0	Nickel	2.1		3.2	J	mg/kg	W30SB01301	2/3	2.9	3.2	7.2	160	N	110	No	BSL
7440-09-7	Potassium	82.2		122	J	mg/kg	30SB03-0-2(93)	2/2	NA	122	177	NA	--	NA	No	NUT
7782-49-2	Selenium	1.7		1.7		mg/kg	30SB03-0-2(93)	1/3	0.47 - 0.53	1.7	0.46	39	N	390	No	BSL
7440-22-4	Silver	0.89	J	0.89	J	mg/kg	30SB03-0-2(93)	1/3	0.28 - 0.32	0.89	0.7	39	N	390	No	BSL
7440-62-2	**Vanadium**	20.3		63.7		mg/kg	W30SB01301	3/3	NA	63.7	21.8	55	N	15	Yes	ASL
7440-66-6	Zinc	2.5	J	8.8		mg/kg	W30SB00901	3/3	NA	8.8	15.4	2300	N	23000	No	BSL
Petroleum Hydrocarbons																
NA	**TPH**	46		2660		mg/kg	30SB03-0-2(93)	3/5	NA	2660	NA	NA	--	340 (10)	Yes	ASL

Notes:

(1) Troup Loamy Soil (Table 3-9), General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated Samples:

30B00101 30B00201 30SB03-0-2(93) W30SB00901 W30SB01301

(5) Rationale codes: Selection or Deletion Reason: Above Screening Level (ASL)
Below Screening Level (BSL)
Essential Nutrient (NUT)

(6) Value is for chlordane.
(7) Value is for hexavalent chromium.
(8) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(9) Value is for mercuric chloride.

Chemicals are bolded which exceed criteria.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - Not available

30SB6-10-12(93), 30SB7-10-12(93), W30SB00902, W30SB01101, W30SB01201, and W30SB01303] were collected from Site 30 (Figure 3-3). VOCs, SVOCs, pesticides, PCBs, and inorganic data from these samples were evaluated in this HHRA. Table 6-8 identifies arsenic and TPH as COPCs in the subsurface soil.

6.2.5 Site 32 Surface and Subsurface Soil

Surface Soil

A thick layer of concrete covers the surface soil at Site 32. Therefore, a complete exposure pathway does not currently exist.

Surface Soil: Hypothetical Future Conditions Assuming Concrete Removal

Seven surface soil samples [32SB1-1-2(93), 32SB2-0-2(93), 32SB3-0-2(93) and duplicate 32SB3-0-2(93)-D, 32SB4-0-2(93), 32SB5-1-2(93), 32SB6-0-2(93), and 32SB7-0-2(93)] were collected from 0 to 4 foot depth at Site 32. VOCs, SVOCs, pesticides, PCBs, inorganic, and TPH data from these samples were evaluated in this HHRA. Table D9-2 of Appendix D9 identifies the following as COPCs: aluminum, antimony, arsenic, iron, vanadium, and TPH.

Subsurface Soil

Twenty-two subsurface soil samples [32SB1-10-12(93), 32S1-5-7(93), 32SB2-12-14(93), 32SB2-5-7(93), 32SB3-10-12(93), 32SB3-5-7(93), 32SB5-10-12(93), 32SB5-5-7(93), 32SB6-10-12(93), 32SB6-5-7(93) and duplicate 32SB6-5-7(93)-D, 32SB7-5-7(93), 32SB8-13-15(93), 32SB8-5-7(93) W32SB01201, W32SB01801, W32SB01901, WR-SB01 (10-12), WR-SB01(5-7) and duplicate WR-SB01(5-7)-D, WR-SB02(10-12), WR-SB02(5-7), WR-SB03(10-12), and WR-SB03(5-7)] were collected from Site 32 (Figure 3-1). VOCs, SVOCs, pesticides, PCBs, and inorganic data from these samples were evaluated in this HHRA. Table 6-9 indicates no chemical was selected as a COPC in the subsurface soil.

6.2.6 Site 33 Surface and Subsurface Soil

Surface Soil

A thick layer of concrete covers the surface soil at Site 33. Therefore, a complete exposure pathway does not currently exist.

R4708989

TABLE 6-8
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 30 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA

Scenario Time Frame:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil (2 to 15 feet)
Exposure Point:	Site 30

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Sample Maximum	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [1]	Screening Toxicity Value Region III [2] Soil Industrial	Region III Soil [4] Basis	Florida [3] Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Volatiles																
540-59-0	1,2-Dichloroethene (total)	0.31		0.31		mg/kg	30B00302	1/25	0.005 - 7.6	0.31	NA	1800	N	130 [6]	No	BSL
78-93-3	2-Butanone	0.005	J	0.01	J	mg/kg	30B00302	3/21	0.011 - 7.6	0.01	NA	120000	N	21000	No	BSL
67-64-1	Acetone	0.004	J	0.69	J	mg/kg	30SB1-10-12(92)	11/25	0.006 - 7.6	0.69	NA	20000	N	5500	No	BSL
100-41-4	Ethylbenzene	0.008	J	0.009	J	mg/kg	30B00302	2/25	0.005 - 7.6	0.009	NA	20000	N	8400	No	BSL
75-09-2	Methylene Chloride	0.002	J	0.01	J	mg/kg	30B00302	4/25	0.006 - 7.6	0.01	NA	760	C	23	No	BSL
108-88-3	Toluene	0.02	J	0.02	J	mg/kg	30B00302	1/25	0.005 - 7.6	0.02	NA	41000	N	2600	No	BSL
79-01-6	Trichloroethene	0.001	J	0.16		mg/kg	30SB1-5-7(92)	4/25	0.005 - 7.6	0.16	NA	520	C	8.5	No	BSL
1330-20-7	Xylenes, Total	0.042	J	0.042	J	mg/kg	30B00302	1/25	0.005 - 7.6	0.042	NA	410000	N	40000	No	BSL
Semivolatiles																
91-57-6	2-Methylnaphthalene	0.042	J	0.27	J	mg/kg	30B00302	5/25	0.35 - 3.9	0.27	NA	4100	N	560	No	BSL
106-44-5	4-Methylphenol	0.044	J	0.044	J	mg/kg	30SB02-10-12(93)	1/25	0.35 - 3.9	0.044	NA	1000	N	3000	No	BSL
50-32-8	Benzo(a)pyrene	0.047	J	0.047	J	mg/kg	30SB02-10-12(93)	1/25	0.11 - 3.9	0.047	NA	0.78	C	0.5	No	BSL
205-99-2	Benzo(b)fluoranthene	0.062	J	0.062	J	mg/kg	30SB02-10-12(93)	1/25	0.35 - 3.9	0.062	NA	7.8	C	4.8	No	BSL
191-24-2	Benzo(g,h,i)perylene	0.065	J	0.092	J	mg/kg	30SB1-2-4(92)-D	2/25	0.35 - 3.9	0.092	NA	8200 [7]	N	41000	No	BSL
117-81-7	Bis(2-Ethylhexyl)phthalate	0.039	J	16	J	mg/kg	30B00303	5/25	0.37 - 2	16	NA	410	C	280	No	BSL
131-11-3	Dimethyl Phthalate	0.33	J	0.33	J	mg/kg	30SB1-10-12(92)	1/25	0.35 - 3.9	0.33	NA	100000	N	NA	No	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	0.071	J	0.071	J	mg/kg	30SB02-10-12(93)	1/25	0.35 - 3.9	0.071	NA	7.8	C	5.3	No	BSL
86-30-6	N-Nitrosodiphenylamine	0.71		0.71		mg/kg	30B00303	1/25	0.35 - 3.9	0.71	NA	1200	C	440	No	BSL
91-20-3	Naphthalene	0.046	J	20		mg/kg	30SB04-5-7(93)	4/25	0.35 - 1.9	20	NA	8200	N	270	No	BSL
85-01-8	Phenanthrene	0.68	J	0.68	J	mg/kg	30SB04-5-7(93)	1/25	0.35 - 2	0.68	NA	4100 [7]	N	30000	No	BSL
Pesticides/PCBs																
72-54-8	4,4'-DDD	0.0063	J	0.0063	J	mg/kg	30SB1-10-12(92)	1/13	0.0035 - 0.0042	0.0063	NA	24	C	18	No	BSL
Inorganics																
7429-90-5	Aluminum	436		41800		mg/kg	W30SB01201	13/13	NA	41800	27834	200000	N	NA	No	BSL
7440-38-2	**Arsenic**	0.67	J	8.6		mg/kg	30SB6-10-12(93)	13/13	NA	8.6	6.2	3.8	C	3.7	Yes	ASL
7440-39-3	Barium	0.8	J	17.4	J	mg/kg	30SB1-2-4(92)-D	12/13	0.76	17.4	15.8	14000	N	87000	No	BSL
7440-43-9	Cadmium	0.4	J	0.65	J	mg/kg	30SB1-2-4(92)-D	2/13	0.23 - 0.97	0.65	0.92	100	N	1300	No	BSL
7440-70-2	Calcium	65.4	J	787	J	mg/kg	30SB1-5-7(92)	9/13	7.6 - 92.8	787	444	NA	--	NA	No	NUT
7440-47-3	Chromium	0.93	J	37.8		mg/kg	W30SB01201	13/13	NA	37.8	22.8	610 [8]	N	420 [8]	No	BSL
7440-48-4	Cobalt	1	J	2.3	J	mg/kg	30SB6-10-12(93)	5/13	0.38 - 1.4	2.3	1.48	12000	N	110000	No	BSL
7440-50-8	Copper	0.76		9.1		mg/kg	W30SB01201	10/13	0.37 - 0.39	9.1	8.8	8200	N	73000	No	BSL
57-12-5	Cyanide	0.37	J	0.53	J	mg/kg	30SB02-10-12(93) 30SB6-10-12(93)	6/9	0.17 - 0.19	0.53	ND	4100	N	39000	No	BSL
7439-89-6	Iron	1330		24500		mg/kg	W30SB01201	13/13	NA	24500	18110	61000	N	480000	No	BSL
7439-92-1	Lead	0.84		22		mg/kg	30SB04-5-7(93)	25/25	NA	22	8.4	400 [9]	--	920	No	BSL
7439-95-4	Magnesium	14	J	191	J	mg/kg	30SB1-2-4(92)-D	11/13	6.5 - 16.1	191	272	NA	--	NA	No	NUT
7439-96-5	Manganese	0.47		177		mg/kg	30SB1-5-7(92)	13/13	NA	177	42.6	4100	N	22000	No	BSL
7439-97-6	Mercury	0.02	J	0.05	J	mg/kg	30SB1-2-4(92)-D	5/13	0.02 - 0.04	0.05	ND	61 [10]	N	26	No	BSL
7440-02-0	Nickel	0.53		3.3	J	mg/kg	W30SB01201	4/13	0.38 - 3	3.3	5	4100	N	28000	No	BSL
7440-09-7	Potassium	7.3		215	J	mg/kg	30SB1-2-4(92)-D	5/11	113 - 155	215	181	NA	--	NA	No	NUT
7782-49-2	Selenium	0.15	J	3.1		mg/kg	30SB7-10-12(93)	5/13	0.11 - 0.85	3.1	0.3	1000	N	10000	No	BSL
7440-22-4	Silver	0.52		0.94	J	mg/kg	30SB04-5-7(93)	4/13	0.23 - 0.56	0.94	1.12	1000	N	9100	No	BSL
7440-23-5	Sodium	51.4		214	J	mg/kg	30SB1-5-7(92)	4/13	12.2 - 46.4	214	ND	NA	--	NA	No	NUT

TABLE 6-8
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 30 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Sample Maximum	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value (1)	Screening Toxicity Value Region III (2) Soil Industrial	Screening Toxicity Value Region III (2) Soil(4) Basis	Screening Toxicity Value Florida (3) Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection (5)
7440-62-2	Vanadium	7.1		63.5		mg/kg	W30SB01201	13/13	NA	63.5	45	1400	N	7400	No	BSL
7440-66-6	Zinc	0.64	J	7.7		mg/kg	30SB1-2-4(92)	10/13	0.35 - 0.76	7.7	15.6	61000	N	560000	No	BSL
Petroleum Hydrocarbons																
NA	**TPH**	4.3		21200		mg/kg	30SB4-5-7(92)	16/25	NA	21200	NA	NA	--	2500	Yes	ASL

Notes.

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated Samples:

30B00102	30B00302	30B00502-D	30SB02-10-12(93)	30SB1-2-4(92)-D	W30SB01101
30B00103	30B00303	30B00503	30SB03-10-12(93)	30SB1-5-7(92)	W30SB01201
30B00202	30B00402	30B00602	30SB04-5-7(93)	30SB4-10-12(93)	W30SB01303
30B00202-AVG	30B00403	30B00602-AVG	30SB1-10-12(92)	30SB6-10-12(93)	
30B00202-D	30B00502	30B00602-D	30SB1-2-4(92)	30SB7-10-12(93)	
30B00203	30B00502-AVG	30B00603	30SB1-2-4(92)-AVG	W30SB00902	

(5) Rationale codes: Selection or Deletion Reason: Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)

(6) Value is for cis-1,2-dichloroethene.
(7) Value is for naphthalene.
(8) Value is for hexavalent chromium.
(9) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(10) Value is for mercuric chloride.

Chemicals are bolded which exceed criteria.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - Not available

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TABLE 6-9
OCCURRENCE, DISTRIBUTION, AND SELECTION, OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 32 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil (2 to 15 feet)
Exposure Point:	Site 32

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Background Value [1]	Screening Toxicity Value Region III [2] Soil Industrial	Soil[4] Basis	Florida [3] Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Volatiles																
540-59-0	1,2-Dichloroethene (total)	0.3	J	0.43	J	mg/kg	WR-SB01(5-7)	2/22	0.005 - 2.8	0.43	NA	1800	N	130 [6]	No	BSL
78-93-3	2-Butanone	0.003	J	0.008	J	mg/kg	32SB3-10-12(93)	4/19	0.011 - 2.8	0.008	NA	120000	N	21000	No	BSL
67-64-1	Acetone	0.002	J	2.1	J	mg/kg	WR-SB03(10-12)	13/22	0.006 - 2.8	2.1	NA	20000	N	5500	No	BSL
100-41-4	Ethylbenzene	0.44	J	5.1		mg/kg	WR-SB01(5-7)-D	4/22	0.005 - 2.8	5.1	NA	20000	N	8400	No	BSL
75-09-2	Methylene Chloride	0.16	J	0.61	J	mg/kg	WR-SB01(5-7)-D	5/22	0.006 - 2.8	0.61	NA	760	C	23	No	BSL
127-18-4	Tetrachloroethene	1.4	J	1.7	J	mg/kg	WR-SB01(5-7)-D	2/22	0.005 - 2.8	1.7	NA	110	C	17	No	BSL
108-88-3	Toluene	0.26	J	13		mg/kg	WR-SB01(5-7)	3/22	0.005 - 2.8	13	NA	41000	N	2600	No	BSL
1330-20-7	Xylenes, Total	0.21	J	32		mg/kg	WR-SB01(5-7) WR-SB01(5-7)-D	4/22	0.005 - 2.8	32	NA	410000	N	40000	No	BSL
Semivolatiles																
91-57-6	2-Methylnaphthalene	0.052	J	43	J	mg/kg	WR-SB01(5-7)	8/22	0.36 - 0.4	43	NA	4100	N	560	No	BSL
117-81-7	Bis(2-Ethylhexyl)phthalate	0.067	J	0.59	J	mg/kg	WR-SB02(5-7)	3/22	0.36 - 9.6	0.59	NA	410	C	280	No	BSL
86-74-8	Carbazole	0.039	J	0.039	J	mg/kg	32SB2-5-7(93)	1/22	0.36 - 9.6	0.039	NA	290	C	190	No	BSL
117-84-0	Di-n-octyl phthalate	0.04	J	0.04	J	mg/kg	32SB2-5-7(93)	1/22	0.36 - 9.6	0.04	NA	4100	N	27000	No	BSL
132-64-9	Dibenzofuran	1.4	J	1.5	J	mg/kg	WR-SB03(5-7)	2/22	0.36 - 9.6	1.5	NA	820	N	5000	No	BSL
206-44-0	Fluoranthene	0.039	J	0.039	J	mg/kg	32SB3-5-7(93)	1/22	0.36 - 9.6	0.039	NA	8200	N	48000	No	BSL
86-73-7	Fluorene	0.97	J	0.97	J	mg/kg	WR-SB01(10-12)	1/22	0.36 - 9.6	0.97	NA	8200	N	28000	No	BSL
91-20-3	Naphthalene	1.6	J	26	J	mg/kg	WR-SB01(5-7)	7/22	0.36 - 0.4	26	NA	8200	N	270	No	BSL
85-01-8	Phenanthrene	0.059	J	0.059	J	mg/kg	32SB6-5-7(93)	1/22	0.36 - 9.6	0.059	NA	4100 [7]	N	30000	No	BSL
Inorganics																
7429-90-5	Aluminum	1630		33200		mg/kg	32SB5-5-7(93)	16/16	NA	33200	27834	200000	N	NA	No	BSL
7440-38-2	Arsenic	0.81	J	3.3		mg/kg	32SB6-10-12(93)	12/16	0.5 - 2.2	3.3	6.2	3.8	C	3.7	No	BSL
7440-39-3	Barium	3.8	J	18.7	J	mg/kg	32SB7-5-7(93)	16/16	NA	18.7	15.8	14000	N	87000	No	BSL
7440-41-7	Beryllium	0.08	J	0.21	J	mg/kg	32SB5-5-7(93)	4/16	0.06 - 0.67	0.21	0.26	410	N	800	No	BSL
7440-43-9	Cadmium	0.44	J	0.44	J	mg/kg	32SB6-10-12(93)	1/16	0.26 - 0.93	0.44	0.92	100	N	1300	No	BSL
7440-70-2	Calcium	18.8	J	502	J	mg/kg	32SB6-5-7(93)-D	14/16	106 - 222	502	444	NA	--	NA	No	NUT
7440-47-3	Chromium	1.2	J	26.3		mg/kg	32SB5-5-7(93)	22/22	NA	26.3	22.8	610 [8]	N	420 [8]	No	BSL
7440-48-4	Cobalt	0.53	J	2.5	J	mg/kg	32SB7-5-7(93)	7/16	0.51 - 1.4	2.5	1.48	12000	N	110000	No	BSL
7440-50-8	Copper	0.64	J	8.4		mg/kg	32SB6-10-12(93)	16/16	NA	8.4	8.8	8200	N	73000	No	BSL
57-12-5	Cyanide	0.41	J	0.56	J	mg/kg	32SB5-10-12(93) 32SB5-5-7(93)	7/13	0.16 - 0.18	0.56	ND	4100	N	39000	No	BSL
7439-89-6	Iron	448		16000		mg/kg	32SB5-5-7(93)	16/16	NA	16000	18110	61000	N	480000	No	BSL
7439-92-1	Lead	2		3.8		mg/kg	32SB3-10-12(93) 32SB3-5-7(93) 32SB8-5-7(93)	16/16	NA	3.8	8.4	400 [9]	--	920	No	BSL
7439-95-4	Magnesium	41.5	J	284	J	mg/kg	32SB7-5-7(93)	16/16	NA	284	272	NA	--	NA	No	NUT
7439-96-5	Manganese	3.5		53.5		mg/kg	32SB5-5-7(93)	16/16	NA	53.5	42.6	4100	N	22000	No	BSL
7439-97-6	Mercury	0.02	J	0.04		mg/kg	32SB2-12-14(93) 32SB2-5-7(93) 32SB6-10-12(93)	9/16	0.02 - 0.04	0.04	ND	61 [10]	N	26	No	BSL
7440-02-0	Nickel	1.7		4.7	J	mg/kg	32SB7-5-7(93)	10/16	1.8 - 2.9	4.7	5	4100	N	28000	No	BSL
7440-09-7	Potassium	84.8		672	J	mg/kg	32SB3-10-12(93)	14/16	111 - 117	672	181	NA	--	NA	No	NUT
7782-49-2	Selenium	0.11	J	2.2		mg/kg	32SB8-5-7(93)	7/16	0.11 - 1.1	2.2	0.3	1000	N	10000	No	BSL
7440-22-4	Silver	0.7	J	0.96	J	mg/kg	32SB1-10-12(93)	3/16	0.31 - 0.67	0.96	1.12	1000	N	9100	No	BSL
7440-23-5	Sodium	18	J	235	J	mg/kg	32SB6-10-12(93)	11/16	12.1 - 111	235	ND	NA	--	NA	No	NUT

TABLE 6-9
OCCURRENCE, DISTRIBUTION, AND SELECTION, OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 32 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Background Value (1)	Screening Toxicity Value Region III (2) Soil Industrial	Screening Toxicity Value Region III (2) Soil(4) Basis	Screening Toxicity Value Florida (3) Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection (5)
7440-62-2	Vanadium	5.1	J	43.1		mg/kg	32SB5-5-7(93)	16/16	NA	43.1	45	1400	N	7400	No	BSL
7440-66-6	Zinc	0.52	J	11.8		mg/kg	32SB6-5-7(93)-D	14/16	0.36 - 7	11.8	15.6	61000	N	560000	No	BSL
Petroleum Hydrocarbons																
NA	TPH	2		2310		mg/kg		9/22	NA	2310	NA	NA	--	2500	No	BSL

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated Samples:

32SB1-10-12(93)	32SB3-5-7(93)	W32SB01901	WR-SB02(10-12)	32SB6-10-12(93)	32SB8-13-15(93)
32SB1-5-7(93)	32SB5-10-12(93)	WR-SB01(10-12)	WR-SB02(5-7)	32SB6-5-7(93)	
32SB2-12-14(93)	32SB8-5-7(93)	WR-SB01(5-7)	WR-SB03(10-12)	32SB6-5-7(93)-AVG	
32SB2-5-7(93)	W32SB01201	WR-SB01(5-7)-AVG	WR-SB03(5-7)	32SB6-5-7(93)-D	
32SB3-10-12(93)	W32SB01801	WR-SB01(5-7)-D	32SB5-5-7(93)	32SB7-5-7(93)	

(5) Rationale codes: Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)
(6) Value is for cis-1,2-dichloroethene.
(7) Value is for naphthalene.
(8) Value is for hexavalent chromium.
(9) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(10) Value is for mercuric chloride.

Chemicals are bolded which exceed criteria.

The average of a sample and its duplicate is used for all calculations.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not available

Surface Soil: Hypothetical Future Conditions Assuming Concrete Removal

Eight surface soil samples [33B00101, 33B00201, 33B00301, 33SB1-3-5(92), 33SB2-2-4(92), 33SB4-3-5(92), 33SB5-0-2(92) and duplicate 33SB5-0-2(92)-D, and W33SB00601] were collected from 0 to 4 foot depth at Site 33. VOCs, SVOCs, pesticides, PCBs, inorganic, and TPH data from these samples were evaluated in this HHRA. Table D-3 of Appendix D9 identifies the following as COPCs: aluminum, arsenic, iron, vanadium, and TPH.

Subsurface Soil

Nineteen subsurface soil samples [33B00102 and duplicate 33B00102-D, 33B00103, 33B00202, 33B00203, 33B00302 and duplicate 33B00302-D, 33B00303, 33SB1-10-12(92), 33SB1-3-5(92), 33SB2-10-12(92), 33SB2-2-4(92), 33SB2-5-7(92), 33SB3-10-12(92), 33SB3-4-6(92), 33SB4-3-5(92), 33SB4-5-7(92), 33SB5-10-12(92), 33SB5-5-7(92), W33SB00801, and W33SB01101] were collected from Site 33 (Figure 3-2). VOCs, SVOCs, pesticides, PCBs, and inorganic data from these samples were evaluated in this HHRA. Table 6-10 identifies arsenic and TPH as COPCs in the subsurface soil.

6.3 EXPOSURE ASSESSMENT

The exposure assessment methodology is described in Subsection 2.5.3 of the GIR (ABB-ES, 1998). This process involves several steps:

- Characterization of the exposure setting in terms of physical characteristics and the populations potentially exposed to site-related chemicals.
- Identification of potential exposure pathways and receptors.
- Quantification of exposure for each population in terms of the amount of chemical either ingested, inhaled, or absorbed through the skin from all complete exposure pathways.

Summaries of potential exposure pathways to chemicals detected at Sites 3, 4, 6, 30, 32, and 33 are presented in a Conceptual Site Model on Figure 6-1. The potential pathways, including medium and route of exposure, the potentially exposed population, and the rationale for pathway selection or exclusion, are provided in Table 6-11 and are described in more detail in Subsections 6.3.1 and 6.3.2. Receptor-specific exposure parameters for each exposure scenario are presented in Appendix D1.

R4708989

TABLE 6-10
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 33 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Scenario Time Frame:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil (2 to 15 feet)
Exposure Point:	Site 33

CAS Number	Chemical	Minimum Detected Concentration	Minimum Qualifier	Maximum Detected Concentration	Maximum Qualifier	Units	Location of Sample Maximum	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [1]	Screening Toxicity Value Region III [2] Soil Industrial	Screening Toxicity Value Region III [2] Soil[4] Basis	Screening Toxicity Value Florida [3] Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Volatiles																
540-59-0	1,2-Dichloroethene (total)	0.003	J	0.004	J	mg/kg	33B00302-D	2/19	0.006 - 1.4	0.004	NA	1800	N	130 [6]	No	BSL
67-64-1	Acetone	0.003	J	0.017	J	mg/kg	33SB1-10-12(92)	5/19	0.011 - 1.4	0.017	NA	20000	N	5500	No	BSL
100-41-4	Ethylbenzene	1.5		1.5		mg/kg	33SB2-5-7(92)	1/19	0.006 - 1.4	1.5	NA	20000	N	8400	No	BSL
75-09-2	Methylene Chloride	0.001	J	0.002	J	mg/kg	33B00302-D 33B00303	4/19	0.011 - 1.4	0.002	NA	760	C	23	No	BSL
79-01-6	Trichloroethene	0.005	J	0.013		mg/kg	33B00302-D	2/19	0.006 - 1.4	0.013	NA	520	C	8.5	No	BSL
1330-20-7	Xylenes, Total	0.38	J	4.8		mg/kg	33SB2-5-7(92)	2/19	0.006 - 0.012	4.8	NA	410000	N	40000	No	BSL
Semivolatiles																
91-57-6	2-Methylnaphthalene	0.16	J	2.1		mg/kg	33SB2-5-7(92)	2/19	0.36 - 0.38	2.1	NA	4100	N	560	No	BSL
117-81-7	Bis(2-Ethylhexyl)phthalate	0.061	J	0.41	J	mg/kg	33SB4-3-5(92)	2/19	0.36 - 0.39	0.41	NA	410	C	280	No	BSL
86-73-7	Fluorene	0.15	J	0.15	J	mg/kg	33SB2-10-12(92)	1/19	0.36 - 0.39	0.15	NA	8200	N	28000	No	BSL
91-20-3	Naphthalene	0.24	J	0.61		mg/kg	33SB2-5-7(92)	3/19	0.36 - 0.38	0.61	NA	8200	N	270	No	BSL
85-01-8	Phenanthrene	0.069	J	0.24	J	mg/kg	33SB2-5-7(92)	2/19	0.36 - 0.39	0.24	NA	4100 [7]	N	30000	No	BSL
129-00-0	Pyrene	0.04	J	0.04	J	mg/kg	33SB2-5-7(92)	1/19	0.36 - 0.39	0.04	NA	6100	N	37000	No	BSL
Pesticides/PCBs																
5103-71-9	Alpha-Chlordane	0.0033	J	0.05	J	mg/kg	33SB2-2-4(92)	2/13	0.0018 - 0.002	0.05	NA	16 [8]	C	12 [8]	No	BSL
60-57-1	Dieldrin	0.013	J	0.013	J	mg/kg	33SB2-2-4(92)	1/13	0.0036 - 0.0038	0.013	NA	0.36	C	0.3	No	BSL
12789-03-6	Gamma-Chlordane	0.0047	J	0.077	J	mg/kg	33SB2-2-4(92)	2/13	0.0018 - 0.002	0.077	NA	16 [8]	C	12 [8]	No	BSL
76-44-8	Heptachlor	0.0035	J	0.0035	J	mg/kg	33SB2-2-4(92)	1/13	0.0018 - 0.002	0.0035	NA	1.3	C	0.9	No	BSL
Inorganics																
7429-90-5	Aluminum	5610		47800		mg/kg	33SB5-5-7(92)	13/13	NA	47800	27834	200000	N	NA	No	BSL
7440-38-2	**Arsenic**	0.7	J	11.5		mg/kg	33SB2-2-4(92)	13/13	NA	11.5	6.2	3.8	C	3.7	Yes	ASL
7440-39-3	Barium	3.3	J	14.9	J	mg/kg	33SB1-3-5(92)	13/13	NA	14.9	15.8	14000	N	87000	No	BSL
7440-41-7	Beryllium	0.13	J	0.13	J	mg/kg	33SB3-10-12(92)	1/13	0.11 - 0.67	0.13	0.26	410	N	800	No	BSL
7440-43-9	Cadmium	0.39	J	1	J	mg/kg	33SB5-5-7(92)	11/13	0.67	1	0.92	100	N	1300	No	BSL
7440-70-2	Calcium	209	J	691	J	mg/kg	33SB4-3-5(92)	11/13	223 - 224	691	444	NA	--	NA	No	NUT
7440-47-3	Chromium	6.9		34.7		mg/kg	33SB5-10-12(92)	13/13	NA	34.7	22.8	610 [9]	N	420 [9]	No	BSL
7440-48-4	Cobalt	1.3	J	1.8	J	mg/kg	33SB4-3-5(92) 33SB5-5-7(92)	6/13	1.1 - 1.3	1.8	1.48	12000	N	110000	No	BSL
7440-50-8	Copper	2.9	J	11.1		mg/kg	33SB5-5-7(92)	13/13	NA	11.1	8.80	8200	N	73000	No	BSL
7439-89-6	Iron	5880		22300		mg/kg	33SB5-5-7(92)	13/13	NA	22300	18110	61000	N	480000	No	BSL
7439-92-1	Lead	2.7		24.3		mg/kg	33SB2-5-7(92)	19/19	NA	24.3	8.4	400 [10]	--	920	No	BSL
7439-95-4	Magnesium	40.6	J	170	J	mg/kg	33SB5-5-7(92)	13/13	NA	170	272	NA	--	NA	No	NUT
7439-96-5	Manganese	24.3		169		mg/kg	33SB4-3-5(92)	13/13	NA	169	42.6	4100	N	22000	No	BSL

TABLE 6-10
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR SITE 33 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

CAS Number	Chemical	Minimum Detected Concentration	Minimum Qualifier	Maximum Detected Concentration	Maximum Qualifier	Units	Location of Sample Maximum	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value (1)	Screening Toxicity Value: Region III (2) Soil Industrial	Screening Toxicity Value: Region III (2) Soil(4) Basis	Screening Toxicity Value: Florida (3) Soil Industrial	COPC Flag	Rationale for Contaminant Deletion or Selection (5)
7439-97-6	Mercury	0.03	J	0.05	J	mg/kg	33SB2-2-4(92) 33SB5-5-7(92)	7/13	0.03 - 0.04	0.05		61 (11)	N	26	No	BSL
7440-02-0	Nickel	2.5		3.8	J	mg/kg	33SB4-5-7(92)	6/13	1.7 - 1.8	3.8	5	4100	N	28000	No	BSL
7440-09-7	Potassium	60	J	205	J	mg/kg	33SB5-5-7(92)	11/13	90.7 - 104	205	181	NA	--	NA	No	NUT
7782-49-2	Selenium	0.43	J	0.64	J	mg/kg	33SB4-5-7(92)	4/13	0.11 - 1.1	0.64	0.3	1000	N	10000	No	BSL
7440-23-5	Sodium	156	J	249	J	mg/kg	33SB2-10-12(92)	11/13	112	249		NA	--	NA	No	NUT
7440-62-2	Vanadium	14.4		61.5		mg/kg	33SB5-5-7(92)	13/13	NA	61.5	45	1400	N	7400	No	BSL
7440-66-6	Zinc	4.3	J	19.3		mg/kg	33SB2-2-4(92)	13/13	NA	19.3	15.6	61000	N	560000	No	BSL
Petroleum Hydrocarbons																
NA	**TPH**	4.8		7790		mg/kg	33SB2-5-7(92)	8/19	NA	7790	NA	NA	--	2500	Yes	ASL

Notes:

(1) Table 3-18, General Information Report (GIR), Remedial Investigation and Feasibility Study, ABB-ES, 1998. Background screening value for inorganics is two times the mean detected concentration.
(2) Region III Risk-Based Concentration Table, October 1, 1998. (Note: 1/10th RBC value used for noncarcinogens).
(3) Table 1, Soil Cleanup Target Levels, Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999.
(4) Soil basis codes: N - noncarcinogen C - carcinogen

Associated Samples:

33B00102	33B00203	33SB4-5-7(92)	33B00302-D	33SB2-2-4(92)
33B00102-AVG	33B00302	33SB5-10-12(92)	33B00303	33SB2-5-7(92)
33B00102-D	33B00302-AVG	33SB5-5-7(92)	33SB1-10-12(92)	33SB3-10-12(92)
33B00103	33SB3-4-6(92)	W33SB00801	33SB1-3-5(92)	
33B00202	33SB4-3-5(92)	W33SB01101	33SB2-10-12(92)	

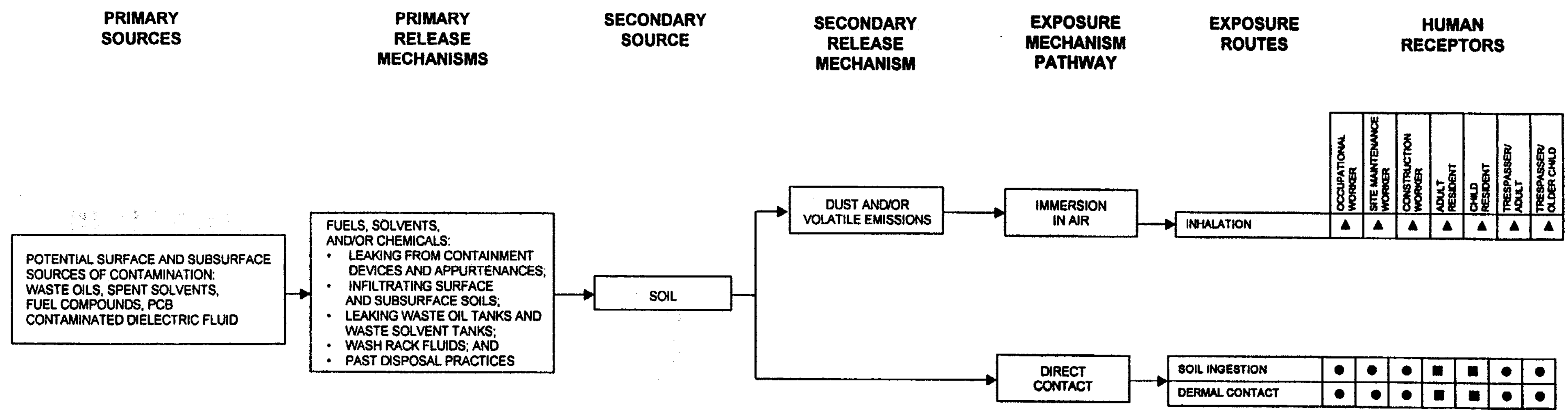
(5) Rationale codes: Selection or Deletion Reason: Above Screening Level (ASL)
Essential Nutrient (NUT)
Below Screening Level (BSL)

(6) Value is for cis-1,2-dichloroethene.
(7) Value is for naphthalene.
(8) Value is for chlordane.
(9) Value is for hexavalent chromium.
(10) Screening level for lead, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive #9355.4-12.
(11) Value is for mercuric chloride.

Chemicals which exceed criteria are bolded.

The average of a sample and its duplicate is used for all criteria.

COPC - Chemical of Potential Concern
J - estimated value
mg/kg - milligrams per kilogram
NA - not available



Exposure route	Occupational Worker	Site Maintenance Worker	Construction Worker	Adult Resident	Child Resident	Trespasser/ Adult	Trespasser/ Older Child
INHALATION	▲	▲	▲	▲	▲	▲	▲
SOIL INGESTION	●	●	●	■	■	●	●
DERMAL CONTACT	●	●	●	■	■	●	●

LEGEND

● CURRENT OR FUTURE LAND USE

■ FUTURE LAND USE ONLY

▲ IT IS ANTICIPATED THAT THE CONTRIBUTION TO EXPOSURE FROM THIS EXPOSURE PATHWAY IS NEGLIGIBLE

FIGURE 6-1
CONCEPTUAL SITE MODEL SURFACE/SUBSURFACE CONTAMINANT SOURCES FOR SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

TABLE 6-11
SELECTION OF EXPOSURE PATHWAYS
FOR SITES 3, 4, 6, 30, AND 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Soils	Soils	All Exposed Surface Soils	Trespasser	Adult	Ingestion	On-Site	Quant	Sites 3, 4, 6, and 30 are accessible to adult trespassers, who may be exposed to contaminated soil through inadvertent contact.
						Dermal	On-Site	Quant	Sites 3, 4, 6, and 30 are accessible to adult trespassers, who may be exposed to contaminated soil through dermal contact.
						Inhalation	On-Site	Qual	Inhalation exposures represent a relatively minor exposure relative to dermal and ingestion pathways. Maximum concentrations of volatile COPCs were all well below the USEPA generic soil screening levels for the migration of contaminants from soil to air or had no toxicity criteria available for inhalation.
					Older Child	Ingestion	On-Site	Quant	Sites 3, 4, 6, and 30 are accessible to older child trespassers, who may be exposed to contaminated soil through inadvertent contact.
						Dermal	On-Site	Quant	Sites 3, 4, 6, and 30 are accessible to older child trespassers, who may be exposed to contaminated soil through dermal contact.
						Inhalation	On-Site	Qual	Inhalation exposures represent a relatively minor exposure relative to dermal and ingestion pathways. Maximum concentrations of volatile COPCs were all well below the USEPA generic soil screening levels for the migration of contaminants from soil to air or had no toxicity criteria available for inhalation.
			Exposed Surface Soils in Commercial Area (Sites 3, 4, 6, & 30)	Site Occupational Worker	Adult	Ingestion	On-Site	Quant	Workers at Sites 3, 4, 6, and 30 may be exposed to contaminated soil through inadvertent contact.
						Dermal	On-Site	Quant	Workers at Sites 3, 4, 6, and 30 may be exposed to contaminated soil through dermal contact.
				Site Maintenance Worker		Inhalation	On-Site	Qual	Inhalation exposures represent a relatively minor exposure relative to dermal and ingestion pathways. Maximum concentrations of volatile COPCs were all well below the USEPA generic soil screening levels for the migration of contaminants from soil to air or had no toxicity criteria available for inhalation.
			Surface Soils	Construction Worker	Adult	Ingestion	On-Site	Quant	Workers at Sites 3, 4, 6, and 30 may be exposed to contaminated soil through inadvertent contact.
						Dermal	On-Site	Quant	Workers at Sites 3, 4, 6, and 30 may be exposed to contaminated soil through dermal contact.
						Inhalation	On-Site	Qual	Inhalation exposures represent a relatively minor exposure relative to dermal and ingestion pathways. Maximum concentrations of volatile COPCs were all well below the USEPA generic soil screening levels for the migration of contaminants from soil to air or had no toxicity criteria available for inhalation.
			Subsurface Soils	Construction Worker	Adult	Ingestion	On-Site	Quant	Workers may be exposed to contaminated soil while excavating or performing construction activities at all sites.
						Dermal	On-Site	Quant	Workers may be exposed to contaminated soil through dermal contact while excavating or performing construction activities at all sites.
						Inhalation	On-Site	Qual	Inhalation exposures represent a relatively minor exposure relative to dermal and ingestion pathways. Maximum concentrations of volatile COPCs were all well below the USEPA generic soil screening levels for the migration of contaminants from soil to air or had no toxicity criteria available for inhalation.

TABLE 6-11
SELECTION OF EXPOSURE PATHWAYS
FOR SITES 3, 4, 6, 30, AND 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Soils	Soils	All Exposed Surface Soils	Resident	Adult/Child	Ingestion	On-Site	Quant	Potential residents at Sites 3, 4, 6, and 30 (current grass-covered area) may be exposed to contaminated soil through inadvertent contact.
						Dermal	On-Site	Quant	Potential residents at Sites 3, 4, 6, and 30 (current grass-covered area) may be exposed to contaminated soil through dermal contact.
						Inhalation	On-Site	Qual	Inhalation exposures represent a relatively minor exposure relative to dermal and ingestion pathways. Maximum concentrations of volatile COPCs were all well below the USEPA generic soil screening levels for the migration of contaminants from soil to air or had no toxicity criteria available for inhalation.
			All surface soil assuming concrete removal at Sites 30, 32, and 33.	Resident	Adult/Child	Ingestion	On-Site	Quant	It is unlikely the concrete will be removed from Sites 30, 32,and 33. However, for completeness purposes, this pathway was quantified in Appendix D9 for the hypothetical future case in which the concrete is removed.
						Dermal	On-Site	Quant	It is unlikely the concrete will be removed from Sites 30, 32,and 33. However, for completeness purposes, this pathway was quantified in Appendix D9 for the hypothetical future case in which the concrete is removed.
						Inhalation	On-Site	Qual	Inhalation exposures represent a relatively minor exposure relative to dermal and ingestion pathways. Maximum concentrations of volatile COPCs were all well below the USEPA generic soil screening levels for the migration of contaminants from soil to air or had no toxicity criteria available for inhalation.

An arsenic absorption factor of 0.032 was used for the dermal contact pathway for each receptor following Region IV guidance (USEPA, 1995). Absorption factor defaults of 0.001 and 0.01 were used for other inorganic and organic compounds, respectively. These values determine the uptake associated with dermal exposure to contaminated soils.

Data used to calculate representative concentrations of contaminants with sample sets larger than 10 samples are presented in Appendix D2.

6.3.1 Surface Soil

The receptors for surface soil pathways to be evaluated were selected based on the current and realistic future use of the sites and surrounding areas. The receptors evaluated in the HHRA of Sites 3, 4, 6, and 30 (grass-covered area) are (1) future residents, both young child (ages 1-6) and adult; (2) trespassers, both older child (ages 7-16) and adult; (3) current/future site maintenance worker; (4) current/future occupational worker; and (5) current/future construction worker. These receptors are described as follows:

- **Future residents** are individuals who may reside at Sites 3, 4, 6, or 30 sometime in the future. These residents may directly contact contaminants in surface soils. The future residential scenario was evaluated to be conservative, although it was not considered a likely scenario.

- **Trespassers** are individuals who may occasionally enter a contaminated site without proper authorization and come in contact with contaminated surface soil. Adult and older child trespassers were evaluated.

- **Site maintenance workers** are individuals who may come in contact with surface soils while mowing.

- **Site occupational workers** are individuals who may come in contact with contaminated surface soils during their 8-hour work shifts. This includes office workers.

- **Construction workers** are individuals who may come in contact with surface soils while performing construction activities near contaminated sites or are utility workers who may come in contact with surface soils while placing or repairing utility lines.

Except for the future residential scenario, these scenarios assume Sites 3, 4, 6, 30, 32, and 33 continue as an industrial area and the concrete and asphalt pavement covering most of the ground surface at Sites 30, 32, and 33 remain in place. Therefore, there is no surface soil exposure at Sites 32 and 33 and limited exposure at Site 30 where most of the site is covered with concrete. However, for completeness purposes, a hypothetical future case that assumed the concrete is removed from Sites 30, 32, and 33 was evaluated and is included in Appendix D9.

Receptor exposure to surface soil contaminants through ingestion and dermal contact are evaluated in this HHRA. The maximum site concentrations of volatile COPCs were all less than the USEPA generic soil screening levels for the migration of contaminants from soil to air or toxicity criteria for the inhalation route of exposure were not available for the chemical. Therefore, the inhalation route was not evaluated quantitatively for any receptor.

6.3.2 Subsurface Soil

There are no current exposures to subsurface soil. No excavation or construction activities are ongoing at Sites 3, 4, 6, 30, 32, and 33. However, construction activities at Sites 3, 4, 6, 30, 32, and 33 in the future may expose construction workers to contaminants in subsurface soil. The exposure of construction workers to contaminants in subsurface soil (incidental ingestion and dermal contact) was evaluated for COPCs at Sites 3, 4, 30, and 33. No COPCs were identified for subsurface soil at Sites 6 or 32; therefore, the construction worker scenario was not evaluated for these sites.

6.3.3 Exposure Point Concentrations (EPCs)

EPCs for all COPCs in surface soil and subsurface soil were calculated according to Paragraph 2.5.3.3 of the GIR (ABB-ES, 1998). The EPCs were combined with assumptions regarding exposure conditions and exposure scenarios for each receptor to estimate the total amount of contaminants a hypothetical receptor may ingest or dermally absorb from each exposure pathway. The ultimate goal of this step, as defined in USEPA guidance, is to identify the combination of these exposure variables or parameters resulting in the most intense level of exposure that may "reasonably" be expected to occur under current and future site conditions (USEPA, 1989b).

The EPCs for COPCs in surface soil and subsurface soil are presented in Tables 6-12 through 6-22. The EPCs were combined with receptor-specific exposure parameters to quantify exposures to the COPCs, as shown in the intake and risk calculations in Appendix D3 of this report. Appendix D9 presents COPCs, EPCs, intake and risk calculations for Sites 30, 32, and 33 assuming the concrete is removed from these areas in the future.

TABLE 6-12
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 3 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Site 3

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
dieldrin	mg/kg	0.014	N/A	0.044	--	mg/kg	0.044	Maximum	n<10	0.014	Arithmetic Mean	n<10
aluminum	mg/kg	11161	N/A	21500	--	mg/kg	21500	Maximum	n<10	11161	Arithmetic Mean	n<10
arsenic	mg/kg	2.34	N/A	5.5	--	mg/kg	5.5	Maximum	n<10	2.34	Arithmetic Mean	n<10
chromium	mg/kg	12.8	N/A	42.7	--	mg/kg	42.7	Maximum	n<10	12.8	Arithmetic Mean	n<10
vanadium	mg/kg	19	N/A	34	--	mg/kg	34	Maximum	n<10	19	Arithmetic Mean	n<10
iron	mg/kg	7269	N/A	12900	--	mg/kg	12900	Maximum	n<10	7269	Arithmetic Mean	n<10

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
Statistics: N/A since the sample size was <10 samples.

mg/kg	milligrams per kilogram
UCL	upper confidence limit
N/A	not applicable
n	number of samples
EPC	exposure point concentration

TABLE 6-13
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 3 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Site 3

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
arsenic	mg/kg	3.34	N/A	16	--	mg/kg	6.6	95% UCL-T		6.6	95% UCL-T	

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: 95% UCL of log-transformed data (95% UCL-T).
Refer to Supplemental Guidance to RAGS: Calculating the Concentration Term, OSWER Directive 9285.7-081 (USEPA, 1992d).

N/A: Data are lognormally distributed.

mg/kg	milligrams per kilogram
UCL	upper confidence limit
UCL-T	UCL of log-transformed data
N/A	not applicable
n	number of samples
EPC	exposure point concentration

TABLE 6-14
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 4 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Site 4

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
dieldrin	mg/kg	0.040	N/A	0.085	--	mg/kg	0.085	Maximum	UCL > Max	0.085	Maximum	UCL > Max
aluminum	mg/kg	13549	N/A	27800	--	mg/kg	18920	95%UCL-T	UCL < Max	18920	95%UCL-T	UCL < Max
arsenic	mg/kg	2.73	N/A	5.5	--	mg/kg	3.8	95%UCL-T	UCL < Max	3.8	95%UCL-T	UCL < Max
vanadium	mg/kg	19.4	N/A	41.4	--	mg/kg	26.9	95%UCL-T	UCL < Max	26.9	95%UCL-T	UCL < Max
iron	mg/kg	6979	N/A	14800	--	mg/kg	9671	95%UCL-T	UCL < Max	9671	95%UCL-T	UCL < Max

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: 95% UCL of log-transformed data (95% UCL-T).
Refer to Supplemental Guidance to RAGS: Calculating the Concentration Term, OSWER Directive 9285.7-081 (USEPA, 1992d).

mg/kg	milligrams per kilogram
UCL	upper confidence limit
UCL-T	UCL of log-transformed data
N/A	not applicable
n	number of samples
EPC	exposure point concentration

TABLE 6-15
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 4 SUBSURFACE SOIL (2 TO 22 FEET)
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Subsurface Soil (2 to 22 feet)
Exposure Point: Site 4

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
benzo(a)anthracene	mg/kg	0.5	N/A	1.9	--	mg/kg	1.9	Maximum	n<10	0.5	Arithmetic Mean	n<10
benzo(a)pyrene	mg/kg	0.3	N/A	1.1	--	mg/kg	1.1	Maximum	n<10	0.3	Arithmetic Mean	n<10
benzo(b)fluoranthene	mg/kg	0.4	N/A	1.2	--	mg/kg	1.2	Maximum	n<10	0.4	Arithmetic Mean	n<10
Benzo(k)fluoranthene	mg/kg	0.3	N/A	0.59	--	mg/kg	0.59	Maximum	n<10	0.3	Arithmetic Mean	n<10
chrysene	mg/kg	0.3	N/A	0.94	--	mg/kg	0.94	Maximum	n<10	0.3	Arithmetic Mean	n<10
dibenzo(a,h)anthracene	mg/kg	0.1	N/A	0.23	--	mg/kg	0.23	Maximum	n<10	0.1	Arithmetic Mean	n<10
indeno(1,2,3-cd)pyrene	mg/kg	0.1	N/A	0.12	--	mg/kg	0.12	Maximum	n<10	0.1	Arithmetic Mean	n<10
arsenic	mg/kg	3.8	N/A	6.4	--	mg/kg	6.4	Maximum	n<10	3.8	Arithmetic Mean	n<10

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: N/A since the sample size was <10 samples.

mg/kg	milligrams per kilogram
UCL	upper confidence limit
N/A	not applicable
n	number of samples
EPC	exposure point concentration

TABLE 6-16
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 4 SUBSURFACE SOIL (2 TO 15 FEET)
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Subsurface Soil (2 to 15 feet)
Exposure Point: Site 4

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
arsenic	mg/kg	6.3	N/A	6.4	--	mg/kg	6.4	Maximum	n<10	6.3	Arithmetic Mean	n<10

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: N/A since the sample size was <10 samples.

mg/kg	milligrams per kilogram
UCL	upper confidence limit
N/A	not applicable
n	number of samples
EPC	exposure point concentration

TABLE 6-17
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 6 SURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Site 6

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
benzo(a)anthracene	mg/kg	1.65	N/A	1.9	--	mg/kg	1.9	Maximum	n<10	1.65	Arithmetic Mean	n<10
benzo(a)pyrene	mg/kg	1.75	N/A	1.9	--	mg/kg	1.9	Maximum	n<10	1.75	Arithmetic Mean	n<10
benzo(b)fluoranthene	mg/kg	2.05	N/A	2.1	--	mg/kg	2.1	Maximum	n<10	2.05	Arithmetic Mean	n<10
benzo(k)fluoranthene	mg/kg	1.6	N/A	1.7	--	mg/kg	1.7	Maximum	n<10	1.6	Arithmetic Mean	n<10
chrysene	mg/kg	1.9	N/A	2.1	--	mg/kg	2.1	Maximum	n<10	1.9	Arithmetic Mean	n<10
dibenzo(a,h)anthracene	mg/kg	0.13	N/A	0.2	J	mg/kg	0.2	Maximum	n<10	0.13	Arithmetic Mean	n<10
indeno(1,2,3-cd)pyrene	mg/kg	1.5	N/A	1.6	--	mg/kg	1.6	Maximum	n<10	1.5	Arithmetic Mean	n<10
Aroclor-1260	mg/kg	0.6	N/A	0.6	J	mg/kg	0.6	Maximum	n<10	0.6	Arithmetic Mean	n<10
aluminum	mg/kg	17390	N/A	29100	--	mg/kg	29100	Maximum	n<10	17390	Arithmetic Mean	n<10
arsenic	mg/kg	2.8	N/A	3.5	--	mg/kg	3.5	Maximum	n<10	2.8	Arithmetic Mean	n<10
chromium	mg/kg	40.7	N/A	65	J	mg/kg	65	Maximum	n<10	40.7	Arithmetic Mean	n<10
vanadium	mg/kg	36	N/A	42.2	--	mg/kg	42.2	Maximum	n<10	36	Arithmetic Mean	n<10
iron	mg/kg	12300	N/A	14800	--	mg/kg	14800	Maximum	n<10	12300	Arithmetic Mean	n<10

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: N/A since the sample size was <10 samples.

mg/kg	milligrams per kilogram
UCL	upper confidence limit
N/A	not applicable
n	number of samples
EPC	exposure point concentration

TABLE 6-18
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 6 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Site 6

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
none	mg/kg	--	--	--	--	mg/kg	--	--	--	--	--	--

mg/kg	milligrams per kilogram
UCL	upper confidence limit
N/A	*not applicable*
n	number of samples
EPC	exposure point concentration

TABLE 6-19
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 30 SURFACE SOIL (GRASS AREA)
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil - Grass Area
Exposure Point: Site 30

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
aluminum	mg/kg	23767	N/A	41600	--	mg/kg	41600	Maximum	n<10	23767	Arithmetic Mean	n<10
arsenic	mg/kg	3.9	N/A	5.2	--	mg/kg	5.2	Maximum	n<10	3.9	Arithmetic Mean	n<10
vanadium	mg/kg	46.3	N/A	63.7	--	mg/kg	63.7	Maximum	n<10	46.3	Arithmetic Mean	n<10
chromium	mg/kg	21.4	N/A	30.7	--	mg/kg	30.7	Maximum	n<10	21.4	Arithmetic Mean	n<10
iron	mg/kg	16823	N/A	24100	--	mg/kg	24100	Maximum	n<10	16823	Arithmetic Mean	n<10

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: N/A since the sample size was < 10 samples.

mg/kg	milligrams per kilogram
UCL	upper confidence limit
N/A	not applicable
n	number of samples
EPC	exposure point concentration

TABLE 6-20
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 30 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Site 30

Chemical of Potential Concern	Units	Arithmetic *Mean*	95% UCL of Normal Data	Maximum *Detected* Concentration	Maximum *Qualifier*	EPC *Units*	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
arsenic	mg/kg	3.16	N/A	8.6	--	mg/kg	5.9	95%UCL-T	UCL<Max	5.9	95%UCL-T	UCL<Max

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: 95% UCL of log-transformed data (95% UCL-T).
Refer to Supplemental Guidance to RAGS: Calculating the Concentration Term, OSWER Directive 9285.7-081(USEPA, 1992d).

N/A: Data are lognormally distributed.

mg/kg	*milligrams per kilogram*
UCL	upper confidence limit
UCL-T	UCL of log-transformed data
N/A	not applicable
n	number of samples
EPC	exposure point concentration

TABLE 6-21
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 32 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Site 32

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
none	mg/kg	--	--	--	--	mg/kg	--	--	--	--	--	--

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

mg/kg milligrams per kilogram
UCL upper confidence limit
N/A not applicable
n number of samples
EPC exposure point concentration

TABLE 6-22
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
SITE 33 SUBSURFACE SOIL
NAS WHITING FIELD, MILTON, FLORIDA

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Site 33

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
arsenic	mg/kg	3.6	N/A	11.5	--	mg/kg	7.3	95%UCL-T	UCL<Max	7.3	95%UCL-T	UCL<Max

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: 95% UCL of log-transformed data (95% UCL-T).
Refer to Supplemental Guidance to RAGS: Calculating the Concentration Term, OSWER Directive 9285.7-081 (USEPA, 1992d).

N/A: Data are lognormally distributed.

mg/kg	milligrams per kilogram
UCL	upper confidence limit
UCL-T	UCL of log-transformed data
N/A	not applicable
n	*number of samples*
EPC	exposure point concentration

6.4 TOXICITY ASSESSMENT

The toxicity assessment evaluates the available evidence on the potential adverse effects associated with exposure to each COPC. With this information, a relationship between the extent of exposure and the likelihood or severity of adverse human health effects is developed. Two steps are typically associated with toxicity assessment: hazard identification and dose-response assessment.

- Hazard identification is the process of determining if exposure to an agent can cause a particular adverse health effect and, more importantly, if that effect will occur in humans. The objectives of the hazard identification in the HHRA are to (1) identify which of the contaminants detected at the site are potential hazards, and (2) summarize their potential toxicity in brief nontechnical language.

- A dose-response assessment is conducted to characterize and quantify the relationship between intake (or dose) of a COPC and the likelihood of a toxic effect or response. Two categories of toxic effects were evaluated in this HHRA: carcinogenic and noncarcinogenic. Following USEPA guidance for HHRAs (USEPA, 1989b), these two endpoints (cancer and noncancer) are evaluated separately. As a result of the dose-response assessment, identified dose-response values are used to estimate the incidence of adverse effects as a function of human exposure to a chemical.

The toxicity assessment methodology is described in Subsection 2.5.4 of the GIR (ABB-ES, 1998).

Appendix D4 of this report contains brief toxicity profiles for COPCs identified in surface soil at Sites 3, 4, 6, and 30 and subsurface soil at Sites 3, 4, 6, 30, 32, and 33. Table 6-23 contains noncancer dose-response information and Table 6-24 contains cancer dose-response information for the COPCs.

6.5 RISK CHARACTERIZATION

Risk characterization is the final step in the risk assessment process. This step involves the integration of the exposure and toxicity assessments into a qualitative or quantitative expression of potential human health risks associated with contaminant exposure. Quantitative estimates of both carcinogenic and noncarcinogenic risks are made for each COPC and each complete exposure pathway identified in the exposure assessment. The risk characterization methodology is described in Subsection 2.5.5 of the GIR (ABB-ES, 1998).

TABLE 6-23
NONCANCER TOXICITY DATA -- ORAL/DERMAL
FOR SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)
Dieldrin	chronic	5.00E-05	mg/kg/day	0.5	2.50E-05	mg/kg/day	liver	100/1	IRIS	06/23/98
Aroclor-1260		ND		NA	ND	mg/kg/day	carcinogen			
Benzo(a)anthracene		ND		NA	ND	mg/kg/day	carcinogen			
Benzo(a)pyrene		ND		NA	ND	mg/kg/day	carcinogen			
Benzo(b)fluoranthene		ND		NA	ND	mg/kg/day	carcinogen			
Benzo(k)fluoranthene		ND		NA	ND	mg/kg/day	carcinogen			
Chrysene		ND		NA	ND	mg/kg/day	carcinogen			
Dibenzo(a,h)anthracene		ND		NA	ND	mg/kg/day	carcinogen			
Indeno(1,2,3-cd)pyrene		ND		NA	ND	mg/kg/day	carcinogen			
Aluminum	chronic	1.00E+00	mg/kg/day	0.1	1.00E-01	mg/kg/day	CNS		NCEA	
Antimony	chronic	4.00E-04	mg/kg/day	0.02	8.00E-06	mg/kg/day				
Arsenic	chronic	3.00E-04	mg/kg/day	0.41	1.23E-04	mg/kg/day	skin	3/1	IRIS	06/23/98
Chromium VI	chronic	5.00E-03	mg/kg/day	0.02	1.00E-04	mg/kg/day	NOEL		IRIS	06/23/98
Vanadium	chronic	7.00E-03	mg/kg/day	0.01	7.00E-05	mg/kg/day	NOEL	100	HEAST	07/98
Iron		3.00E-01	mg/kg/day	0.15	4.50E-02	mg/kg/day				
Manganese	chronic	1.40E-01	mg/kg/day	0.04	5.60E-03	mg/kg/day	CNS			

(1) USEPA Region IV Table, June 1997.
(2) RfD dermal = RfD oral x (Oral to Dermal Adjustment Factor).
(3) Dates of IRIS, HEAST, or NCEA.

Notes: RfD = reference dose
mg/kg/day = milligrams per kilogram per day
CNS = central nervous system
IRIS = Integrated Risk Information System, on-line database search, current as of June, 1998.
HEAST = Health Effects Assessment Summary Tables, July 1997 (USEPA, 1997a).
ND = no data
NA = not applicable since an oral RfD is not available for this compound data
NOEL = no observable effects level
NCEA = National Center for Environmental Assessment

TABLE 6-24
CANCER TOXICITY DATA -- ORAL/DERMAL
FOR SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal Cancer Slope Factor (2)	Units	Weight of Evidence/ Cancer Guideline Description	Tumor Type	Source	Date (3) (MM/DD/YY)
Benzo(a)anthracene	7.30E-01	0.31	NE		B2	skin	NCEA	
Benzo(a)pyrene	7.30E+00	0.31	NE		B2	skin	IRIS	06/23/98
Benzo(b)fluoranthene	7.30E-01	0.31	NE		B2	skin	NCEA	
Benzo(k)fluoranthene	7.30E-02	0.31	NE		B2	skin	NCEA	
Chrysene	7.30E-03	0.31	NE		B2	skin	NCEA	
Dibenzo(a,h)anthracene	7.30E+00	0.31	NE		B2	skin	NCEA	
Indeno(1,2,3-cd)pyrene	7.30E-01	0.31	NE		B2	skin	NCEA	
Aroclor-1260	2.00E+00	0.9	2.22E+00	mg/kg/day	B2	liver	IRIS	06/23/98
Dieldrin	1.60E+01	0.5	3.20E+01	mg/kg/day	B2	liver	IRIS	06/23/98
Aluminum	ND	NA	ND					
Arsenic	1.5E+00	0.41	3.66E+00	mg/kg/day	A	lung, skin	IRIS	06/23/98
Chromium VI	ND	NA	ND					
Manganese	ND	NA	ND					
Vanadium	ND	NA	ND					
Iron	ND	NA	ND					

(1) USEPA Region IV Table, June 1997.
(2) CSF dermal = CSF oral/(Oral to Dermal Adjustment Factor)
(3) Dates of IRIS or NCEA.

Notes:
- CSF = Cancer Slope Factor
- mg/kg/day = milligrams per kilogram per day
- IRIS = Integrated Risk Information System, on-line database search, June 1998.
- ND = no data
- NA = not applicable since oral CSF is not available
- NE = not evaluated (USEPA, Attachment IV, Risk Assessment Issue Paper for: Evaluation of Oral-to-Dermal Extrapolation for Benzo(a)pyrene]
- NCEA = National Center for Environmental Assessment

USEPA Group:
- A - Human carcinogen
- B1 - Probable human carcinogen - indicates that limited human data are available
- B2 - Probable human carcinogen - indicates sufficient evidence in animals is inadequate or no evidence in humans
- C - Possible human carcinogen
- D - Not classifiable as a human carcinogen
- E - Evidence of noncarcinogenicity

Weight of Evidence:
- Known/Likely
- Cannot be Determined

Risk estimates for potential exposures to surface soil and subsurface soil under current and potential future land use scenarios are discussed in Paragraphs 6.5.1 and 6.5.2. These risk estimates are then compared to Federal USEPA and FDEP carcinogenic and noncarcinogenic target levels.

The USEPA guidelines, established in the NCP, indicate the total lifetime cancer risk due to exposure to the COPCs at a site, by each complete exposure pathway, should not exceed a range of 1 in 1,000,000 (1×10^{-6}) to 1 in 10,000 (1×10^{-4}) (USEPA, 1990). FDEP has indicated chemical-specific risks greater than one in one million (1×10^{-6}) warrant further consideration. Cancer risk calculations associated with exposure to surface and subsurface soil are included in Appendix D3 and summarized in Appendix D5.

An HQ less than 1.0 indicates noncarcinogenic toxic effects are not expected to occur. Hazard Indices (HIs) greater than 1 may be indicative of possible noncarcinogenic toxic effects, but the circumstances must be evaluated on a case-by-case basis (USEPA, 1989b). As the HI increases, so does the likelihood adverse effects might be associated with exposure. Noncancer risk calculations are included in Appendix D3 and summarized in Appendix D6. The target organ risk was evaluated and is presented in Appendix D7. If noncarcinogenic risk to an individual organ exceeded 1.0, there is a potential for adverse noncarcinogenic health effects.

Tables 6-25 through 6-30 summarize cancer risks and HIs for each site assuming the concrete remains in place at Sites 30, 32, and 33. Tables 6-31 through 6-33 summarize cancer risks and HIs for surface soils at Sites 30, 32, and 33 under the hypothetical future condition in which concrete is removed from these sites. The HIs associated with TPH and iron present in surface and subsurface soils are discussed in Sections 6.6 and 6.7, respectively.

6.5.1 Site 3

6.5.1.1 Surface Soil

Carcinogenic Risk. The cancer risks associated with reasonable maximum exposure (RME) to surface soil (ingestion and dermal contact) are 1.5×10^{-6} for an older child trespasser, 2.4×10^{-6} for an adult trespasser, 6.9×10^{-6} for the occupational worker, 1.0×10^{-6} for the site maintenance worker, 1.4×10^{-7} for the construction worker, and 3.9×10^{-5} for the child/adult resident. The total RME cancer risk for the trespasser (child/adult) is 3.9×10^{-6}. The cancer risks for all receptors are less than or within the USEPA acceptable cancer risk range of 1×10^{-4} to 1×10^{-6}. The risk values for the construction worker and site maintenance worker are less than or equal to the Florida target risk of 1×10^{-6}. However, the cancer risks associated with exposure to surface soils for the trespasser (adult and older child), the occupational worker, and the child/adult resident are more than the Florida target risk of 1×10^{-6}. The primary risk driver (chemicals exceeding acceptable risk ranges) is arsenic for all receptors.

TABLE 6-25

SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks >10^{-4}	Chemicals with Cancer Risks >10^{-5}	Chemicals with Cancer Risks >10^{-6}	Hazard Index (RME)	Hazard Index (CTE)	Chemicals with HI > 1
Trespasser[1] (Older Child)	Ingestion	3.5E-07	1.5E-08	--	--	--	0.02	NE	--
	Dermal Contact	1.2E-06	9.9E-08	--	--	Arsenic	0.03	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.5E-06	1.1E-07	--	--	Arsenic	0.05	NE	--
Trespasser[1] (Adult)	Ingestion	4.50E-07	3.3E-08	--	--	--	0.01	NE	--
	Dermal Contact	1.90E-06	4.9E-08	--	--	Arsenic	0.03	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	2.40E-06	8.2E-08	--	--	Arsenic	0.04	NE	--
Occupational Worker (Office Worker)	Ingestion	1.6E-06	2.3E-07	--	--	Arsenic	0.03	NE	--
	Dermal Contact	5.3E-06	1.6E-07	--	--	Arsenic	0.06	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	6.9E-06	4.0E-07	--	--	Arsenic	0.09	NE	--
Maintenance Worker (Grounds Keeper)	Ingestion	4.7E-08	NE	--	--	--	0.001	NE	--
	Dermal Contact	9.5E-07	NE	--	--	--	0.01	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.0E-06	NE	--	--	--	0.01	NE	--
Construction Worker Surface Soil	Ingestion	7.2E-08	NE	--	--	--	0.03	NE	--
	Dermal Contact	6.3E-08	NE	--	--	--	0.02	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.4E-07	NE	--	--	--	0.05	NE	--
Construction Worker Subsurface Soil	Ingestion	8.0E-08	NE	--	--	--	0.01	NE	--
	Dermal Contact	7.5E-08	NE	--	--	--	0.01	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.5E-07	NE	--	--	--	0.02	NE	--
On-Site Resident (Adult and Child)	Ingestion	1.4E-05	6.30E-07	--	Arsenic	Dieldrin	NA	NA	--
	Dermal Contact	2.5E-05	6.00E-07	--	Arsenic	--	NA	NA	--
	Inhalation	--	--	--	--	--	NA	NA	--
	Total	3.9E-05	1.20E-06	--	Arsenic	Dieldrin	NA	NA	--
On-Site Resident (Adult)	Ingestion	NA	NA	NA	NA	NA	0.07	NE	--
	Dermal Contact	NA	NA	NA	NA	NA	0.20	NE	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	0.28	NE	--
On-Site Resident (Child)	Ingestion	NA	NA	NA	NA	NA	0.69	0.1	--
	Dermal Contact	NA	NA	NA	NA	NA	0.32	0.05	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	1.01	0.15	--

The inhalation pathway was not evaluated for Site 3 because the maximum site concentrations did not exceed the soil to air SSLs.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard index
NE - CTE risk not evaluated
NA - not applicable
(1) The total RME and CTE cancer risks for the trespasser (older child/adult) are 2.4E-6 and 1.9E-7, respectively.

TABLE 6-26

SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks >10^{-4}	Chemicals with Cancer Risks >10^{-5}	Chemicals with Cancer Risks >10^{-6}	Hazard Index (RME)	Hazard Index (CTE)	Chemicals with HI > 1
Trespasser[1] (Older Child)	Ingestion	2.8E-07	2.8E-08	--	--	--	0.01	NE	--
	Dermal Contact	8.4E-07	1.7E-07	--	--	--	0.02	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.1E-06	2.0E-07	--	--	Arsenic	0.03	NE	--
Trespasser[1] (Adult)	Ingestion	3.6E-07	6.20E-08	--	--	--	0.01	NE	--
	Dermal Contact	1.4E-06	8.30E-08	--	--	Arsenic	0.02	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.7E-06	1.50E-07	--	--	Arsenic	0.02	NE	--
Occupational Worker (Office Worker)	Ingestion	1.2E-06	4.4E-07	--	--	--	0.02	NE	--
	Dermal Contact	3.8E-06	2.7E-07	--	--	Arsenic	0.04	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	5.0E-06	7.2E-07	--	--	Arsenic	0.05	NE	--
Maintenance Worker (Grounds Keeper)	Ingestion	7.4E-08	NE	--	--	--	0.001	NE	--
	Dermal Contact	6.8E-07	NE	--	--	--	0.01	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	7.6E-07	NE	--	--	--	0.01	NE	--
Construction Worker Surface Soil	Ingestion	5.7E-08	NE	--	--	--	0.02	NE	--
	Dermal Contact	4.6E-08	NE	--	--	--	0.01	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.0E-07	NE	--	--	--	0.03	NE	--
Construction Worker Subsurface Soil 2-15 feet	Ingestion	7.7E-08	NE	--	--	--	0.01	NE	--
	Dermal Contact	7.2E-08	NE	--	--	--	0.01	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.5E-07	NE	--	--	--	0.02	NE	--
Construction Worker Subsurface Soil 2-22 feet	Ingestion	1.7E-07	NE	--	--	--	0.01	NE	--
	Dermal Contact	7.2E-08	NE	--	--	--	0.01	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	2.5E-07	NE	--	--	--	0.02	NE	--
On-Site Resident (Adult and Child)	Ingestion	1.1E-05	1.2E-06	--	--	Dieldrin, Arsenic	NA	NA	--
	Dermal Contact	1.8E-05	1.0E-06	--	Arsenic	Dieldrin	NA	NA	--
	Inhalation	--	--	--	--	--	NA	NA	--
	Total	2.9E-05	2.2E-06	--	Arsenic	Dieldrin	NA	NA	--
On-Site Resident (Adult)	Ingestion	NA	NA	NA	NA	NA	0.05	NE	--
	Dermal Contact	NA	NA	NA	NA	NA	0.13	NE	--
	Inhalation	NA	NA	NA	NA	NA	--	NE	--
	Total	NA	NA	NA	NA	NA	0.18	NE	--
On-Site Resident (Child)	Ingestion	NA	NA	NA	NA	NA	0.47	NE	--
	Dermal Contact	NA	NA	NA	NA	NA	0.20	NE	--
	Inhalation	NA	NA	NA	NA	NA	--	NE	--
	Total	NA	NA	NA	NA	NA	0.67	NE	--

The inhalation pathway was not evaluated for Site 4 because the maximum site concentrations did not exceed the soil to air SSLs.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard index
NE - CTE risk not evaluated
NA - not applicable
(1) The total RME and CTE cancer risks for the trespasser (older child/adult) are 2.8E-6 and 3.5E-7, respectively.

TABLE 6-27

SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$	Chemicals with Cancer Risks $>10^{-6}$	Hazard Index (RME)	Hazard Index (CTE)	Chemicals with HI > 1
Trespasser(1) (Older Child)	Ingestion	1.0E-06	9.0E-08	--	--	--	0.02	NE	--
	Dermal Contact	7.6E-07	1.2E-07	--	--	--	0.03	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.8E-06	2.1E-07	--	--	--	0.05	NE	--
Trespasser(1) (Adult)	Ingestion	1.3E-06	2.00E-07	--	--	--	0.01	NE	--
	Dermal Contact	1.2E-06	6.00E-08	--	--	Arsenic	0.03	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	2.5E-06	2.60E-07	--	--	Arsenic	0.04	NE	--
Occupational Worker (Office Worker)	Ingestion	4.5E-06	1.4E-06	--	--	Benzo(a)pyrene	0.03	NE	--
	Dermal Contact	3.4E-06	2.0E-07	--	--	Arsenic	0.06	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	7.9E-06	1.6E-06	--	--	Arsenic, Benzo(a)pyrene	0.08	NE	--
Maintenance Worker (Grounds Keeper)	Ingestion	2.7E-07	NE	--	--	--	0.002	NE	--
	Dermal Contact	6.1E-07	NE	--	--	--	0.01	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	8.8E-07	NE	--	--	--	0.01	NE	--
Construction Worker Surface Soil	Ingestion	2.1E-07	NE	--	--	--	0.03	NE	--
	Dermal Contact	4.1E-08	NE	--	--	--	0.02	NE	--
	Inhalation	--	NE	--	--	--	--	--	--
	Total	2.5E-07	NE	--	--	--	0.05	NE	--
Construction Worker Subsurface Soil	Ingestion	NA	NA	--	--	--	NA	NA	--
	Dermal Contact	NA	NA	--	--	--	NA	NA	--
	Inhalation	NA	NA	--	--	--	NA	NA	--
	Total	NA	NA	--	--	--	NA	NA	--
On-Site Resident (Adult and Child)	Ingestion	4.1E-05	4.4E-06	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Aroclor-1260, Arsenic	NA	NA	--
	Dermal Contact	1.6E-05	9.0E-07	--	Arsenic	--	NA	NA	--
	Inhalation	--	--	--	--	--	NA	NA	--
	Total	5.7E-05	5.3E-06	--	Benzo(a)pyrene, Arsenic	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Aroclor-1260	NA	NA	--
On-Site Resident (Adult)	Ingestion	NA	NA	NA	NA	NA	0.08	NE	--
	Dermal Contact	NA	NA	NA	NA	NA	0.20	NE	--
	Inhalation	NA	NA	NA	NA	NA	--	NE	--
	Total	NA	NA	NA	NA	NA	0.28	NE	--
On-Site Resident (Child)	Ingestion	NA	NA	NA	NA	NA	0.76	0.26	--
	Dermal Contact	NA	NA	NA	NA	NA	0.30	0.10	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	1.06	0.36	--

The inhalation pathway was not evaluated for Site 6 because the maximum site concentrations did not exceed the soil to air SSLs.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard index
NE - CTE risk not evaluated
NA - not applicable
(1) The total RME and CTE cancer risks for the trespasser (older child/adult) are 4.3E-6 and 4.7E-7, respectively.

TABLE 6-28

SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$	Chemicals with Cancer Risks $>10^{-6}$	Hazard Index (RME)	Hazard Index (CTE)	Chemicals with HI > 1
Construction Worker Surface Soil	Ingestion	5.8E-08	NE	--	--	--	0.04	NE	--
	Dermal Contact	5.4E-08	NE	--	--	--	0.02	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.1E-07	NE	--	--	--	0.06	NE	--
Construction Worker Subsurface Soil	Ingestion	7.1E-08	NE	--	--	--	0.01	NE	--
	Dermal Contact	6.7E-08	NE	--	--	--	0.01	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.4E-07	NE	--	--	--	0.02	NE	--
On-Site Resident (Adult and Child)	Ingestion	1.1E-05	9.7E-07	--	Arsenic	--	NA	NA	--
	Dermal Contact	2.1E-05	9.7E-07	--	Arsenic	--	NA	NA	--
	Inhalation	--	--	--	--	--	NA	NA	--
	Total	3.2E-05	2.0E-06	--	Arsenic	--	NA	NA	--
On-Site Resident (Adult)	Ingestion	NA	NA	NA	NA	NA	0.09	NE	--
	Dermal Contact	NA	NA	NA	NA	NA	0.20	NE	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	0.30	NE	--
On-Site Resident (Child)	Ingestion	NA	NA	NA	NA	NA	0.93	0.21	--
	Dermal Contact	NA	NA	NA	NA	NA	0.35	..09	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	1.3	0.31	--

The inhalation pathway was not evaluated for Site 30 because the maximum site concentrations did not exceed the soil to air SSLs.
Surface soil is evaluated in the area covered with grass.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard index
NE - CTE risk not evaluated
NA - not applicable

TABLE 6-29
SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$	Chemicals with Cancer Risks $>10^{-6}$	Hazard Index (CTE)	Hazard Index (CTE)	Chemicals with HI > 1
Construction Worker	Ingestion	NA		--	--	--	NA		--
Surface Soil (1)	Dermal Contact	NA		--	--	--	NA		--
Subsurface Soil (2)	Inhalation	NA		--	--	--	NA		--
	Total	NA		--	--	--	NA		--
On-Site Resident	Ingestion	NA		--	--	--	NA		--
(Adult and Child)	Dermal Contact	NA		--	--	--	NA		--
Surface Soil (1)	Inhalation	NA		--	--	--	NA		--
	Total	NA		--	--	--	NA		--
On-Site Resident	Ingestion	NA		--	--	--	NA		--
(Adult)	Dermal Contact	NA		--	--	--	NA		--
Surface Soil (1)	Inhalation	NA		--	--	--	NA		--
	Total	NA		--	--	--	NA		--
On-Site Resident	Ingestion	NA		--	--	--	NA		--
(Child)	Dermal Contact	NA		--	--	--	NA		--
Surface Soil (1)	Inhalation	NA		--	--	--	NA		--
	Total	NA		--	--	--	NA		--

The inhalation pathway was not evaluated for Site 32 because the maximum site concentrations did not exceed the soil to air SSLs.
(1) Concrete covers the surface soil. There is no complete exposure pathway.
(2) There are no COPCs for subsurface soil at Site 32.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard index
NE - CTE risk

TABLE 6-30

SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 33
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$	Chemicals with Cancer Risks $>10^{-6}$	Hazard Index (RME)	Hazard Index (CTE)	Chemicals with HI > 1
Construction Worker	Ingestion	8.8E-08	NE	--	--	--	0.01	NE	--
Surface Soil (1)	Dermal Contact	8.2E-08	NE	--	--	--	0.01	NE	--
Subsurface Soil (2)	Inhalation	--	NE	--	--	--	--	NE	--
	Total	1.7E-07	NE	--	--	--	0.03	NE	--
On-Site Resident	Ingestion	NA	NA	--	--	--	NA	NA	--
(Adult and Child)	Dermal Contact	NA	NA	--	--	--	NA	NA	--
Surface Soil (1)	Inhalation	NA	NA	--	--	--	NA	NA	--
	Total	NA	NA	--	--	--	NA	NA	--
On-Site Resident	Ingestion	NA	NA	--	--	--	NA	NA	--
(Adult)	Dermal Contact	NA	NA	--	--	--	NA	NA	--
Surface Soil (1)	Inhalation	NA	NA	--	--	--	NA	NA	--
	Total	NA	NA	--	--	--	NA	NA	--
On-Site Resident	Ingestion	NA	NA	--	--	--	NA	NA	--
(Child)	Dermal Contact	NA	NA	--	--	--	NA	NA	--
Surface Soil (1)	Inhalation	NA	NA	--	--	--	NA	NA	--
	Total	NA	NA	--	--	--	NA	NA	--

The inhalation pathway was not evaluated for Site 33 because the maximum site concentrations did not exceed the soil to air SSLs.
(1) Surface soil is covered with concrete. Therefore, there is not a complete exposure pathway.
(2) Exposure to chemicals in subsurface soil for the construction worker was evaluated.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard index
NE - CTE risk not evaluated
NA - not applicable

TABLE 6-31

SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 30
HYPOTHETICAL FUTURE CONDITION WITH CONCRETE REMOVAL
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$	Chemicals with Cancer Risks $>10^{-6}$	Hazard Index (RME)	Hazard Index (CTE)	Chemicals with HI > 1
Trespasser[(1)] Older Child	Ingestion	3.1E-07	2.2E-08	--	--	--	0.02	0.01	--
	Dermal Contact	1.1E-06	1.5E-07	--	--	Arsenic	0.04	0.02	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.4E-06	1.8E-07	--	--	Arsenic	0.06	0.03	--
Trespasser[(1)] Adult	Ingestion	3.9E-07	4.89E-08	--	--	--	0.01	0.003	--
	Dermal Contact	1.8E-06	7.63E-08	--	--	Arsenic	0.03	0.003	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	2.2E-06	1.25E-07	--	--	Arsenic	0.05	0.01	--
Occupational Worker (Office Worker)	Ingestion	1.4E-06	3.5E-07	--	--	Arsenic	0.04	0.02	--
	Dermal Contact	4.9E-06	2.5E-07	--	--	Arsenic	0.07	0.01	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	6.3E-06	6.0E-07	--	--	Arsenic	0.11	0.03	--
Maintenance Worker (Grounds Keeper)	Ingestion	8.2E-08	NE	--	--	--	0.002	NE	--
	Dermal Contact	8.8E-07	NE	--	--	--	0.01	NE	--
	Inhalation	--	NE	--	--	--	--	NE	--
	Total	9.6E-07	NE	--	--	--	0.02	NE	--
Construction Worker	Ingestion	6.3E-08	NE	--	--	--	0.05	NE	--
	Dermal Contact	5.9E-08	NE	--	--	--	0.02	NE	--
	Inhalation	--	NE	--	--	--	--	NE	--
	Total	1.2E-07	NE	--	--	--	0.07	NE	--
On-Site Resident (Adult and Child)	Ingestion	1.2E-05	9.3E-07	--	Arsenic	Arsenic	NA	NA	--
	Dermal Contact	2.3E-05	9.3E-07	--	Arsenic	Arsenic	NA	NA	--
	Inhalation	--	--	--	--	--	NA	NA	--
	Total	3.5E-05	1.9E-06	--	Arsenic	Arsenic	NA	NA	--
On-Site Resident (Adult)	Ingestion	NA	NA	NA	NA	NA	0.11	0.02	--
	Dermal Contact	NA	NA	NA	NA	NA	0.25	0.02	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	0.36	0.03	--
On-Site Resident (Child)	Ingestion	NA	NA	NA	NA	NA	1.03	0.16	--
	Dermal Contact	NA	NA	NA	NA	NA	0.39	0.08	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	1.42	0.24	--

The inhalation pathway was not evaluated for Site 30 because the maximum site concentrations did not exceed the soil to air SSLs.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard Index
NE - CTE risk not evaluated
NA - not applicable
(1) The total RME and CTE cancer risks for the trespasser (older child/adult) are 3.6E-6 and 3.05E-6, respectively.

TABLE 6-32

SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 32
HYPOTHETICAL FUTURE CONDITION WITH CONCRETE REMOVAL
NAS WHITING FIELD, MILTON, FLORIDA

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$	Chemicals with Cancer Risks $>10^{-6}$	Hazard Index (RME)	Hazard Index (CTE)	Chemicals with HI > 1
Trespasser(1) Older Child	Ingestion	1.6E-07	NE	--	--	--	0.01	NE	--
	Dermal Contact	5.9E-07	NE	--	--	--	0.03	NE	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	7.5E-07	NE	--	--	--	0.04	NE	--
Trespasser(1) Adult	Ingestion	2.1E-07	1.6E-08	--	--	--	0.01	0.002	--
	Dermal Contact	9.5E-07	1.7E-09	--	--	--	0.02	0.002	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.2E-06	1.8E-08	--	--	Arsenic	0.03	0.004	--
Occupational Worker (Office Worker)	Ingestion	7.3E-07	1.1E-07	--	--	--	0.03	0.01	--
	Dermal Contact	2.6E-06	8.1E-08	--	--	Arsenic	0.05	0.005	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	3.4E-06	1.9E-07	--	--	Arsenic	0.08	0.02	--
Maintenance Worker (Grounds Keeper)	Ingestion	4.4E-08	NE	--	--	--	0.002	NE	--
	Dermal Contact	4.7E-07	NE	--	--	--	0.01	NE	--
	Inhalation	--	NE	--	--	--	--	NE	--
	Total	5.2E-07	NE	--	--	--	0.01	NE	--
Construction Worker	Ingestion	3.4E-08	NE	--	--	--	0.03	NE	--
	Dermal Contact	3.2E-08	NE	--	--	--	0.02	NE	--
	Inhalation	--	NE	--	--	--	--	NE	--
	Total	6.5E-08	NE	--	--	--	0.04	NE	--
On-Site Resident (Adult and Child)	Ingestion	6.6E-06	3.0E-07	--	--	Arsenic	NA	NA	--
	Dermal Contact	1.2E-05	3.0E-07	--	Arsenic	Arsenic	NA	NA	--
	Inhalation	--	--	--	--	--	NA	NA	--
	Total	1.9E-05	6.0E-07	--	Arsenic	Arsenic	NA	NA	--
On-Site Resident (Adult)	Ingestion	NA	NA	NA	NA	NA	0.07	0.01	--
	Dermal Contact	NA	NA	NA	NA	NA	0.18	0.01	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	0.25	0.02	--
On-Site Resident (Child)	Ingestion	NA	NA	NA	NA	NA	0.66	0.11	--
	Dermal Contact	NA	NA	NA	NA	NA	0.27	0.04	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	0.93	0.15	--

The inhalation pathway was not evaluated for Site 32 because the maximum site concentrations did not exceed the soil to air SSLs.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard index
NE - CTE risk not evaluated
NA - not applicable
(1) The total RME cancer risk for the trespasser (older child/adult) is 2.0E-6.

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TABLE 6-33

SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR SITE 33
HYPOTHETICAL FUTURE CONDITION WITH CONCRETE REMOVAL
NAS WHITING FIELD, MILTON, FLORIDA

Receptor	Exposure Route	Cancer Risk (RME)	Cancer Risk (CTE)	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$	Chemicals with Cancer Risks $>10^{-6}$	Hazard Index (RME)	Hazard Index (CTE)	Chemicals with HI > 1
Trespasser(1) Older Child	Ingestion	6.8E-07	2.2E-08	--	--	--	0.02	0.004	--
	Dermal Contact	2.4E-06	1.5E-07	--	--	Arsenic	0.05	0.02	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	3.1E-06	1.8E-07	--	--	Arsenic	0.06	0.02	--
Trespasser(1) Adult	Ingestion	8.7E-07	4.9E-08	--	--	--	0.01	0.003	--
	Dermal Contact	3.9E-06	7.6E-08	--	--	Arsenic	0.04	0.002	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	4.8E-06	1.3E-07	--	--	Arsenic	0.05	0.01	--
Occupational Worker (Office Worker)	Ingestion	3.0E-06	3.5E-07	--	--	Arsenic	0.03	0.01	--
	Dermal Contact	1.1E-05	2.5E-07	--	Arsenic	Arsenic	0.08	0.01	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	1.4E-05	6.0E-07	--	Arsenic	Arsenic	0.12	0.02	--
Maintenance Worker (Grounds Keeper)	Ingestion	1.8E-07	2.1E-08	--	--	--	0.002	0.001	--
	Dermal Contact	1.9E-06	6.5E-08	--	--	Arsenic	0.02	0.002	--
	Inhalation	--	--	--	--	--	--	--	--
	Total	2.1E-06	8.6E-08	--	--	Arsenic	0.02	0.002	--
Construction Worker	Ingestion	1.4E-07	NE	--	--	--	0.04	NE	--
	Dermal Contact	1.3E-07	NE	--	--	--	0.03	NE	--
	Inhalation	--	NE	--	--	--	--	NE	--
	Total	2.7E-07	NE	--	--	--	0.06	NE	--
On-Site Resident (Adult and Child)	Ingestion	2.7E-05	9.3E-07	--	Arsenic	Arsenic	NA	NA	--
	Dermal Contact	5.1E-05	9.3E-07	--	Arsenic	Arsenic	NA	NA	--
	Inhalation	--	--	--	--	--	NA	NA	--
	Total	7.8E-05	1.9E-06	--	Arsenic	Arsenic	NA	NA	--
On-Site Resident (Adult)	Ingestion	NA	NA	NA	NA	NA	0.09	0.01	--
	Dermal Contact	NA	NA	NA	NA	NA	0.30	0.01	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	0.38	0.03	--
On-Site Resident (Child)	Ingestion	NA	NA	NA	NA	NA	0.81	0.12	--
	Dermal Contact	NA	NA	NA	NA	NA	0.46	0.06	--
	Inhalation	NA	NA	NA	NA	NA	--	--	--
	Total	NA	NA	NA	NA	NA	1.27	0.18	--

The inhalation pathway was not evaluated for Site 33 because the maximum site concentrations did not exceed the soil to air SSLs.
RME - Reasonable maximum exposure
CTE - Central tendency exposure
HI - Hazard index
NE - CTE risk not evaluated
NA - not applicable
(1) The total RME and CTE cancer risks for the trespasser (older child/adult) are 7.9E-6 and 3.1E-7, respectively.

Dieldrin is also a risk driver for the child and adult resident. The carcinogenic risks for Site 3 are shown in Tables D5-1 through D5-6 in Appendix D5 of this report. Arsenic has not been associated with any past operations at the site; therefore, arsenic may be present due to background. Dieldrin also has not been associated with any past operations at the site and may reflect historical pesticide applications, such as fire ant control.

The carcinogenic risk for the trespasser (older child/adult) and the occupational worker for the central tendency exposure (CTE) scenario is less than the Florida target risk of 10^{-6}. Only the residential receptor, with a cancer risk estimate of 1.2×10^{-6}, has a risk marginally exceeding the Florida target risk level.

Noncarcinogenic Risk. The RME HIs associated with surface soil ingestion and dermal contact for the older child/adult trespasser, occupational worker, site maintenance worker, construction worker, and the adult resident are below USEPA's and FDEP's target HI of 1. The HI (RME) for the child resident is 1.0. *However, the HIs (RME) for individual target organs are less than 1.0.* The CTE HI for the child resident is 0.15. The HIs for Site 3 are shown in Tables D6-1 through D6-7 in Appendix D6 of this report.

6.5.1.2 Subsurface Soil

Carcinogenic Risk. The cancer risk (RME) associated with exposure to subsurface soil (ingestion and dermal contact) for the construction worker is 1.5×10^{-7} which is below the USEPA acceptable risk range of 1×10^{-4} to 1×10^{-6} and below the FDEP target level of 1×10^{-6}. The carcinogenic risk for the construction worker at Site 3 is shown in Table D5-7 (Appendix D5).

Noncarcinogenic Risk. The HI (RME) for the construction worker for exposure to subsurface soils is below the USEPA and FDEP target HI of 1.0. The HI for the construction worker at Site 3 is shown in Table D6-8 (Appendix D6).

6.5.2 Site 4

6.5.2.1 Surface Soil

Carcinogenic Risk. The cancer risks (RME) associated with exposure to surface soil (ingestion and dermal contact) are 1.1×10^{-6} for an older child trespasser, 1.7×10^{-6} for an adult trespasser, 5.0×10^{-6} for the occupational worker, 7.6×10^{-7} for the site maintenance worker, 1.0×10^{-7} for the construction worker, and 2.9×10^{-5} for the child/adult resident. The total RME cancer risk for the trespasser (child/adult) is 2.8×10^{-6}. The cancer risks for all receptors are less than or within the USEPA acceptable cancer risk range of 1×10^{-4}

to 1 x 10^{-6}. The risk values for the construction worker and site maintenance worker are less than the FDEP target risk of 1 x 10^{-6}. However, the cancer risks associated with exposure to surface soils for the trespasser (older child/adult), occupational worker, and child/adult resident is more than the Florida target risk of 1 x 10^{-6}. The primary risk driver is arsenic for all receptors. Dieldrin, in addition to arsenic, was a risk driver for the child and adult resident. Arsenic has not been associated with any past operations at the site; therefore, arsenic may be present due to background. Dieldrin also has not been associated with any past operations at the site and may reflect historical pesticide applications, such as fire ant control. The carcinogenic risks for Site 4 are presented in Tables D5-8 through D5-13 in Appendix D5 of this report.

The carcinogenic risk for the trespasser (older child/adult) and the occupational worker for the CTE scenario did not exceed the Florida target risk of 10^{-6}. Only the residential receptor, with a CTE risk of 2.2 x 10^{-6}, has a cancer risk estimate exceeding the Florida target risk level.

Noncarcinogenic Risk The HIs (RME) associated with surface soil ingestion and dermal contact for the trespasser (older child/adult), occupational worker, site maintenance worker, construction worker, the trespasser older child/adult are below the USEPA and FDEP target HI of 1.0. The HIs for Site 4 are presented in Tables D6-9 through D6-15 in Appendix D6 of this report.

6.5.2.2 Subsurface Soil

Carcinogenic Risk. The cancer risk (RME) associated with construction worker exposure (ingestion and dermal contact) to subsurface soil 2 to 22 feet deep is 2.5 x 10^{-7}. This risk is below the USEPA acceptable risk range of 1 x 10^{-4} to 1 x 10^{-6} and below the FDEP target level of 1 x 10^{-6}. The carcinogenic risk for the construction worker associated with soil 2 to 22 feet deep at Site 4 is shown in Table D5-14 in Appendix D5. The cancer risk (RME) associated with construction worker exposure (ingestion and dermal contact) to subsurface soil 2 to 15 feet deep is 1.5 x 10^{-7}. This risk is below the USEPA acceptable risk range of 1 x 10^{-4} to 1 x 10^{-6} and below the FDEP target level of 1 x 10^{-6}. The carcinogenic risk for the construction worker associated with soil 2 to 15 feet deep at Site 4 is shown in Table D5-15.

Noncarcinogenic Risk. The HI (RME) for the construction worker for exposure to subsurface soils at Site 4 is below the USEPA and FDEP target HI of 1.0 and is shown in Tables D6-16 and D6-17 in Appendix D6.

6.5.3 Site 6

6.5.3.1 Surface Soil

Carcinogenic Risk. The cancer risks (RME) associated with exposure to surface soil (ingestion and dermal contact) are 1.8 x 10^{-6} for an older child trespasser, 2.5 x 10^{-6} for an adult trespasser, 7.9 x 10^{-6} for the occupational worker, 8.8 x 10^{-7} for the site maintenance worker, 2.5 x 10^{-7} for the construction worker, and 5.7 x 10^{-5} for the child/adult resident. The total RME cancer risk for the trespasser (older child/adult) is 4.3 x 10^{-6}. All RME cancer risk values are within or below the USEPA acceptable cancer risk range of 1 x 10^{-4} to 1 x 10^{-6} for all receptors. The risk values for the construction worker and the site maintenance worker are less than the FDEP target risk of 1 x 10^{-6}. However, the cancer risks associated with exposure to surface soils for the trespasser (older child/adult), occupational worker, and child/adult resident exceed the Florida level of concern of 1 x 10^{-6}. The primary risk drivers are arsenic and benzo(a)pyrene for all receptors. Arsenic has not been associated with any past operations at the site; therefore, arsenic may be present due to background. The carcinogenic risks for Site 6 are shown in Tables D5-16 through D5-21 in Appendix D5 of this report.

The carcinogenic risks for the trespasser (older child/adult) for the CTE scenario did not exceed the Florida target risk of 10^{-6}. The risks for the residential receptor, 5.3 x 10^{-6}, and the occupational worker, 1.6 x 10^{-6}, exceed the Florida target risk level.

Noncarcinogenic Risk. The RME HIs associated with surface soil ingestion and dermal contact for the trespasser (older child/adult), occupational worker, site maintenance worker, construction worker, and the adult resident are below the USEPA and FDEP target HI of 1.0. The RME HI for the child resident is 1.1 which slightly exceeds unity (1.0). *However, the HIs (RME) are less than 1.0 for individual target organs.* The CTE HI for the child resident is 0.4. The HIs for Site 6 are shown in Tables D6-18 through D6-23 in Appendix D6 of this report.

6.5.3.2 Subsurface Soil

There are no COPCs for subsurface soil at Site 6.

6.5.4 Site 30

6.5.4.1 Surface Soil

Carcinogenic Risk. The cancer risks associated with RME exposure to surface soil in the grass area (ingestion and dermal contact) are 1.1×10^{-7} for the construction worker and 3.2×10^{-5} for the child/adult resident. The risk for the child/adult resident is within the USEPA acceptable cancer risk range of 1×10^{-4} to 1×10^{-6}. The risk value for the construction worker is less than the FDEP target risk of 1×10^{-6}. However, the cancer risk associated with exposure to surface soils for the child/adult resident exceeds the Florida level of concern of 1×10^{-6}. The primary risk driver is arsenic. Arsenic has not been associated with any past operations at the site; therefore, arsenic may be present due to background. The carcinogenic risks for Site 30 are shown in Tables D5-22 through D5-23 in Appendix D5 of this report.

The CTE risk for the child/adult resident is 2.0×10^{-6} which exceeds the FDEP target risk level.

Noncarcinogenic Risk. The RME HIs associated with surface soil ingestion and dermal contact for the construction worker and the adult resident are below the USEPA and FDEP target HI of 1.0. The RME HI for the child resident is 1.30 which exceeds unity (1.0). *However, the RME HIs are less than 1.0 for individual target organs.* The CTE HI for the child resident is 0.3. The HIs for Site 30 are shown in Tables D6-24 through D6-27 in Appendix D6 of this report.

6.5.4.2 Surface Soil: Hypothetical Future Conditions Assuming Concrete Removal

It is unlikely the concrete will be removed from Site 30. In addition, if the concrete were to be removed, it is likely clean fill would be installed to replace the concrete. Although unlikely, surface soil exposures in the absence of concrete were quantified and are presented in Appendix D9. Appendix D9 presents COPC selection, EPC values, and intake and risk calculations for Site 30.

Carcinogenic Risk. The RME cancer risk is 1.4×10^{-6} for the older child trespasser, 2.2×10^{-6} for the adult trespasser, 6.3×10^{-6} for the occupational worker, 9.6×10^{-7} for the maintenance worker, 1.2×10^{-7} for the construction worker, and 3.5×10^{-5} for the on-site resident (child/adult). The total RME cancer risk for the trespasser (child/adult) is 3.6×10^{-6}. The RME cancer risk for the maintenance worker and the construction worker are less than both the USEPA and Florida target risks. The RME cancer risk for the older child trespasser, the adult trespasser, the occupational worker, and the on-site resident (child/adult) exceed the Florida target risk of 1×10^{-6} but are within the USEPA acceptable range of 1×10^{-4} to 1×10^{-6}.

Arsenic is the carcinogenic risk driver. The CTE cancer risk is less than 1 x 10^{-6} for all receptors except the on-site resident (child/adult). The CTE cancer risk for the on-site resident (child/adult) is 1.9 x 10^{-6}.

Noncarcinogenic Risk. The RME HIs are below the USEPA and FDEP target HI of 1.0 for all receptors except the on-site child resident. The HI for the on-site child is 1.4. The CTE HI for the child resident is 0.24.

6.5.4.3 Subsurface Soil

Carcinogenic Risk. The cancer risk (RME) associated with exposure to subsurface soil (ingestion and dermal contact) for the construction worker is 1.4 x 10^{-7} which is below the USEPA acceptable risk range of 1 x 10^{-4} to 1 x 10^{-6} and below the FDEP target level of 1 x 10^{-6}. The carcinogenic risk for the construction worker is shown in Table D5-24 for Site 30.

Noncarcinogenic Risk. The RME HI for the construction worker for exposure to subsurface soils is below the USEPA and FDEP target HI of 1.0 and is shown in Table D5-25 for Site 30.

6.5.5 Site 32

6.5.5.1 Surface Soil

Carcinogenic Risk. Carcinogenic risks were not evaluated for Site 32 surface soil, since the area is covered with a thick layer of concrete and no complete pathway exists.

Noncarcinogenic Risk. HIs associated with surface soil ingestion and dermal contact were not evaluated for the reasons described above.

6.5.5.2 Surface Soil: Hypothetical Future Conditions Assuming Concrete Removal

It is unlikely the concrete will be removed from Site 32. In addition, if the concrete were to be removed, it is likely clean fill would be installed to replace the concrete. Although unlikely, surface soil exposures in the absence of concrete were quantified in Appendix D9. Appendix D9 presents COPC selection, EPC values, and intake and risk calculations for Site 32.

Carcinogenic Risk. The RME cancer risk is 7.5 x10^{-7} for the older child trespasser, 1.2 x 10^{-6} for the adult trespasser, 3.4 x 10^{-6} for the occupational worker, 5.2 x 10^{-7} for the maintenance worker, 6.5 x 10^{-8} for the construction worker, and 1.9 x 10^{-5} for the on-site resident (child/adult). The total RME cancer risk for the trespasser (older child/adult) is 2.0 x 10^{-6}. The RME cancer risk for the maintenance worker and the construction worker are less than both the USEPA and Florida target risks. The RME cancer risk for the trespasser (older child/adult), the occupational worker, and the on-site resident (child/adult) exceed the Florida target risk of 1 x 10^{-6} but are within the USEPA acceptable range of 1 x 10^{-4} to 1 x 10^{-6}. Arsenic is the carcinogenic risk driver. Arsenic has not been associated with any past operations at the site; therefore, arsenic may be present due to background. The CTE cancer risk is less than 1 x 10^{-6} for all receptors.

Noncarcinogenic Risk. The RME HIs are below the USEPA and FDEP target HI of 1.0 for all receptors.

6.5.5.3 Subsurface Soil

There are no COPCs for subsurface soil at Site 32.

6.5.6 Site 33

6.5.6.1 Surface Soil

Carcinogenic Risk. Carcinogenic risks were not evaluated for Site 33 surface soil under the current land use scenario, since the area is covered with a thick layer of concrete and no complete pathway exists.

Noncarcinogenic Risk. HIs associated with surface soil ingestion and dermal contact under the current land use scenario were not evaluated for the reasons described above.

6.5.6.2 Surface Soil: Hypothetical Future Conditions Assuming Concrete Removal

It is unlikely the concrete will be removed from Site 33. In addition, if the concrete were to be removed, it is likely clean fill would be installed to replace the concrete. Although unlikely, surface soil exposures in the absence of concrete were quantified in Appendix D9. Appendix D9 presents COPC selection, EPC values, and intake and risk calculations for Site 33.

Carcinogenic Risk. The RME cancer risk is 3.1 x10^{-6} for the older child trespasser, 4.8 x 10^{-6} for the adult trespasser, 1.4 x 10^{-5} for the occupational worker, 2.1 x 10^{-6} for the maintenance worker, 2.7 x 10^{-7} for the construction worker, and 7.8 x 10^{-5} for the on-site resident (child/adult). The total RME cancer risk for the trespasser (older child/adult) is 7.9 x 10^{-6}. The RME cancer risk for the construction worker is less than both the USEPA and Florida target risks. The RME cancer risk for the trespasser (older child/adult), the occupational worker, the maintenance worker, and the on-site resident (child/adult) exceed the Florida target risk of 1×10^{-6} but are within the USEPA acceptable range of 1×10^{-4} to 1×10^{-6}. Arsenic is the carcinogenic risk driver. Arsenic has not been associated with any past operations at the site; therefore, arsenic may be present due to background. The CTE cancer risk is less than 1×10^{-6} for all receptors except the on-site resident (child/adult). The CTE cancer risk for the on-site resident (child/adult) is 1.9×10^{-6}.

Noncarcinogenic Risk. The RME HIs are less than the USEPA and FDEP target HI of 1.0 for all receptors except the on-site child resident. The RME HI for the on-site child is 1.3. The CTE HI for the child resident is 0.18.

6.5.6.3 Subsurface Soil

Carcinogenic Risk. The cancer risk (RME) associated with exposure to subsurface soil (ingestion and dermal contact) for the construction worker is 1.7×10^{-7} which is less than the USEPA acceptable risk range of 1×10^{-4} to 1×10^{-6} and less than the FDEP target level of 1×10^{-6}. The carcinogenic risk for the construction worker is shown in Table D5-25 for Site 33.

Noncarcinogenic Risk. The HI (RME) for the construction worker for exposure to subsurface soils is below the USEPA and FDEP target HI of 1.0 and is shown in Table D6-28 for Site 33.

6.6 TOTAL PETROLEUM HYDROCARBONS

TPH data (1992 and 1993) and recent (1998) data were evaluated at Sites 3, 4, 6, 30, 32, and 33. The 1998 data were collected following the FL-PRO methodology. The FL-PRO methodology analyzes the c8 to c40 chains. The 1998 samples were "step-out" samples collected to evaluate the nature and extent of contamination. Therefore, these samples were collected at locations away from the highest previous concentrations. These concentrations would be underestimates of risk if used in the risk assessment. The historical biased samples were analyzed for TPH using USEPA Method SW418.1.

The Florida criteria for direct contact with soils is 350 mg/kg for residential soil and 2,500 mg/kg for industrial soil (FDEP, 1999). Concentrations detected in site surface soil samples were compared to the residential criteria and the site concentrations in subsurface soils were compared to the industrial criteria.

The oral reference dose for TPH was taken from the most conservative TPH reference dose presented in Table 2-9 of the GIR (ABB-ES, 1998). This reference dose of 0.03 multiplied by the gastrointestinal absorption efficiency value of 0.5 (GIR, ABB-ES, 1998) converts the oral reference dose to a dermal reference dose of 0.02. HIs were determined using these values. Carcinogenic risk could not be evaluated for any receptor since there is no cancer slope factor for TPH.

TPHs are addressed separately due to a high level of uncertainty associated with the risks attributed to TPH. Estimated TPH risks are uncertain for the following reasons:

- Recent data from the suspected source areas at most sites are not represented in the risk assessment which could cause an overestimate of risk, assuming the concentrations of TPH decreased over time through processes such as biodegradation.

- The most conservative TPH reference dose was used. It is unlikely the most conservative reference dose is applicable to all detected TPH; therefore, the HI is likely to be over estimated.

- Risks from exposure to PAHs were evaluated separately. Therefore, evaluation of risk from TPH is "double-counting" since PAHs are a subset of TPH.

6.6.1 Current Conditions

Excluding concrete-covered areas, the concentrations of TPH in surface soils at Site 6 (3,580 mg/kg), Site 30 (2,660 mg/kg), Site 32 (12,300 mg/kg), and Site 33 (2,340 mg/kg) were more than the residential criteria. These concentrations were not detected in "step-out" samples, but in the biased samples collected near suspected source areas. Since concrete covered the surface soil at Sites 32 and 33, there were no current complete exposure pathways. Therefore, only Site 6 and Site 30 were evaluated for surface soil risk under current conditions.

The concentrations of TPH in subsurface soils at Site 30 (21,200 mg/kg) and Site 33 (7,790 mg/kg) were more than the industrial criteria. The risks for the construction worker were evaluated at these two sites. The concentration of TPH in subsurface soils at Site 32 (2,310 mg/kg) were less than the industrial criteria.

The HIs at Site 6 from exposure to TPH in surface soil are less than 1.0 for the older child trespasser (0.06), the adult trespasser (0.04), the occupational worker (0.10), the site maintenance worker (0.01), the construction worker (0.08) and the adult resident (0.31). Therefore, no adverse noncarcinogenic effects would be expected to occur from exposure to surface soil at Site 6 for these receptors. The HI of 1.7 (RME) for the child resident is more than 1.0, but the CTE risk (0.6) is not. TPH was not a COPC in subsurface soil at Site 6.

The RME HIs at Site 30 from exposure to TPH in surface soil in the grass area are less than 1.0 for the construction worker (0.06) and the resident adult (0.23). The RME HI for surface soil exposure for the resident child (1.3) is more than unity (1.0), but the CTE HI for this receptor (0.44) is less than 1.0. The RME HI at Site 30 from exposure to TPH in subsurface soil is 0.47 for the construction worker.

For the construction worker, the RME HI from exposure to TPH in subsurface soil at Site 33 (0.17) is less than 1.0.

6.6.2 Hypothetical Future Conditions Assuming Concrete Removal at Sites 30, 32, and 33

Although it is unlikely the concrete will be removed in the future from Sites 30, 32, and 33, TPH exposures for Sites 30, 32, and 33 are quantified in Appendix D9 assuming future concrete removal. The RME HIs for the adult trespasser, older child trespasser, site maintenance worker, occupational worker, and construction worker are all less than 1.0 at Sites 30, 32 and 33. The RME HI for the child resident is 4.7 at Site 30, 6.0 at Site 32, and 1.1 at Site 33; the CTE risk for this receptor is 1.6 at Site 30, 1.9 at Site 32, and 0.38 at Site 33. The RME HI for the adult resident is less than 1.0 at Sites 30 and 33, but greater than 1.0 (1.1) at Site 32. The CTE HI for the adult resident is 0.24 at Site 32. The child residents at Sites 30 and 32 are the only receptors with HIs greater than 1.0 for both the RME and CTE calculation.

6.7 IRON

The reference dose currently available for iron is a provisional value provided by USEPA's Environmental Criteria and Assessment Office and published in the USEPA Region III Risk-Based Concentration table. USEPA Region IV does not advocate its use in quantitative risk assessment because the reference dose is based on exposure to iron in beer that had been brewed in iron vessels (Simon, 1997b). For purposes of completeness an assessment of iron is included in this BRA; however, risk estimates based on the ECAO value are highly uncertain and should not be used to make remedial decisions. Two future conditions were considered for iron exposure:

- Current Conditions - The concrete and asphalt paving remains in place at Sites 30, 32, and 33. Exposure to surface soils does not occur in these paved areas.. Section 6.71 summarizes the iron risk associated with this scenario.

- Future Conditions – Removal of the concrete and asphalt paving from Sites 30, 32, and 33. No clean fill or replacement concrete is placed, and exposure may occur to surface soils up to 4 feet below the current concrete covering. Section 6.7.2 summarizes the iron risk associated with this scenario.

6.7.1 Current Conditions

Under current conditions with the concrete and asphalt paving intact at Sites 30, 32, and 33, iron concentration is greater than screening levels in surface soils at Sites 3, 4, 6, and 30 (grass area). Except for the child resident at Site 30, RME iron risk for each receptor at each of the four sites is less than 1.0. The RME iron risk for the child resident receptor at Site 30 is 1.1, but the CTE iron risk for this receptor is less than 1.0 (0.26).

6.7.2 Hypothetical Future Conditions Assuming Concrete Removal at Sites 30, 32, and 33

Removal of the concrete and asphalt pavement is assumed for the future condition at Sites 30, 32, and 33. No clean fill or replacement concrete is placed in this scenario. Iron risk was calculated for these sites using soil samples collected up to 4 feet below the current concrete surface. The concrete is approximately 2 feet thick. Iron concentration is greater than screening levels in surface soils at Sites 30, 32, and 33. The RME iron risk for each receptor at Sites 30, 32, and 33 in the absence of concrete is less than 1.0, except for the child resident at Site 30. At Site 30, the child resident RME HI is 1.1, while the child resident CTE HI is 0.21.

6.8 UNCERTAINTY ANALYSIS

General uncertainties associated with the collection, analysis, and evaluation of data; exposure assessment; toxicity assessment; and the risk estimation process are discussed in Paragraph 2.5.5.1 of the GIR (ABB-ES, 1998). Site-specific uncertainties that are important for the interpretation of the calculated risk estimates for surface soil and subsurface soil at Sites 3, 4, 6, 30, 32, and 33 are discussed below.

- According to the GIR, if one carcinogenic PAH is selected as a COPC, all carcinogenic PAHs are selected as COPCs. Therefore, all carcinogenic PAHs were evaluated for Site 4 subsurface soil and Site 6 surface soil. This may result in an overestimation of risk.

- The primary contributor to carcinogenic risk from surface and subsurface soil for all receptors is arsenic. Arsenic has not been associated with any past operations at the site; therefore, arsenic may be present due to background.

  Although the more restrictive basis for evaluating risk associated with exposure to arsenic is to assume it is a carcinogen, carcinogenic effects are not the primary health effects expected to be manifested upon exposure to arsenic. The preponderance of scientific information indicates that humans are capable of metabolizing arsenic to expedite its elimination from the body (ATSDR, 1988). Its elimination from the body obviously mitigates the possibility for arsenic to manifest carcinogenic effects. Therefore, evaluating arsenic as a noncarcinogen would be more appropriate.

  Specifically, the body methylates the arsenic to form monomethyl arsenic and dimethyl arsenic. There is a limited capacity for the body to methylate arsenic, but this limit is generally reached when the body's intake of arsenic exceeds approximately 500 μg/day. The maximum detected concentration of arsenic at the sites is 16 mg/kg. Assuming a soil ingestion rate of 50 mg/day, exposure to this concentration corresponds to an approximate intake of 0.80 μg/day. This concentration results in an intake well within the body's ability to metabolize arsenic. Although some humans may be more sensitive to arsenic, because they are "poor methylators," the maximum exposure concentration for the sites is more than 2 orders of magnitude below the normal limit of metabolic saturation and is most likely below levels which would trigger responses in sensitive individuals (ATSDR, 1988).

- Both arsenic and dieldrin may be present at NAS Whiting Field due to anthropogenic sources (i.e., agricultural use of pesticides). In addition, arsenic is naturally occurring and the concentrations observed at Sites 3, 4, 6, 30, 32, and 33 may well be naturally occurring background since arsenic has not been associated with past operations at any of the sites.

- Calculations to evaluate dermal pathways are likely to overpredict dermal risk. In some cases dermal risk is more than ingestion risk. New USEPA dermal guidance is expected to address this problem.

- According to the methodology described in the GIR (ABB-ES, 1998) (Paragraph 2.5.3.3), if the RME carcinogenic risk to a receptor exceeds the Florida levels of concern of 10^{-6}, the CTE risk is evaluated for that receptor. Similarly, if the RME noncarcinogenic risk to a receptor exceeds the

Florida risk level of 1.0, the CTE risk is evaluated for that receptor. According to the methodology described in Paragraph 2.5.3.3 of the GIR (ABB-ES, 1998), the central tendency evaluation coupled with the 95% Upper Confidence Limit (UCL) (N>10) and the mean concentration (N<10) and reasonable but less conservative exposure parameters is designed to provide a probable risk level (USEPA, 1995). The central tendency parameters differ from the RME scenario by using the 95% UCL (N>10) or mean concentration (N<10) of all samples and a 50 percentile ingestion rate, dermal surface area, exposure frequency, and exposure duration. The risk range of 1×10^{-5} to 1×10^{-6} presented by the RME and CTE scenarios for potential future residential receptors is useful as information to provide perspective for risk management and compliance with USEPA guidance (USEPA, 1995).

- Sites 30, 32, and 33 were evaluated both for current conditions and in the unlikely future scenario where existing concrete is removed. Due to the highly industrialized nature (airfield hangars) of these sites, it is very unlikely the concrete at these sites would be removed without being replaced with new concrete. Also, due to the flat topography of the areas, if the concrete is removed, the excavation would have to be backfilled with soil or other material to provide positive drainage. The risk results calculated assuming the absence of concrete are therefore highly unrealistic.

- The lack of toxicity data for TRPH may result in an overestimate of the noncancer risk. The TRPH chain with the most conservative reference dose was selected as a conservative surrogate. Because it is unlikely the most conservative reference dose is applicable to all of the TRPH detected, the HI is likely to be overestimated.

- Calculated iron risk is highly uncertain due to the lack of a proper reference dose for iron. The reference does currently available for iron is a provisional value provided by USEPA's ECAO and published in the USEPA Region III Risk-Based Concentration table. USEPA Region IV does not advocate its use in quantitiative risk assessment because the reference dose is based on exposure to iron in beer that had been brewed in iron vessels (Simon, 1997b). For purposes of completeness an assessment of iron is included in this BRA; however, risk estimates based on the ECAO value are highly uncertain and should not be used to make remedial decisions.

6.9 SUMMARY AND CONCLUSIONS

COPCs were identified and risks were estimated for surface soil associated with Sites 3, 4, 6, and the small grass-covered area of Site 30. There were no current complete exposure pathways for surface soil at Sites

32 and 33 because these sites are covered by concrete. COPCs were identified and risks were estimated for subsurface soil associated with Sites 3, 4, 30, and 33. No COPCs were identified for subsurface soils at Sites 6 and 32. A scenario assuming concrete removal at Sites 30, 32, and 33 was also evaluated.

Tables 6-25 through 6-30 summarize carcinogenic risks and HIs for each site assuming the concrete remains in place at Sites 30, 32, and 33. Tables 6-31 through 6-33 summarize cancer risks and HIs for surface soils at Sites 30, 32, and 33 under the hypothetical future condition in which concrete is removed from these sites.

The following conclusions were drawn based on this HHRA.

6.9.1 Current Conditions

- Cancer risk estimates developed for receptors exposed to COPCs in surface and subsurface soils are less than the USEPA target risk range of 10^{-6} to 10^{-4} when the RME case is evaluated.
- Cancer risk estimates for COPCs in surface soil are greater than the State of Florida risk benchmark of 10^{-6} when the RME case is evaluated for all receptors except the construction worker and the site maintenance worker. The primary carcinogenic risk driver at all sites, for all receptors, is arsenic. However, the uncertainty associated with the calculation of risk attributed to arsenic suggests these risks are overestimated. In addition, arsenic has not been associated with any past operations at the site; therefore, arsenic may be present due to background. The CTE case risk was acceptable for all receptors except the on-site resident at all sites and the occupational worker at Site 6.
- Dieldrin is a carcinogenic risk driver at Site 4 for the resident. Dieldrin has not been associated with any past operations at the site and may reflect historical pesticide applications, such as fire ant control. At Site 6, carcinogenic risk for the resident is driven by benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and Aroclor-1260, in addition to arsenic. Benzo(a)pyrene and arsenic are the risk drivers for the occupational worker at Site 6.
- His for COPCs in surface soil and subsurface soil are less than the USEPA and State of Florida target benchmark of less than 1.0 for the older child trespasser, the adult trespasser, the occupational worker, the site maintenance worker, the construction worker, and the adult resident. Additionally, the child resident at Site 4 has a noncarcinogenic risk of less than 1.0. No adverse

health effects would be expected to occur to these receptors from exposure to surface and subsurface soils.

- HIs are only marginally more than unity (1.0) for the residential RME child at Sites 3 (HI = 1.0), 6 (HI = 1.1), and 30 (HI = 1.3). The HIs developed on a target organ specific basis are not more than unity. This indicates adverse noncarcinogenic effects would not be expected to occur from exposure to surface soils for the child resident.

- TPH is an HI driver at Sites 6 and 30 for the child resident. The RME HIs at Sites 6 and 30 (1.7 and 1.3, respectively) are more than unity (1.0), but the CTE HIs at each site (0.59 and 0.44, respectively) are not more than unity. For all other receptors and sites where TPH exceeded screening criteria, the TPH HI is not more than unity.

- Iron is an HI driver at Site 30 for the resident child receptor. The iron RME HI for the resident child receptor at Site 30 is more than unity (1.1), but the iron CTE HI (0.26) is not more than unity. For all other receptors and sites where iron is more than screening criteria, the iron HI is not more than unity. The HI estimates developed for iron should be evaluated carefully due to the uncertainty associated with the iron reference dose.

6.9.2 Hypothetical Future Conditions Assuming Concrete Removal at Sites 30, 32, and 33

Although it is unlikely the concrete will be removed from Sites 30, 32, and 33 in the future, exposure to surface soils under this scenario was evaluated. The following conclusions were drawn based on this scenario.

- Cancer risk estimates developed for receptors exposed to COPCs in surface soils at Site 30 are not more than the USEPA target risk range of 10^{-4} to 10^{-6} when the RME case is evaluated.

- Cancer risk estimates developed for the trespasser (older child/adult), the occupational worker, and the on-site resident exposed to COPCs in surface soils at Site 30 are more than the State of Florida risk benchmark of 10^{-6} when the RME case is evaluated. The CTE carcinogenic risk is acceptable for all Site 30 receptors except the on-site resident (child/adult). HIs for Site 30 receptors are all less than 1.0 under the RME scenario, except for the on-site child resident. The on-site child resident HI was 1.4 for the RME case, but 0.2 for the CTE case. The HIs developed on a target organ specific basis are less than unity.

- Cancer risk estimates developed for the adult trespasser, occupational worker, and on-site resident exposed to COPCs in surface soils are more than the State of Florida risk benchmark when the RME case is evaluated. The CTE carcinogenic risk was acceptable for all Site 32 receptors. HIs for all Site 32 receptors are less than 1.0 for the RME case.

- The cancer risk estimates developed for all Site 33 receptors except the construction worker are more than the State of Florida carcinogenic risk benchmark of 10^{-6} when the RME case is evaluated. The CTE carcinogenic risk is acceptable for all Site 33 receptors except the on-site resident (child/adult). HIs for Site 33 receptors were all less than 1.0 under the RME scenario, except for the on-site child resident. The on-site child resident HI was 1.27 for the RME case, but 0.18 for the CTE case. However, HIs calculated on a target organ specific basis for the on-site child resident are less than unity. Consequently, adverse noncarcinogenic health effects are not anticipated under the conditions established in the exposure assessment.

- Arsenic is the carcinogenic risk driver for Sites 30, 32, and 33.

- TPH is an HI driver for the child resident at Sites 30, 32, and 33 and for the adult resident at Site 32. The RME HI for the child receptor was 4.7 at Site 30, 6.0 at Site 32, and 1.1 at Site 33; the CTE HI for this receptor was 1.6 at Site 30, 1.9 at Site 32, and 0.38 at Site 33. The RME HI for the adult resident was 1.1 at Site 32, but the CTE HI for the receptor was 0.24. For all other receptors at Sites 30, 32, and 33, the TPH HI is less than unity.

- Iron is an HI driver at Site 30 for the resident child receptor. The RME iron risk for the resident child receptor at Site 30 is more than unity (1.9), but the CTE resident iron risk (0.37) is less than unity. For all other receptors and sites where iron is more than screening criteria, the iron HI is less than unity. Iron risks are highly uncertain due to the uncertainty associated with the iron reference dose.

7.0 ECOLOGICAL RISK ASSESSMENT

In addition to characterizing the nature and extent of site contamination and assessing potential risks to human health, the RI process requires an assessment of the potential adverse effects of site contamination on the environment. Specifically, ecological receptors that inhabit Sites 3, 4, 6, 30, 32, and 33 and nearby areas may be at risk from environmental contamination associated with these sites. Accordingly, an ERA was performed to characterize the potential risks to ecological receptors from contaminants at Sites 3, 4, 6, 30, 32, and 33.

7.1 OVERVIEW

This section provides an outline of the general approach taken to assess the impacts of site contamination on ecological receptors and the habitats supporting these organisms. This assessment generally followed a two-step process:

Step 1: Preliminary Problem Formulation (Section 7.2) and Preliminary Ecological Effects Evaluation (Section 7.3).

- Preliminary Problem Formulation - This is the first phase of an ERA, which discusses the goals, breadth, and focus of the assessment. It includes general descriptions of the sites to be investigated (Sites 3, 4, 6, 30, 32, and 33) with emphasis on the habitats and ecological receptors present. This phase also involves characterization of contaminant sources and migration pathways, evaluation of routes of contaminant exposure, and selection of analytes to be assessed. Assessment and measurement endpoints are also selected in this phase. Finally, a conceptual model is developed describing how contaminants associated with Sites 3, 4, 6, 30, 32, and 33 may come into contact with ecological receptors.

- Preliminary Ecological Effects Evaluation - In this phase, medium-specific ecological screening guidelines for each analyte (i.e., concentrations of each contaminant above which adverse effects to ecological receptors may occur) are identified. Contaminant doses associated with toxicity to representative ecological receptors are also identified. This step is undertaken concurrently with the exposure assessment described below.

Step 2: Preliminary Exposure Estimate (Section 7.4) and Preliminary Risk Calculation (Section 7.5).

- Preliminary Exposure Estimate - This portion of the ERA includes the identification of data sources containing concentrations of contaminants to which ecological receptors may be exposed in various media. It also includes the selection of exposure point contaminant concentrations from those data. Contaminant doses for representative receptors are also calculated.

- Preliminary Risk Calculation - In this step, exposure point concentrations are compared to guidelines to characterize potential risk to ecological receptors. Contaminant doses associated with toxicity are compared to calculated doses for representative receptors. Analytes found to pose potential risk after these comparisons are selected as ecological COPCs.

When these two steps are completed, the results can be interpreted and the uncertainties associated with the ERA can be addressed. The above process, described in further detail below, represents the general ERA approach recommended in the most recent USEPA guidance for performing ERAs (USEPA, 1997b), which served as the basis for the ERA methodology. Furthermore, the ERA was conducted in accordance with other available ERA guidance documents (DON, 1999; USEPA, 1998b,c; Wentsel et al., 1996).

Due to the potential complexity of ERAs, they are often conducted using a tiered approach and punctuated with Scientific/Management Decision Points (SMDPs). SMDPs are meetings involving the risk assessors, risk managers, and client to control costs, prevent unnecessary analyses, and ensure the ERA is proceeding in an efficient, timely manner. Information analyzed in one tier is evaluated to determine whether the objectives of the study have been met, and then it may be used to identify the data required for the next tier, if necessary. The first two steps in this ERA can be considered a "screening-level" assessment since they are based on comparing contaminant concentrations to conservative screening levels.

A baseline ERA (BERA) may be conducted if the results of the screening-level ERA indicate additional study is warranted. The BERA includes more focused studies incorporating the initial screening, but it may also encompass detailed laboratory and field studies or extensive modeling (USEPA, 1997b). The beginning of the BERA also presents a more balanced evaluation of the conservativeness inherent in the first two steps in the process (DON, 1999).

7.2 PRELIMINARY PROBLEM FORMULATION

7.2.1 Habitat Types and Ecological Receptors

Site 4 is the North AVGAS Tanks Sludge Disposal Area located on the southeastern side of the North Field (Figure 1-3). The site includes the former location of the underground AVGAS tanks as well as areas adjacent to the tanks where tank bottom sludge was disposed in shallow holes. The site is covered with mowed turfgrass, with some paved and graveled areas in the western portion of the site. Heavily developed areas are located to the west and south. The areas to the north and east are comprised of taxiways and runways, with mowed turfgrass in between those areas. No trees or weedy vegetation are present.

Runoff from the site flows primarily to the east since the turfgrass area slopes gently in that direction. A small, shallow drainage depression is located at the bottom of the slope. Runoff eventually drains to Big Coldwater Creek approximately 5 miles east of the site. Since the site is almost completely covered with mowed turfgrass, use of the site by terrestrial receptors would be minimal. In addition, small propeller plane traffic is present on the adjacent taxiways and runways on a regular and frequent basis. As a result, the area is characterized by loud noise, which would deter some types of terrestrial wildlife from using the turfgrass area. No rare, threatened, or endangered species are located on or near the site (Lassiter, 1998).

Site 32 is the area around the North Hangar, Building 1424, located on the southern side of the North Field (Figure 1-3). The site includes the former location of waste oil tanks and a wash rack used to clean aircraft. The area east of the site is entirely developed. The adjacent areas to the north, west, and south are covered with concrete and asphalt. The area adjacent to the northern portion of the site is comprised of runways and taxiways, with mowed turfgrass in between those areas. The area west of the site is comprised of a large, paved aircraft parking area extending several hundred feet west of the building.

A small area of mowed turfgrass is located south of Building 2941 and east of the North Field apron. This area is Site 3, the previous location of the underground waste solvent storage tank (Figure 1-3). A small storage building is located adjacent to the site. A large storm drain is located on the site, which collects runoff from the southern portion of the North Hangar area. Mowed turfgrass continues for several hundred feet south of the site. A small drainage depression is located in this area, originating approximately 100 feet south of Site 3. Also, an ornamental stand of pines is located in the mowed turfgrass about 200 feet southeast of Site 3. Runoff from Sites 3 and 32 eventually drains to Big Coldwater Creek approximately 5.5 miles east of the sites.

Since the two sites are almost completely developed with only a small vegetated area present (the turfgrass areas), use of the sites by terrestrial receptors would be negligible. In addition, propeller plane traffic is heavy on and adjacent to the sites. As a result, the area is characterized by loud noise, which would deter some types of terrestrial wildlife from using the turfgrass areas. No rare, threatened, or endangered species are located on or near the sites (Lassiter, 1998).

Sites 6 and 33 are located adjacent to each other in the Midfield Hangar area (Figure 1-4). Site 33 is the area around the Midfield Hangar, Building 1454, located on the southern side of the North Field. This site includes the former location of waste oil tanks. The site is covered with asphalt and concrete. Mowed turfgrass is located adjacent to the paved areas north and south of the building. A few loblolly pines are located in the mowed turfgrass north of the site and a thick, isolated stand of pines is located behind a chain link fence in the southern portion of the site. The area east of the site is comprised of runways and taxiways, with mowed turfgrass between those areas.

Site 6 is a small portion (50 by 100 feet) of the mowed turfgrass area adjacent to the paved area southeast of the site. A small drainage depression collecting runoff from the area south of the building runs through Site 6 and connects with another small drainage depression southeast of the site. Runoff then flows through culverts under the runways and taxiways and eventually discharges to Big Coldwater Creek approximately 4 miles east of Site 6. Water is present in the depressions only after periods of heavy rainfall. No aquatic vegetation or aquatic community is present.

Since the two sites are almost completely developed with only a small vegetated area present (the turfgrass areas), use of the site by terrestrial receptors would be negligible. In addition, helicopters are parked adjacent to the turfgrass, and helicopter take-offs and landings are made in this area on a regular and frequent basis. As a result, the area is characterized by loud noise, which would deter some types of terrestrial wildlife from using the turfgrass area. No rare, threatened, or endangered species are located on or near the sites (Lassiter, 1998).

Site 30 is the area around the South Hangar, Building 1406, located on the northern side of South Field (Figure 1-5). This site includes the former location of waste oil tanks and a wash rack used to clean aircraft. The site is covered with asphalt and concrete. Mowed turfgrass is located adjacent to the concrete area west of the building. A small portion of the turfgrass (30 by 60 feet) is considered to be part of Site 30. No trees are present on or near the site. Helicopter maintenance carts and other equipment are stored on a portion of the turfgrass area. A small drainage depression is located in the turfgrass area, emptying into a storm drain on the northwest portion of the site. Water is present in the depression only after periods of heavy rainfall. No aquatic vegetation or aquatic community is present. Runoff from the area eventually flows to Clear Creek approximately 1 mile southwest of Site 30 via concrete and earthen ditches.

Since the site is almost completely developed with only a small vegetated area present (the turfgrass area), use of the site by terrestrial receptors would be negligible. In addition, helicopters are parked adjacent to the turfgrass, and helicopter take-offs and landings are made in this area on a regular and frequent basis. As a result, the area is characterized by loud noise, which would deter some types of terrestrial wildlife from using the turfgrass area. No rare, threatened, or endangered species are located on or near the site (Lassiter, 1998).

7.2.2 Major Contaminant Sources and Migration Pathways

The contaminant sources at Sites 3, 4, 6, 30, 32, and 33 are similar. They include former waste oil tank sites and wash racks. In addition, the contaminant migration pathways are also similar. As a result, they are discussed for all sites in this section. The contaminant migration pathways evaluated for Sites 3, 4, 6, 30, 32, and 33 include volatilization, wind erosion, overland runoff, and infiltration of contaminants. Constituents in the site soil may volatilize from surficial material or become airborne via resuspension. Contaminated fugitive dust may also be generated during ground-disturbing activities, such as construction or excavation. These contaminants are dispersed in the surrounding environment and transported to downwind locations where they may become entrained in surface soil through precipitation and deposition. Contaminants would not be dispersed to surface water or sediment since no aquatic habitat is located on or near the sites.

Runoff may occur to drainage depressions on and near the sites. Since no surface water is present on any of the sites and the nearest surface water (Clear Creek and Big Coldwater Creek) is relatively distant from the sites (several thousand feet), the runoff migration pathway is not significant. Infiltrating precipitation may cause the contamination of subsurface soil and groundwater. Groundwater from the site may discharge to surface water; contaminants in groundwater may be subsequently deposited in sediment; or they may accumulate in the tissues of aquatic organisms. However, no surface water is present on any of the sites investigated in this ERA that could receive groundwater discharge, and groundwater at the sites is approximately 80-100 feet bgs.

7.2.3 Exposure Routes

Terrestrial animals at the sites may be exposed to soil contaminants through ingestion of contaminated food items. Animals can incidentally ingest soil while grooming fur, preening feathers, digging, grazing close to the soil, or feeding on items to which soil has adhered (such as roots and tubers). Terrestrial vegetation may be exposed to contaminants via direct aerial deposition and root translocation. Aerial deposition was not investigated, primarily because the contaminant sources at the sites under investigation are largely covered by vegetation, reducing the amount of bare soil and fugitive dust. No surface water is present on or near the sites. Therefore, exposure to contaminants in drinking water will not occur. Exposure to contaminants in the soil via dermal contact may occur, but is unlikely to represent a major exposure pathway because fur, feathers, and chitinous exoskeletons probably minimize transfer of contaminants across dermal tissue (Simon, 1997a). Soil trapped in the fur or feathers could be ingested during grooming or preening activities, which are evaluated as part of the indirect ingestion exposure route. In addition, little information is available (e.g., absorption factors) to evaluate dermal exposures to wildlife.

Volatile constituents are present in some site soils, soil-bound contaminant resuspension may occur, and combustion may release contaminants into the air at some sites. However, inhalation does not represent a significant exposure pathway because air contaminant concentrations are assumed to be quite low, even for burrowing wildlife. The inhalation exposure route is generally only relevant after a spill of a volatile chemical. The sites are primarily covered with concrete, asphalt, and mowed turfgrass; no evidence of burrows or burrowing wildlife was present in the turfgrass areas during a Spring 1998 site visit by Tetra Tech NUS personnel. In addition, inhalation ecotoxicity data for chronic exposure are lacking. Hence, the air pathway was not considered for ecological receptors. Since no aquatic habitat is present on or near the sites, aquatic exposure was not investigated.

7.2.4 Selection of Analytes to be Investigated

Analytes initially included in the ERA for quantitative analysis were all contaminants detected in surface soil samples collected during 1992, 1993, 1996, and 1998 sampling events. Calcium, magnesium, potassium, and sodium were excluded as analytes to be investigated since they are essential nutrients that are toxic only in extremely high concentrations. Due to the scarcity of data for these essential nutrients, it was not possible to develop ranges of toxicity for them, even at high concentrations. The limited toxicity data available indicate high dietary intake of these nutrients is well tolerated. The rationale for excluding essential nutrients from consideration as analytes to be investigated is presented in the General Information Report for the base (ABB-ES, 1998).

Background data used in this ERA were base-specific background data presented in the General Information Report (ABB-ES, 1998). These data are discussed also in Section 6.2 or this RI report. Background data collected in NAS Whiting Field soils, similar in type to soils on the six sites being evaluated, were used in this ERA. However, background data were not evaluated as part of Steps 1 and 2 in the ERA process. Rather, they were evaluated later in the ERA process (Section 7.6), in accordance with USEPA guidance (USEPA, 1998b).

Environmental and QC samples were collected and analyzed at an off-site laboratory using CLP methodology for analysis of VOCs, SVOCs, pesticides, PCBs, TPH, metals, and cyanide. GC and/or mass spectroscopy methods were used for analysis of VOCs by Method 8240, SVOCs by Method 8270, and organochlorine pesticides/PCBs by Method 8080. Inorganic analytes were analyzed by inductively coupled plasma, graphite furnace atomic absorption, or cold vapor atomic absorption, as appropriate (e.g., Methods 6010, 7420, or 7470). Cyanide analyses were performed using Method 9010 and TPH analyses were performed using Florida Pro or Method 418.1. The laboratory analytical program is described in more detail in Section 2.2 of the NAS Whiting Field GIR (ABB-ES, 1998).

7.2.5 Assessment and Measurement Endpoints

As discussed in USEPA (1997b) and Wentsel et al. (1996), one of the major tasks in preliminary problem formulation is the selection of assessment and measurement endpoints. An assessment endpoint is defined as "an explicit expression of actual environmental values that are to be protected" (USEPA, 1997b). Measurement endpoints are "measurable ecological characteristics that are related to the valued characteristic chosen as the assessment endpoint" (USEPA, 1997b). For this ERA, the assessment endpoints are protection of the following groups of receptors from adverse effects of contaminants on their growth, survival, and reproduction:

- Birds feeding on terrestrial invertebrates and plants
- Carnivorous birds
- Carnivorous mammals
- Omnivorous mammals
- Mammals feeding on soil invertebrates
- Herbivorous mammals
- Terrestrial vegetation
- Amphibians and reptiles

As indicated above, measurement endpoints are related to assessment endpoints, but the measurement endpoints are more easily quantified or observed. In essence, measurement endpoints serve as surrogates for assessment endpoints. While declines in populations and shifts in community structure can be quantified, studies of this nature are generally time-consuming and difficult to interpret. However, measurement endpoints indicative of observed adverse effects on individuals are relatively easy to measure in toxicity studies and can be related to the assessment endpoint. For example, contaminant concentrations leading to decreased reproductive success or increased mortality of individuals in toxicity tests could, if found in the environment, result in shifts in population structure, potentially altering the communities on and near Sites 3, 4, 6, 30, 32, and 33 (Table 7-1).

Again, aquatic and benthic communities are not present on or near the site. For surface soils, the only medium of concern, the measurement endpoints were contaminant concentrations in surface soil associated with adverse effects on growth, survival, and reproduction of terrestrial vegetation and soil invertebrates (surface soil screening levels). For terrestrial wildlife, the measurement endpoints were the contaminant doses associated with adverse effects on growth, survival, and reproduction of these receptors [toxicity reference values (TRVs)]. The measurement endpoints listed above and presented in Table 7-1 incorporate, to the fullest extent possible, the groups of receptors listed in the assessment endpoints.

TABLE 7-1
ASSESSMENT AND MEASUREMENT ENDPOINTS
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Medium	Receptor	Assessment Endpoint	Measurement Endpoint
Surface Soil	Terrestrial wildlife	Maintenance of wildlife populations and communities.	Contaminant doses associated with adverse effects on growth, reproduction, or survival of mammalian or avian laboratory test populations.
Surface Soil	Terrestrial invertebrates	Maintenance of terrestrial invertebrate populations and communities.	Contaminant concentrations in soils associated with adverse effects on growth, reproduction, or survival of terrestrial invertebrates.
Surface Soil	Terrestrial plants	Maintenance of plant populations and communities.	Contaminant concentrations in soils associated with adverse effects on growth, reproduction, or survival of plants.

7.2.6 Conceptual Site Model

The conceptual model is designed to diagrammatically identify potentially exposed receptor populations and applicable exposure pathways, based on the physical nature of the site and the potential contaminant source areas. Actual or potential exposures of ecological receptors associated with the sites assessed in this ERA were determined by identifying the most likely pathways of contaminant release and transport. A complete exposure pathway has three components: a source of contaminants that can be released to the environment, a route of contaminant transport through an environmental medium, and an exposure route or contact point for an ecological receptor. The conceptual models for the six sites are identical. A preliminary conceptual model for all sites combined is presented in Figure 7-1. The dermal route (direct contact) and inhalation exposure routes are included in the conceptual model since they are theoretically possible, but, as mentioned earlier, they were not investigated quantitatively.

7.3 PRELIMINARY ECOLOGICAL EFFECTS EVALUATION

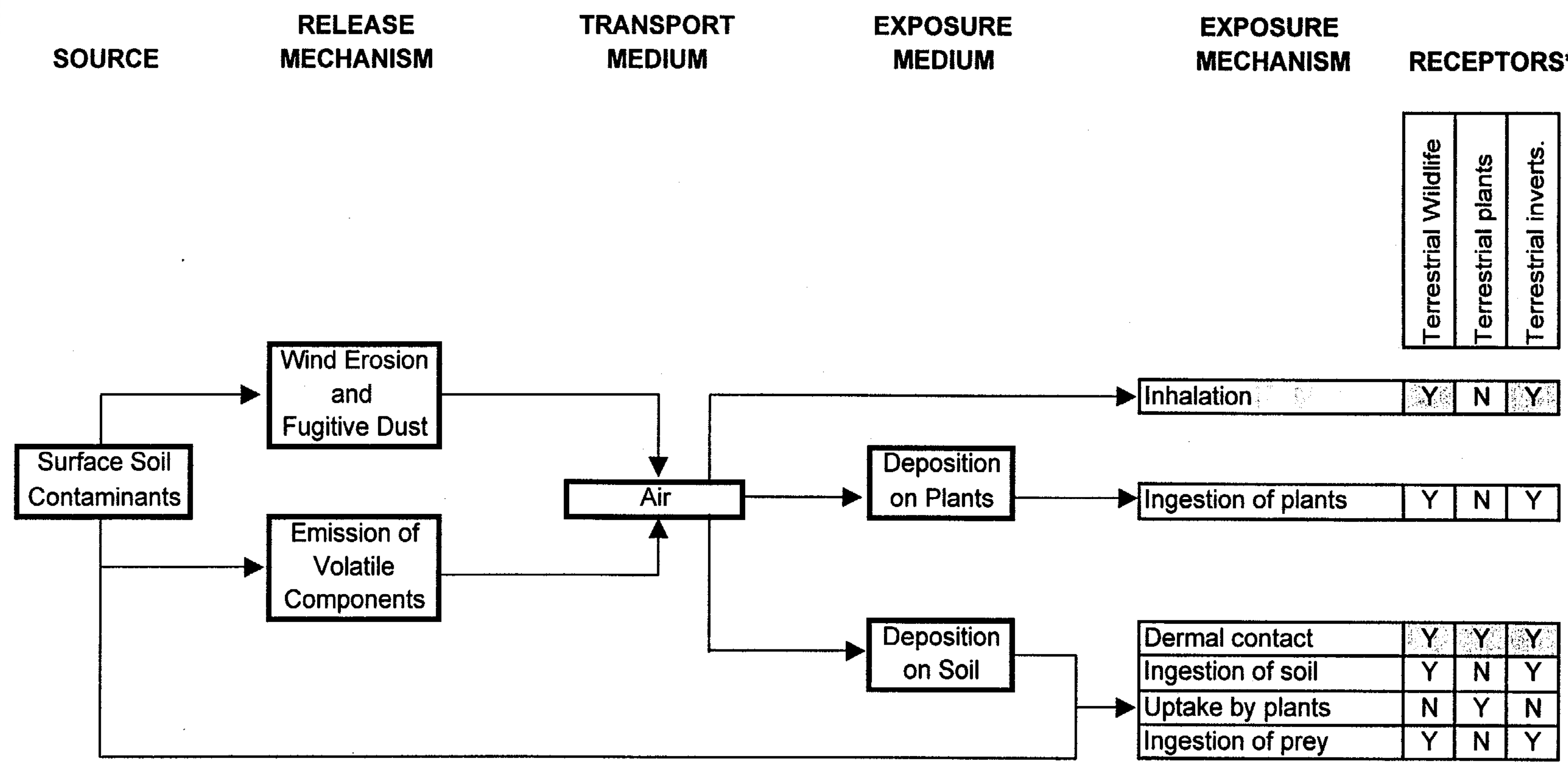
For this ERA, exposure point concentrations of detected analytes in surface soil were compared to ecologically based guidelines to determine if they should be selected as COPCs. In addition, toxic doses of contaminants were compared to modeled doses for representative receptors. The methods used for screening level selection and TRV selection are discussed in detail below.

7.3.1 Soil Screening Levels

USEPA Region IV has recently promulgated their own surface soil guidelines (1998b). These surface soil screening levels were compiled by Friday (1998). They consist of values issued by Beyer (1990), Oak Ridge National Laboratory (ORNL) (Efroymson et al., 1997 a,b), the Netherlands (MHSP&E, 1994), Crommentuijn et al. (1997), and the Canadian Council of Ministers of the Environment (CCME, 1997). USEPA Region IV-recommended screening levels are generally the lowest value from among the above sources.

After discussions with USEPA Region IV, it was determined the screening level for benzo(a)pyrene would be used as a surrogate for high molecular weight polyaromatic hydrocarbons (PAHs) when screening levels were not available for those compounds, and the screening level for diethylhexylphthalate (DEHP) would be used when screening levels were not available for some phthalates. Moreover, when screening levels were available for different species of the same metal, the screening level for the most toxic form was used, including those for hexavalent chromium, trivalent arsenic, methyl mercury, and tributyl-tin.

FIGURE 7-1
ECOLOGICAL CONCEPTUAL SITE MODEL
NAS WHITING FIELD, MILTON, FLORIDA



Y = Yes, complete exposure route
N = No, incomplete exposure route
* Shading indicates exposure route qualitatively assessed

7.3.2 Toxicity Reference Values

Modeling of contaminant exposure through the food chain was performed to investigate potential risks to terrestrial wildlife. For estimating potential risks to representative receptors, TRVs for individual receptors were obtained for comparison to doses of chemicals the receptors may receive in the environment. TRVs were preferentially identified representing a threshold for sub-lethal effects. Sub-lethal effects are defined as those based on the measurement endpoint, which is impairment of reproduction, growth, or survival. TRVs were obtained separately for each type of receptor (e.g., avian carnivore) as discussed below.

Since, in general, toxicity data for the specific receptors chosen were not available, toxicity data from laboratory species were extrapolated to receptor species. Most of the toxicity data were obtained from ORNL wildlife toxicity data (Sample et al., 1996). Several other sources of toxicity data were consulted, including the Integrated Risk Information System (IRIS) and the Agency for Toxic Substances and Disease Registry (ATSDR) toxicity profiles. No observed adverse effects levels (NOAELs) were preferentially used. Lowest observed adverse effects levels (LOAELs) were also used in the models, but are discussed later in the ERA process (Section 7.6). As specified in USEPA Region IV guidance, LOAELs were divided by a factor of 10 to obtain NOAELs if NOAELs were not available for a contaminant. Following discussions with USEPA Region IV, VOCs were not included in food chain modeling. Analytes with log K_{ow} values less than 3.5 (VOCs) generally do not accumulate in animal tissue (Suter, 1993). TRVs used in this ERA and their sources are presented in Tables 7-2 (mammals) and 7-3 (birds).

Species used in the food chain modeling were chosen to represent the groups of receptors most likely to be exposed to the highest contaminant concentrations because of their position in the food web, diet (ingestion rate and food type), home range (contained within the area of contamination), and body size. The species selected were assumed to be representative of other species within the same trophic group or guild. Also, the socio-cultural nature of the receptor species (e.g., threatened or endangered species) was also considered. For each of the representative species, information on life history was collected including diet, body weight, food ingestion rates, and soil ingestion rates. The receptors were selected to be representative of the groups of organisms specified as the assessment endpoints. They also represent receptors potentially found on mowed turfgrass areas.

For conservativeness, the site foraging frequency (SSF) was assumed to be 100 percent (or 1.0 in the model). The SSF is a measure of the acreage of the site relative to the receptor's home range or territory. A discussion of how the SSF and time spent on the site during the year affects the final risk numbers for the food chain modeling is provided in Section 7.6 and in the uncertainties section of the ERA (Section 7.7).

TABLE 7-2
TOXICITY REFERENCE VALUES FOR THE SHORT-TAILED SHREW, DEER MOUSE, RACCOON, AND RED FOX
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 4

Chemical	Test Species	Endpoint	Study Duration	NOAEL TRV (mg/kg/day)	LOAEL TRV (mg/kg/day)	Reference (NOAEL TRV)	Reference (LOAEL TRV)
Metals and Inorganic Chemicals							
Aluminum	Mouse	Reproduction	3 generations	1.93	19.3	Sample et al., 1996	Sample et al., 1996
Antimony	Mouse	Lifespan, longevity	Lifetime	0.125	1.25	Sample et al., 1996	Sample et al., 1996
Arsenic	Mouse	Reproduction	3 generations	0.126	1.26	Sample et al., 1996	Sample et al., 1996
Barium	Rat	Growth, hypertension	16 months	5.1	NA	Sample et al., 1996	
Beryllium	Rat	Longevity, weight loss	Lifetime	0.66	NA	Sample et al., 1996	
Cadmium	Rat	Reproduction	6 weeks	1	10	Sample et al., 1996	Sample et al., 1996
Chromium	Rat	Body weight	1 year	3.28	NA	Sample et al., 1996	
Cobalt	Rat	Reproduction		5	20	ATSDR, 1997	ATSDR, 1997
Copper	Mink	Reproduction	357 days	11.7	15.14	Sample et al., 1996	Sample et al., 1996
Cyanide	Rat	Reproduction	Gestation & lactation	68.7	NA	Sample et al., 1996	
Iron				NA	NA		
Lead	Rat	Reproduction	3 generations	8	80	Sample et al., 1996	Sample et al., 1996
Manganese	Rat	Reproduction	Through gestation	88	284	Sample et al., 1996	Sample et al., 1996
Mercury	Mink	Mortality, weight loss	93 days	0.015	0.025	Sample et al., 1996	Sample et al., 1996
Selenium	Rat	Reproduction	1 year	0.2	0.33	Sample et al., 1996	Sample et al., 1996
Silver	Mouse	Neurological		1.81	18.1	LOAEL/10	ATSDR, 1997
Thallium	Rat	Reproduction	60 days	0.0074	0.074	Sample et al., 1996	Sample et al., 1996
Vanadium	Rat	Developmental	60 days prior to gestation	0.21	2.1	Sample et al., 1996	Sample et al., 1996
Zinc	Rat	Reproduction	16 days	160	320	Sample et al., 1996	Sample et al., 1996
Semivolatiles(1)							
2-Methylnaphthalene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
2,4-Dimethylphenol				NA	NA		
Acenaphthene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate

TABLE 7-2
TOXICITY REFERENCE VALUES FOR THE SHORT-TAILED SHREW, DEER MOUSE, RACCOON, AND RED FOX
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Test Species	Endpoint	Study Duration	NOAEL TRV (mg/kg/day)	LOAEL TRV (mg/kg/day)	Reference (NOAEL TRV)	Reference (LOAEL TRV)
Semivolatiles[1] (Continued)							
Anthracene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Benzo(a)anthracene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Benzo(a)pyrene	Mouse	Reproduction	Days 7-16 of gestation	1	10	Sample et al., 1996	Sample et al., 1996
Benzo(b)fluoranthene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Benzo(g,h,i)perylene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Benzo(k)fluoranthene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Bis(2-Ethylhexyl)phthalate	Mouse	Reproduction	105 days	18.3	183	Sample et al., 1996	Sample et al., 1996
Butylbenzyl Phthalate	Mouse	Reproduction	105 days	18.3	183	Bis(2-ethylhexyl)phthalate used as a surrogate	Bis(2-ethylhexyl)phthalate used as a surrogate
Carbazole	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate due to molecular similarity	benzo(a)pyrene used as a surrogate due to molecular similarity
Chrysene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Dibenzo(a,h)anthracene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Dibenzofuran				NA	NA		
Di-n-octyl phthalate	Mouse	Reproduction	105 days	18.3	183	Bis(2-ethylhexyl)phthalate used as a surrogate	Bis(2-ethylhexyl)phthalate used as a surrogate
Di-n-butylphthalate	Mouse	Reproduction	105 days	550	1833	Sample et al., 1996	Sample et al., 1996
Fluoranthene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate

TABLE 7-2
TOXICITY REFERENCE VALUES FOR THE SHORT-TAILED SHREW, DEER MOUSE, RACCOON, AND RED FOX
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Test Species	Endpoint	Study Duration	NOAEL TRV (mg/kg/day)	LOAEL TRV (mg/kg/day)	Reference (NOAEL TRV)	Reference (LOAEL TRV)
Semivolatiles(1) (Continued)							
Fluorene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Indeno(1,2,3-cd)pyrene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
N-Nitroso-di-n-propylamine				NA	NA		
Fluorene	Mouse	Reproduction	Days 7-16 of gestation		10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Indeno(1,2,3-cd)pyrene					10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
N-Nitroso-di-n-propylamine	Mouse	Reproduction	Days 7-16 of gestation	NA	NA		
N-Nitrosodiphenylamine				NA	NA		
Naphthalene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Phenanthrene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate
Pentachlorophenol	Rat	Reproduction	Mating through lactation	0.24	2.4	Sample et al., 1996	Sample et al., 1996
Pyrene	Mouse	Reproduction	Days 7-16 of gestation	1	10	benzo(a)pyrene used as a surrogate	benzo(a)pyrene used as a surrogate

TABLE 7-2
TOXICITY REFERENCE VALUES FOR THE SHORT-TAILED SHREW, DEER MOUSE, RACCOON, AND RED FOX
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 4 OF 4

Chemical	Test Species	Endpoint	Study Duration	NOAEL TRV (mg/kg/day)	LOAEL TRV (mg/kg/day)	Reference (NOAEL TRV)	Reference (LOAEL TRV)
Pesticides and PCBs							
4,4'-DDD	Rat	Reproduction	2 years	0.8	4	DDT used as a surrogate	DDT used as a surrogate
4,4'-DDE	Rat	Reproduction	2 years	0.8	4	DDT used as a surrogate	DDT used as a surrogate
4,4'-DDT	Rat	Reproduction	2 years	0.8	4	Sample et al., 1996	Sample et al., 1996
alpha-Chlordane	Mice	Reproduction	6 generations	4.6	9.2	Sample et al., 1996	Sample et al., 1996
gamma-Chlordane	Mice	Reproduction	6 generations	4.6	9.2	Sample et al., 1996	Sample et al., 1996
Aroclor-1254/1260	Mouse	Reproduction	12 months	0.068	0.68	Sample et al., 1996	Sample et al., 1996
Dieldrin	Rat	Reproduction	3 generations	0.02	0.2	Sample et al., 1996	Sample et al., 1996
Heptachlor Epoxide	Mink	Reproduction	181 days	0.1	1.0	Sample et al., 1996	Sample et al., 1996

[1]No low molecular weight PAH TRV was available
NA = Not Available
TRV – toxicity reference values
NOAEL – No observed adverse effects level
LOAEL – lowest observed adverse effects level
PAH – polyaromatic hydrocarbons
mg/kg/day – milligrams per kilogram per day.

TABLE 7-3
TOXICITY REFERENCE VALUES FOR THE HAWK, ROBIN, AND MOURNING DOVE
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Test Species	Endpoint	Study Duration	NOAEL TRV (mg/kg/day)	LOAEL TRV (mg/kg/day)	Reference (NOAEL TRV)	Reference (LOAEL TRV)
Metals and Inorganic Chemicals							
Aluminum	Ringed Dove	Reproduction	4 months	109.7	NA	Sample et al., 1996	
Antimony				NA	NA		
Arsenic	Brown-headed cowbird	Mortality	7 months	2.46	7.38	Sample et al., 1996	Sample et al., 1996
Barium	Chicks	Mortality	4 weeks	20.8	41.7	Sample et al., 1996	Sample et al., 1996
Beryllium				NA	NA		
Boron	Mallard Duck	Reproduction	3 weeks prior to, during, and 3 weeks post reproduction	28.8	100	Sample et al., 1996	Sample et al., 1996
Cadmium	Mallard Duck	Reproduction	90 days	1.45	20	Sample et al., 1996	Sample et al., 1996
Chromium	Black Duck	Reproduction	10 months	1	5	Sample et al., 1996	Sample et al., 1996
Cobalt				NA	NA		
Copper	Chickens	Growth	10 weeks	47.0	61.7	Sample et al., 1996	Sample et al., 1996
Cyanide				NA	NA		
Iron				NA	NA		
Lead	Japanese Quail	Reproduction	12 weeks	1.13	11.3	Sample et al., 1996	Sample et al., 1996
Manganese	Japanese Quail	Growth, aggressiveness	75 days	977	NA	Sample et al., 1996	
Mercury	Mallard Duck	Reproduction	3 generations	0.0064	0.064	Sample et al., 1996	Sample et al., 1996
Nickel	Mallard Duckling	Mortality, growth, behavior	90 days	77.4	107	Sample et al., 1996	Sample et al., 1996
Selenium	Mallard duck	Reproduction	100 days	0.4	0.8	Sample et al., 1996	Sample et al., 1996
Silver				NA	NA		
Thallium				NA	NA		
Vanadium	Mallard duck	Mortality	12 weeks	11.4	NA	Sample et al., 1996	
Zinc	Chicken	Reproduction	44 weeks	14.5	131	Sample et al., 1996	Sample et al., 1996
Semivolatiles[1]							
2-Methylnaphthalene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993

TABLE 7-3
TOXICITY REFERENCE VALUES FOR THE HAWK, ROBIN, AND MOURNING DOVE
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 4

Chemical	Test Species	Endpoint	Study Duration	NOAEL TRV (mg/kg/day)	LOAEL TRV (mg/kg/day)	Reference (NOAEL TRV)	Reference (LOAEL TRV)
Semivolatiles[1] (Continued)							
2,4-Dimethylphenol				NA	NA		
Acenaphthene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Anthracene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Benzo(a)anthracene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Benzo(b)fluoranthene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Benzo(a)pyrene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Benzo(k)fluoranthene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Benzo(g,h,i)perylene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Bis(2-Ethylhexyl)phthalate	Ringed Dove	Reproductive	4 weeks	1.1	NA	Sample et al., 1996	
Butylbenzyl Phthalate	Ringed Dove	Reproductive	4 weeks	1.1	NA	Bis(2-ethylhexyl)phthalate used as a surrogate	Bis(2-ethylhexyl)phthalate used as a surrogate
Chrysene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993

TABLE 7-3
TOXICITY REFERENCE VALUES FOR THE HAWK, ROBIN, AND MOURNING DOVE
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Test Species	Endpoint	Study Duration	NOAEL TRV (mg/kg/day)	LOAEL TRV (mg/kg/day)	Reference (NOAEL TRV)	Reference (LOAEL TRV)
Semivolatiles(1) (Continued)							
Carbazole	European Starlings	Immune function	NA	10	100	PAH TRV used as a surrogate due to molecular similarity	PAH TRV used as a surrogate due to molecular similarity
Dibenzofuran				NA	NA		
Dibenzo(a,h)anthracene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Di-n-octylphthalate	Ringed Dove	Reproductive	4 weeks	1.1	NA	Bis(2-ethylhexyl)phthalate used as a surrogate	
Di-n-butylphthalate	Ringed Dove	Reproduction	4 weeks	0.11	1.1	Sample et al., 1996	Sample et al., 1996
Fluoranthene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Fluorene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Indeno(1,2,3-cd)pyrene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Naphthalene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
N-Nitroso-di-n-propylamine				NA	NA		
N-Nitrosodiphenylamine				NA	NA		
Pentachlorophenol				NA	NA		
Phenanthrene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993

TABLE 7-3
TOXICITY REFERENCE VALUES FOR THE HAWK, ROBIN, AND MOURNING DOVE
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 4 OF 4

Chemical	Test Species	Endpoint	Study Duration	NOAEL TRV (mg/kg/day)	LOAEL TRV (mg/kg/day)	Reference (NOAEL TRV)	Reference (LOAEL TRV)
Semivolatiles(1) (Continued)							
Pyrene	European Starlings	Immune function	NA	10	100	Generalized PAH value from Trust et al. 1993	Generalized PAH value from Trust et al. 1993
Pesticides and PCBs							
4,4'-DDD	Brown Pelican	Reproductive	5 years	0.0028	0.028	DDT used as a surrogate	DDT used as a surrogate
4,4'-DDE	Brown Pelican	Reproductive	5 years	0.0028	0.028	DDT used as a surrogate	DDT used as a surrogate
4,4'-DDT	Brown Pelican	Reproductive	5 years	0.0028	0.028	Sample et al., 1996	Sample et al., 1996
alpha-Chlordane	Red-Winged Blackbird	Mortality	84 days	2.14	10.7	Sample et al., 1996	Sample et al., 1996
gamma-Chlordane	Red-Winged Blackbird	Mortality	84 days	2.14	10.7	Sample et al., 1996	Sample et al., 1996
Aroclor-1254/1260	Pheasant	Reproductive	17 weeks	0.18	1.8	Sample et al., 1996	Sample et al., 1996
Dieldrin	Barn Owl	Reproduction	17 weeks	0.077	NA	Sample et al., 1996	
Heptachlor Epoxide				NA	NA		

NA - Not Available.
TRV – toxicity reference values.
NOAEL – No observed adverse effects level.
LOAEL – lowest observed adverse effects level.
PAH – polyaromatic hydrocarbons.
mg/kg/day – milligrams per kilogram per day.

Red fox (*Vulpes vulpes*)

The red fox was chosen as a representative mammalian predator because it is common in Florida and the entire eastern United States. It is one of only a few mid-size carnivorous mammals in the region and its ecology resembles similar species. The red fox prefers several different vegetated habitats and edge areas (USEPA, 1993b).

Red-tailed Hawk (*Buteo jamaicensis*)

The red-tailed hawk was selected as a representative raptor because it is a common avian predator in Florida and the entire eastern United States. It is known to inhabit a variety of habitats, including old fields and wetlands. The red-tailed hawk feeds primarily on small mammals but will also consume small birds and other terrestrial organisms (USEPA, 1993b). The red-tailed hawk's habits are generally similar to other avian predators.

Short-tailed shrew (*Blarina brevicauda*)

The short-tailed shrew was selected as a representative insectivorous small mammal. It can be found in forested areas, fields, brushy areas, and marshes (Burt and Grossenheider, 1976). It feeds primarily on insects, but is an opportunistic feeder preying on earthworms, snails, centipedes, slugs, and even small vertebrates, if available. The short-tailed shrew has a voracious appetite for its body size and, as a result, may receive high doses of contaminants relative to other small mammals.

Cotton Mouse (*Peromyscus gossypinus*)

The cotton mouse was chosen as a representative herbivorous small mammal for this ERA. It prefers low moist areas, high grasslands, areas adjacent to aquatic environments, and forested areas with little ground cover (Burt and Grossenheider, 1976). It is extremely common in the southeast and feeds on grasses, sedges, seeds, fruits, grains, and bark.

American robin (*Turdus migratorius*)

The American robin was chosen as a representative omnivorous (primarily vermivorous) bird that feeds in open areas. It frequents grassy and old field habitats, present on Sites 3, 4, 6, 30, 32, and 33. The species is common in Florida and the entire eastern United States. Its territory size is less than 1.0 ha (USEPA, 1993b), but the species is migratory and ephemeral in its movement.

Mourning dove (*Zenaida macroura*)

The mourning dove was selected as a representative herbivorous bird. It is common in the southeastern United States. It feeds in open fields and grassy areas. Its territory size is about 5.0 ha (DeGraff and Rudis, 1986), but the species is migratory and ephemeral in its movements.

Raccoon (*Procyon lotor*)

The raccoon was selected as a representative mammalian omnivore. The raccoon is found in a variety of habitats and is extremely common in Florida. The raccoon is an opportunistic feeder that will feed on both terrestrial and aquatic plants and animals.

Sufficient toxicity data for reptiles (and amphibians) are unavailable, precluding the use of reptiles in the food chain modeling. A discussion of the uncertainties associated with the absence of toxicity data for this group of receptors is provided in Section 7.7.2 (Uncertainties). Amphibians were not analyzed since each of the sites is entirely terrestrial in nature.

7.4 PRELIMINARY EXPOSURE ESTIMATE

7.4.1 Exposure Point Concentrations

Data used to obtain exposure point contaminant concentrations in this ERA were gathered during 1992, 1993, 1996, and 1998 RI sampling events. The data set used to determine exposure point concentrations included, as a conservative measure, all surface soil samples collected (from both paved and grass areas) at each site. The maximum detected concentrations of contaminants in surface soil at each site were used as the exposure point concentrations to be compared to ecological screening levels in the risk calculation step.

7.4.2 Contaminant Doses for Representative Receptors

A simple model was used to predict dietary exposures for representative receptor species to be compared to TRVs in the risk calculation step. The maximum detected concentrations of contaminants in surface soils were used in the model, as recommended by USEPA (1997b). The actual dose a receptor species receives as the result of indirect or direct exposure is dependent upon the habits of the species and other factors. The equations used to calculate the dose of contaminants ingested for each exposure route for the representative receptors used in this ERA are presented below.

Incidental Ingestion of Soil

Daily intake of each contaminant as a result of ingestion of soil was determined using the following equation:

$$PD_{soil} = (C_{soil} * SFF * SA * F)/(WR)$$

where:	PD_{soil}	=	predicted dose from ingestion of soil (mg/kg/day)
	C_{soil}	=	concentration in soil (mg/kg)
	SFF	=	site foraging frequency (% of home range that overlaps impacted area assumed to be 100%)
	SA	=	percent of diet that equals soil
	F	=	food consumed (kg/day)
	WR	=	body weight (kg).

Ingestion of Food items

The following equation was used to estimate contaminant intake from ingestion of contaminated food items (animals or vegetation):

$$PD_{food} = (C_{food} * F * FA * SFF)/(WR)$$

where:	PD_{food}	=	predicted dose from ingestion of food items (mg/kg/day)
	C_{food}	=	contaminant concentration (vegetation or prey; mg/kg)
	F	=	food consumed (kg/day)
	FA	=	animals/vegetation as a percentage of diet
	SFF	=	site foraging frequency (% of home range that overlaps affected area assumed to be 100%)
	WR	=	weight of receptor (kg).

Nearly all of the input parameters (e.g., body weight, ingestion rate) for the representative receptors were obtained from USEPA's *Wildlife Exposure Factors Handbook: Volumes I and II* (1993b). In general, the values used for the input parameters were conservative (e.g., upper bound food ingestion rate) as presented in the USEPA publication. In addition, the input parameters were generally the same as those used in previous ERAs at NAS Whiting Field by ABB-ES (1998), and are provided in Table 7-4.

For simplicity in the screening-level ERA, bioaccumulation factors (BAFs) were set equal to 1.0. Although BAFs have been used in previous NAS Whiting Field ERAs, the USEPA Environmental Response Team

TABLE 7-4
SUMMARY OF RECEPTORS FOR FOOD CHAIN MODELING AND EXPOSURE PARAMETERS
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Receptor	Guild (Representative Group)	Body Weight (kg)	Body Weight Notes	Food Ingestion Rate (kg/day)[1,2]	Food Ingestion Rate Notes	Soil Ingestion (% of diet)	Soil Ingestion Rate Notes
Short-tailed Shrew (*Blarina brevicauda*)	Insectivorous Mammal	0.017	USEPA, 1993b[3]	0.0024	Calculated using body weight equation from USEPA, 1993b	2%	From Beyer et al., 1994 using 2% of diet for white-footed mouse
Cotton Mouse (*Peromyscus gossypinus*)	Herbivorous Mammal	0.021	Ave. of male and female deer mice from USEPA, 1993b	0.0029	Calculated using body weight equation from USEPA, 1993b	2%	From Beyer et al., 1994 using 2% of diet for white-footed mouse
Mourning Dove (*Zenaida macroura*)	Herbivorous Bird	0.13	Terres, 1980	0.0154	Calculated using body weight equation from USEPA, 1993b	5%	Terres, 1980
Red-tailed Hawk (*Buteo jamaicensis*)	Avian Predator	1.126	Ave. of males and females from USEPA, 1993b	0.123	USEPA, 1993b	2%	2% of diet (lowest for birds due to lack of contact with soil) from Beyer et al., 1994
Red Fox (*Vulpes vulpes*)	Mammalian Predator	4.53	Ave. of males and females from USEPA, 1993b	0.498	USEPA, 1993b	2.8%	Beyer et al., 1994
Raccoon (*Procyon lotor*)	Mammalian Omnivore	3.99	Ave. of males and females from USEPA, 1993b	0.21	Calculated using body weight equation from USEPA, 1993b	9.4%	Beyer et al., 1994
American Robin (*Turdus migratorius*)	Omnivorous Bird (primarily vermivorous)	0.0773	USEPA, 1993b	0.117	USEPA, 1993b	10.4%	From Beyer et al., 1994 using 10.4% of diet for woodcock

1. Drinking water/incidental ingestion of water exposure route is not applicable.
2 Since BAFs = 1.0 and, thus, soil concentration = food concentration, soil ingestion rate will actually be the same as food ingestion rate.
3 USEPA, 1993b - USEPA's *Exposure Factors Handbook,* Volumes I and II (EPA/600/R-93/187).

currently recommends setting BAFs equal to 1.0 in the screening-level ERA. The effect of using BAFs of 1.0 is discussed in Section 7.7 (Uncertainties). Since no surface water or sediments are present on the sites, no exposure from contaminants in those media was evaluated.

7.5 PRELIMINARY RISK CALCULATION

As identified by USEPA (1997b), the preliminary risk calculation step in the ERA process compares contaminant doses for representative receptors with doses associated with toxic effects. Also, the maximum concentrations of contaminants are compared to USEPA Region IV screening levels. The ratio of the exposure point contaminant concentration to the screening level or the modeled dose to the toxic dose is called the hazard quotient (HQ), and is defined as follows:

$$HQ_i = ID_i / TRV_i \text{ or } EPC_i / ESG_i$$

where: HQ_i = Hazard Quotient for analyte "i" (unitless)
ID_i = Intake Dose for analyte "i" (mg/kg/day)
TRV_i = Toxicity Reference Value for analyte "i" (mg/kg/day)
EPC_i = Exposure Point Concentration for analyte "i" (mg/kg)
ESG_i = Ecological Screening Guideline for analyte "i" (mg/kg)

When the ratio of the exposure point concentration to its respective guideline exceeded 1.0, adverse impacts were considered possible, and the contaminant was selected as a COPC. The HQ value should not be construed as being probabilistic; rather, it is a numerical indicator of the extent to which an exposure point concentration exceeds, or is less than a guideline. When HQ values exceed 1.0, it is an indication ecological receptors are potentially at risk. Additional evaluation or data may be necessary to confirm with greater certainty whether ecological receptors are actually at risk, especially since most guidelines are conservatively derived (Section 7.6).

The use of HQs is probably the most common method used for risk characterization in ERAs. Advantages of this method, according to Barnthouse et al. (1986), include the following:

- The HQ method is relatively easy to use, is generally accepted, and can be applied to any data.
- The method is useful when a large number of contaminants must be screened.

This method of risk characterization has some inherent limitations. One primary limitation is it is a "no/maybe" method for relating toxicity to exposure (i.e., it uses single values for exposure concentrations and guidelines). The HQ method does not account for the variability in both these parameters, or for incremental or cumulative toxicity. To loosely address cumulative toxicity, HQs from comparisons to surface soil screening levels were summed to obtain an HI when contaminants were determined to have similar modes of action, as recommended by USEPA Region IV. Due to general disparity in modes of action for inorganics and related uncertainties, summing of HQs was confined to organics with similar modes of action, primarily PAHs, PCBs, phthalates, and organochlorine pesticides.

The comparisons described above are presented in screening tables to select COPCs. Screening tables include the frequency of detection for each analyte, the maximum exposure point concentration, two times the average background concentration (see Section 7.6) for comparative purposes only (i.e., not used in COPC selection in Steps 1 and 2), the contaminant-specific USEPA Region IV screening levels, and HQs. Tables were also generated presenting the HQ values for each representative receptor used in the food chain modeling. For simplicity on the screening tables, HI values for COPCs with similar modes of action are presented in the text instead of the tables.

In summary, the COPC selection process is as follows:

1. The maximum concentrations of detected contaminants in Sites 3, 4, 6, 30, 32, and 33 surface soil were compared to USEPA Region IV screening levels, with the exception of the essential nutrients. If the maximum concentration of these analytes did not exceed the Region IV screening level, it was dropped from further consideration; if it exceeded or was equal to the Region IV screening level, it was selected as a screening COPC. If no Region IV screening level was available, it was selected as a screening COPC.

2. All detected surface soil contaminants were used in the food chain modeling.

3. The maximum detected concentrations of surface soil contaminants were used in the food chain modeling. Any contaminant with at least one HQ exceeding or equal to 1.0 in the food chain modeling was selected as a food chain COPC.

7.5.1 Results of Screening - Site 3

Surface Soil Screening

The organics 4,4'-DDD, 4,4'-DDE, dieldrin, chrysene, fluoranthene, and pyrene had maximum concentrations in Site 3 surface soils in excess of screening levels and thus were selected as COPCs (Table 7-5). The HI for pesticides was 91.44, and the HI for all PAHs was 8.87. The inorganics aluminum, chromium, iron, manganese, selenium, and vanadium had maximum concentrations in Site 3

TABLE 7- 5
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Frequency of Detection	Minimum Detected Concentration[1]	Maximum Detected Concentration[1]	Location of Maximum	2X Average Background	Screening Level[2]	Hazard Quotient	COPC Y/N?
Volatiles								
2-Butanone	1/7	0.006	0.006	3SB3-0-2(93)	NA	NA	NA	Y
Acetone	2/8	0.016	0.1	3SB3-0-2(93)	NA	NA	NA	Y
Tetrachloroethene	1/8	0.003	0.003	3SB5-1-2(93)	NA	NA	NA	Y
Semivolatiles								
Benzo(a)anthracene	1/7	0.098	0.098	3SB9-1-2(93)	NA	0.1	0.98	N
Benzo(a)pyrene	2/7	0.02	0.04	3SB9-1-2(93)	NA	0.1	0.40	N
Benzo(b)fluoranthene	1/7	0.084	0.084	3SB9-1-2(93)	NA	0.1	0.84	N
Benzo(k)fluoranthene	1/7	0.081	0.081	3SB9-1-2(93)	NA	0.1	0.81	N
Bis(2-Ethylhexyl)phthalate	1/7	0.037	0.037	3SB2-1-2(93)	NA	100	0.00	N
Chrysene	1/7	0.13	0.13	3SB9-1-2(93)	NA	0.1	1.30	Y
Dibenzo(a,h)anthracene	1/7	0.006	0.006	W03SB01301	NA	0.1	0.06	N
Fluoranthene	1/7	0.22	0.22	3SB9-1-2(93)	NA	0.1	2.20	Y
Phenanthrene	1/7	0.048	0.048	3SB9-1-2(93)	NA	0.1	0.48	N
Pyrene	1/7	0.18	0.18	3SB9-1-2(93)	NA	0.1	1.80	Y
Pesticides/PCBs								
4,4'-DDD	1/8	0.0042	0.0042	3SB3-0-2(93)	NA	0.0025	1.68	Y
4,4'-DDE	3/8	0.0005	0.0034	3SB3-0-2(93)	NA	0.0025	1.36	Y
4,4'-DDT	2/8	0.0009	0.001	W03SB01301	NA	0.0025	0.40	N
Alpha-Chlordane	1/8	0.01	0.01	3SB1-0-2(93)	NA	NA	NA	Y
Dieldrin	4/8	0.0009	0.044	3SB3-0-2(93)	NA	0.0005	88.00	Y
Gamma-Chlordane	1/8	0.017	0.017	3SB1-0-2(93)	NA	NA	NA	Y
Heptachlor Epoxide	1/8	0.026	0.026	3SB1-0-2(93)	NA	NA	NA	Y
Inorganic Chemicals								
Aluminum	8/8	4380	21500	3SB3-0-2(93)	15848	50	430.00	Y
Arsenic	8/8	0.58	5.5	3SB1-0-2(93)	3.2	10	0.55	N
Barium	8/8	6.4	16.2	3SB5-1-2(93)	23.2	165	0.10	N
Beryllium	2/8	0.06	0.09	3SB1-0-2(93)	0.36	1.1	0.08	N
Cadmium	3/8	0.36	0.72	3SB3-0-2(93)	0.58	1.6	0.45	N
Chromium	8/8	3.2	42.7	3SB3-0-2(93)	11	0.4	106.75	Y
Cobalt	5/8	1	1.7	3SB4-0-2(93)	3	20	0.09	N
Copper	8/8	1.4	9.6	3SB3-0-2(93)	9.4	40	0.24	N

TABLE 7- 5
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 3
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Frequency of Detection	Minimum Detected Concentration(1)	Maximum Detected Concentration(1)	Location of Maximum	2X Average Background	Screening Level(2)	Hazard Quotient	COPC Y/N?
Inorganic Chemicals								
Cyanide	3/7	0.41	0.51	3SB1-0-2(93)	0.28	NA	NA	Y
Iron	8/8	2590	12900	3SB2-1-2(93)	8832	200	64.50	Y
Lead	8/8	1.5	14.5	3SB1-0-2(93)	11.4	50	0.29	N
Manganese	8/8	25	151	3SB4-0-2(93)	392	100	1.51	Y
Mercury	5/8	0.02	0.06	3SB5-1-2(93)	0.12	0.67	0.09	N
Nickel	5/8	1.7	15.7	3SB3-0-2(93)	7.2	30	0.52	N
Selenium	4/8	0.41	2.7	3SB1-0-2(93)	0.46	0.81	3.33	Y
Silver	2/8	0.57	1	3SB2-1-2(93)	0.7	2	0.50	N
Thallium	1/8	0.15	0.15	3SB9-1-2(93)	1.16	1	0.15	N
Vanadium	8/8	5.9	34	3SB3-0-2(93)	21.8	2	17.00	Y
Zinc	8/8	1.5	12.2	3SB5-1-2(93)	15.4	50	0.24	N

[1] All values in milligrams per kilogram.
[2] USEPA, 1998b.
COPC - Chemical of potential concern

surface soils in excess of screening levels and thus were selected as COPCs (Table 7-5). Acetone, 2-butanone, tetrachloroethene, alpha- and gamma-chlordane, cyanide, and heptachlor epoxide were selected as surface soil COPCs since no USEPA Region IV surface soil screening values were available.

Food Chain Modeling

The inorganics aluminum, arsenic, barium, chromium, lead, mercury, selenium, thallium, vanadium, and zinc had at least one HQ greater than 1.0 in the food chain modeling for Site 3 (Table 7-6). The organics 4,4'-DDD and 4,4'-DDE had at least one HQ greater than 1.0.

7.5.2 Results of Screening - Site 4

Surface Soil Screening

The organics 4,4'-DDT, 4,4'-DDE, dieldrin, and chrysene had maximum concentrations in excess of screening levels in Site 4 surface soils and thus were selected as COPCs (Table 7-7). HI values were 209.6, < 1.0, and 5.91 for pesticides, phthalates, and PAHs, respectively. The inorganics aluminum, chromium, iron, manganese, and vanadium had maximum concentrations in excess of surface soil screening levels in Site 4 surface soils and thus were selected as COPCs (Table 7-7). Acetone, carbon disulfide, and N-nitroso-di-n-propylamine were selected as organic COPCs since no USEPA Region IV surface soil screening values were available.

Food Chain Modeling

The inorganics aluminum, arsenic, barium, chromium, lead, mercury, vanadium, and zinc had at least one HQ greater than 1.0 in the food chain modeling for Site 4 (Table 7-8). The organics dieldrin, 4,4'-DDE, and 4,4'-DDT had at least one HQ greater than 1.0.

7.5.3 Results of Screening - Site 6

Surface Soil Screening

Several PAHs, Aroclor-1260, and the pesticides 4,4'-DDD, 4,4'-DDE, and dieldrin were selected as organic COPCs in Site 6 surface soils since their maximum concentrations exceeded screening levels (Table 7-9). HI values were 121.6, 181.0, and < 1.0 for pesticides, PAHs, and phthalates, respectively. Aluminum, cadmium, chromium, copper, iron, lead, manganese, vanadium, and zinc were selected as inorganic COPCs in Site 6 surface soils since their maximum concentrations exceeded screening levels

TABLE 7-6
FOOD CHAIN MODELING HAZARD QUOTIENTS FOR SITE 3
NAS WHITING FIELD, MILTON, FLORIDA

Ecological Chemical of Concern	Shrew		Robin		Hawk		Dove		Fox		Mouse		Raccoon	
	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l
Semivolatiles														
Benzo(a)anthracene	1.41E-02	1.41E-03	1.64E-02	1.64E-03	1.09E-03	1.09E-04	1.22E-03	1.22E-04	1.11E-02	1.11E-03	1.38E-02	1.38E-03	5.64E-03	5.64E-04
Benzo(a)pyrene	5.76E-03	5.76E-04	6.68E-03	6.68E-04	4.46E-04	4.46E-05	4.98E-04	4.98E-05	4.52E-03	4.52E-04	5.63E-03	5.63E-04	2.30E-03	2.30E-04
Benzo(b)fluoranthene	1.21E-02	1.21E-03	1.40E-02	1.40E-03	9.36E-04	9.36E-05	1.04E-03	1.04E-04	9.49E-03	9.49E-04	1.18E-02	1.18E-03	4.84E-03	4.84E-04
Benzo(k)fluoranthene	1.17E-02	1.17E-03	1.35E-02	1.35E-03	9.03E-04	9.03E-05	1.01E-03	1.01E-04	9.15E-03	9.15E-04	1.14E-02	1.14E-03	4.66E-03	4.66E-04
Bis(2-Ethylhexyl)phthalate	2.91E-04	2.91E-05	5.62E-02	NA	3.75E-03	NA	4.18E-03	NA	2.28E-04	2.28E-05	2.85E-04	2.85E-05	1.16E-04	1.16E-05
Chrysene	1.87E-02	1.87E-03	2.17E-02	2.17E-03	1.45E-03	1.45E-04	1.62E-03	1.62E-04	1.47E-02	1.47E-03	1.83E-02	1.83E-03	7.49E-03	7.49E-04
Dibenzo(a,h)anthracene	8.64E-04	8.64E-05	1.00E-03	1.00E-04	6.69E-05	6.69E-06	7.46E-05	7.46E-06	6.78E-04	6.78E-05	8.45E-04	8.45E-05	3.45E-04	3.45E-05
Fluoranthene	3.17E-02	3.17E-03	3.68E-02	3.68E-03	2.45E-03	2.45E-04	2.74E-03	2.74E-04	2.49E-02	2.49E-03	3.10E-02	3.10E-03	1.27E-02	1.27E-03
Phenanthrene	6.91E-03	6.91E-04	8.02E-03	8.02E-04	5.35E-04	5.35E-05	5.97E-04	5.97E-05	5.42E-03	5.42E-04	6.76E-03	6.76E-04	2.76E-03	2.76E-04
Pyrene	2.59E-02	2.59E-03	3.01E-02	3.01E-03	2.01E-03	2.01E-04	2.24E-03	2.24E-04	2.03E-02	2.03E-03	2.54E-02	2.54E-03	1.04E-02	1.04E-03
Pesticides/PCBs														
4,4'-DDD	7.56E-04	1.51E-04	**2.51E+00**	2.51E-01	1.67E-01	1.67E-02	1.87E-01	1.87E-02	5.93E-04	1.19E-04	7.40E-04	1.48E-04	3.02E-04	6.05E-05
4,4'-DDE	6.12E-04	1.22E-04	**2.03E+00**	2.03E-01	1.35E-01	1.35E-02	1.51E-01	1.51E-02	4.80E-04	9.61E-05	5.99E-04	1.20E-04	2.45E-04	4.89E-05
4,4'-DDT	1.80E-04	3.60E-05	5.97E-01	5.97E-02	3.98E-02	3.98E-03	4.44E-02	4.44E-03	1.41E-04	2.83E-05	1.76E-04	3.52E-05	7.20E-05	1.44E-05
Alpha-Chlordane	3.13E-04	1.57E-04	7.81E-03	1.56E-03	5.21E-04	1.04E-04	5.81E-04	1.16E-04	2.46E-04	1.23E-04	3.06E-04	1.53E-04	1.25E-04	6.26E-05
Dieldrin	3.17E-01	3.17E-02	9.55E-01	NA	6.37E-02	NA	7.11E-02	NA	2.49E-01	2.49E-02	3.10E-01	3.10E-02	1.27E-01	1.27E-02
Gamma-Chlordane	5.32E-04	2.66E-04	1.33E-02	2.65E-03	8.85E-04	1.77E-04	9.88E-04	1.98E-04	4.18E-04	2.09E-04	5.21E-04	2.60E-04	2.13E-04	1.06E-04
Heptachlor Epoxide	3.74E-02	3.74E-03	NA	NA	NA	NA	NA	NA	2.94E-02	2.94E-03	3.66E-02	3.66E-03	1.50E-02	1.50E-03
Inorganic Chemicals														
Aluminum	**1.60E+03**	**1.60E+02**	**3.27E+02**	NA	**2.18E+01**	NA	**2.44E+01**	NA	**1.26E+03**	**1.26E+02**	**1.57E+03**	**1.57E+02**	**6.41E+02**	**6.41E+01**
Arsenic	**6.29E+00**	6.29E-01	**3.74E+00**	**1.25E+00**	2.49E-01	8.30E-02	2.78E-01	9.27E-02	**4.93E+00**	4.93E-01	**6.15E+00**	6.15E-01	**2.51E+00**	2.51E-01
Barium	4.57E-01	NA	**1.30E+00**	6.49E-01	8.68E-02	4.33E-02	9.69E-02	4.83E-02	3.59E-01	NA	4.47E-01	NA	1.83E-01	NA
Beryllium	1.96E-02	NA	NA	NA	NA	NA	NA	NA	1.54E-02	NA	1.92E-02	NA	7.85E-03	NA
Cadmium	1.04E-01	1.04E-02	8.30E-01	6.02E-02	5.53E-02	4.01E-03	6.18E-02	4.48E-03	8.14E-02	8.14E-03	1.01E-01	1.01E-02	4.15E-02	4.15E-03
Chromium	**1.87E+00**	NA	**7.14E+01**	**1.43E+01**	**4.76E+00**	9.52E-01	**5.31E+00**	**1.06E+00**	**1.47E+00**	NA	**1.83E+00**	NA	7.50E-01	NA
Cobalt	4.90E-02	1.22E-02	NA	NA	NA	NA	NA	NA	3.84E-02	9.61E-03	4.79E-02	1.20E-02	1.96E-02	4.89E-03
Copper	1.18E-01	9.13E-02	3.41E-01	2.60E-01	2.28E-02	1.73E-02	2.54E-02	1.94E-02	9.27E-02	7.17E-02	1.16E-01	8.93E-02	4.72E-02	3.65E-02
Cyanide	1.07E-03	NA	NA	NA	NA	NA	NA	NA	8.39E-04	NA	1.05E-03	NA	4.27E-04	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	2.61E-01	2.61E-02	**2.14E+01**	**2.14E+00**	**1.43E+00**	1.43E-01	**1.60E+00**	1.60E-01	2.05E-01	2.05E-02	2.55E-01	2.55E-02	1.04E-01	1.04E-02
Manganese	2.47E-01	7.66E-02	2.58E-01	NA	1.72E-02	NA	1.92E-02	NA	1.94E-01	6.01E-02	2.42E-01	7.49E-02	9.88E-02	3.06E-02
Mercury	5.76E-01	3.46E-01	**1.57E+01**	**1.57E+00**	**1.04E+00**	1.04E-01	**1.17E+00**	1.17E-01	4.52E-01	2.71E-01	5.63E-01	3.38E-01	2.30E-01	1.38E-01
Nickel	5.65E-02	2.83E-02	3.39E-01	2.45E-01	2.26E-02	1.63E-02	2.52E-02	1.83E-02	4.44E-02	2.22E-02	5.53E-02	2.76E-02	2.26E-02	1.13E-02
Selenium	**1.94E+00**	**1.18E+00**	**1.13E+01**	**5.64E+00**	7.52E-01	3.76E-01	8.40E-01	4.20E-01	**1.53E+00**	9.25E-01	**1.90E+00**	**1.15E+00**	7.77E-01	4.71E-01

TABLE 7-6
FOOD CHAIN MODELING HAZARD QUOTIENTS FOR SITE 3
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Ecological Chemical of Concern	Shrew		Robin		Hawk		Dove		Fox		Mouse		Raccoon	
	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l
Inorganic Chemicals (Continued)														
Silver	7.96E-02	7.96E-03	NA	NA	NA	NA	NA	NA	6.24E-02	6.24E-03	7.78E-02	7.78E-03	3.18E-02	3.18E-03
Thallium	**2.92E+00**	2.92E-01	NA	NA	NA	NA	NA	NA	NA	2.29E-01	**2.86E+00**	2.86E-01	**1.17E+00**	1.17E-01
Vanadium	**2.33E+01**	**2.33E+00**	**4.98E+00**	NA	3.32E-01	NA	3.71E-01	NA	**1.83E+01**	**1.83E+00**	**2.28E+01**	**2.28E+00**	**9.32E+00**	9.32E-01
Zinc	1.10E-02	5.49E-03	**1.41E+00**	1.56E-01	9.37E-02	1.04E-02	1.05E-01	1.16E-02	8.62E-03	4.31E-03	1.07E-02	5.37E-03	4.39E-03	2.20E-03

NA- NOAEL/LOAEL not available.

TABLE 7- 7
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Frequency of Detection	Minimum Detected Concentration[1]	Maximum Detected Concentration[1]	Location of Maximum	2X Average Background	Screening Level[2]	Hazard Quotient	COPC Y/N?
Volatiles								
Acetone	5/11	0.006	0.98	W04SB01001	NA	NA	NA	Y
Carbon Disulfide	1/11	0.001	0.001	W04SB00801	NA	NA	NA	Y
Ethylbenzene	1/11	0.002	0.002	W04SB00301	NA	0.05	0.04	N
Toluene	2/11	0.001	0.011	W04SB00301	NA	0.05	0.22	N
Xylenes, Total	3/11	0.002	0.004	W04SB00301	NA	0.05	0.08	N
Semivolatiles								
Anthracene	1/11	0.058	0.058	W04SB00301	NA	0.1	0.58	N
Benzo(a)anthracene	2/11	0.048	0.084	W04SB00601	NA	0.1	0.84	N
Benzo(a)pyrene	3/11	0.022	0.08	W04SB00601	NA	0.1	0.80	N
Bis(2-Ethylhexyl)phthalate	7/11	0.039	0.25	W04SB01101	NA	100	0.00	N
Chrysene	2/11	0.093	0.11	W04SB00301	NA	0.1	1.10	Y
Di-n-butyl phthalate	1/11	0.036	0.036	W04SB01101	NA	200	0.00	N
Di-n-octyl phthalate	1/11	0.048	0.048	W04SB01001	NA	100	0.00	N
Dibenzo(a,h)anthracene	3/11	0.007	0.031	W04SB00601	NA	0.1	0.31	N
Fluoranthene	3/11	0.062	0.08	W04SB00601	NA	0.1	0.80	N
N-Nitroso-di-n-propylamine	1/11	0.01	0.01	W04SB00601	NA	NA	NA	Y
Phenanthrene	1/11	0.075	0.075	W04SB00301	NA	0.1	0.75	N
Pyrene	3/11	0.059	0.073	W04SB00601	NA	0.1	0.73	N
Pesticides/PCBs								
4,4'-DDE	3/11	0.0019	0.063	W04SB01101	NA	0.0025	25.20	Y
4,4'-DDT	3/11	0.0017	0.036	W04SB01101	NA	0.0025	14.40	Y
Dieldrin	4/11	0.0004	0.085	W04SB01101	NA	0.0005	170.00	Y
Inorganic Chemicals								
Aluminum	11/11	7580	27800	W04SB00901	15848	50	556.00	Y
Arsenic	9/11	1.31	5.5	W04SB00601	3.2	10	0.55	N
Barium	11/11	5.8	16.1	W04SB00701	23.2	165	0.10	N
Chromium	11/11	5.2	21.6	W04SB00601	11	0.4	54.00	Y
Cobalt	3/11	0.55	0.65	W04SB01101	3	20	0.03	N
Copper	11/11	2.5	8.1	W04SB00601	9.4	40	0.20	N
Iron	11/11	4000	14800	W04SB00601	8832	200	74.00	Y
Lead	11/11	3.4	19.2	W04SB00601	11.4	50	0.38	N

TABLE 7-7
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Frequency of Detection	Minimum Detected Concentration(1)	Maximum Detected Concentration(1)	Location of Maximum	2X Average Background	Screening Level(2)	Hazard Quotient	COPC Y/N?
Inorganic Chemicals (Continued)								
Manganese	11/11	23.2	161	W04SB00701	392	100	1.61	Y
Mercury	1/11	0.03	0.03	W04SB00401	0.12	0.67	0.04	N
Nickel	11/11	1.2	3.3	W04SB00701	7.2	30	0.11	N
Vanadium	11/11	10.6	41.4	W04SB00601	21.8	2	20.70	Y
Zinc	11/11	5.05	16.9	W04SB00701	15.4	50	0.34	N

[1] All values in milligrams per kilogram.
[2] USEPA, 1998b.
COPC - Chemical of potential concern.

TABLE 7-8
FOOD CHAIN MODELING HAZARD QUOTIENTS FOR SITE 4
NAS WHITING FIELD, MILTON, FLORIDA

Ecological Chemical of Concern	Shrew		Robin		Hawk		Dove		Fox		Mouse		Raccoon	
	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l
Semivolatiles														
Anthracene	8.35E-03	8.35E-04	9.69E-03	9.69E-04	6.46E-04	6.46E-05	7.21E-04	7.21E-05	6.55E-03	6.55E-04	8.17E-03	8.17E-04	3.34E-03	3.34E-04
Benzo(a)anthracene	1.21E-02	1.21E-03	1.40E-02	1.40E-03	9.36E-04	9.36E-05	1.04E-03	1.04E-04	9.49E-03	9.49E-04	1.18E-02	1.18E-03	4.84E-03	4.84E-04
Benzo(a)pyrene	1.15E-02	1.15E-03	1.34E-02	1.34E-03	8.91E-04	8.91E-05	9.95E-04	9.95E-05	9.04E-03	9.04E-04	1.13E-02	1.13E-03	4.61E-03	4.61E-04
Bis(2-Ethylhexyl)phthalate	1.97E-03	1.97E-04	3.80E-01	NA	2.53E-02	NA	2.83E-02	NA	1.54E-03	1.54E-04	1.92E-03	1.92E-04	7.87E-04	7.87E-05
Chrysene	1.58E-02	1.58E-03	1.84E-02	1.84E-03	1.23E-03	1.23E-04	1.37E-03	1.37E-04	1.24E-02	1.24E-03	1.55E-02	1.55E-03	6.33E-03	6.33E-04
Di-n-butyl phthalate	9.43E-06	2.83E-06	5.47E-01	5.47E-02	3.65E-02	3.65E-03	4.07E-02	4.07E-03	7.40E-06	2.22E-06	9.22E-06	2.77E-06	3.77E-06	1.13E-06
Di-n-octyl phthalate	3.78E-04	3.78E-05	7.29E-02	NA	4.86E-03	NA	5.43E-03	NA	2.96E-04	2.96E-05	3.69E-04	3.69E-05	1.51E-04	1.51E-05
Dibenzo(a,h)anthracene	4.46E-03	4.46E-04	5.18E-03	5.18E-04	3.45E-04	3.45E-05	3.86E-04	3.86E-05	3.50E-03	3.50E-04	4.37E-03	4.37E-04	1.78E-03	1.78E-04
Fluoranthene	1.15E-02	1.15E-03	1.34E-02	1.34E-03	8.91E-04	8.91E-05	9.95E-04	9.95E-05	9.04E-03	9.04E-04	1.13E-02	1.13E-03	4.61E-03	4.61E-04
N-Nitroso-di-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.08E-02	1.08E-03	1.25E-02	1.25E-03	8.36E-04	8.36E-05	9.33E-04	9.33E-05	8.48E-03	8.48E-04	1.06E-02	1.06E-03	4.32E-03	4.32E-04
Pyrene	1.05E-02	1.05E-03	1.22E-02	1.22E-03	8.13E-04	8.13E-05	9.08E-04	9.08E-05	8.25E-03	8.25E-04	1.03E-02	1.03E-03	4.20E-03	4.20E-04
Pesticides/PCBs														
4,4'-DDE	1.13E-02	2.27E-03	**3.76E+01**	**3.76E+00**	**2.51E+00**	2.51E-01	**2.80E+00**	2.80E-01	8.90E-03	1.78E-03	1.11E-02	2.22E-03	4.53E-03	9.07E-04
4,4'-DDT	6.48E-03	1.30E-03	**2.15E+01**	**2.15E+00**	**1.43E+00**	1.43E-01	**1.60E+00**	1.60E-01	5.09E-03	1.02E-03	6.34E-03	1.27E-03	2.59E-03	5.18E-04
Dieldrin	6.12E-01	6.12E-02	**1.84E+00**	NA	1.23E-01	NA	1.37E-01	NA	4.80E-01	4.80E-02	5.99E-01	5.99E-02	2.45E-01	2.45E-02
Inorganic Chemicals														
Aluminum	**2.07E+03**	**2.07E+02**	**4.23E+02**	NA	**2.82E+01**	NA	**3.15E+01**	NA	**1.63E+03**	**1.63E+02**	**2.03E+03**	**2.03E+02**	**8.29E+02**	**8.29E+01**
Arsenic	**6.29E+00**	6.29E-01	**3.74E+00**	**1.25E+00**	2.49E-01	8.30E-02	2.78E-01	9.27E-02	**4.93E+00**	4.93E-01	**6.15E+00**	6.15E-01	**2.51E+00**	2.51E-01
Barium	4.55E-01	NA	**1.29E+00**	6.45E-01	8.62E-02	4.30E-02	9.63E-02	4.80E-02	3.57E-01	NA	4.45E-01	NA	1.82E-01	NA
Chromium	9.48E-01	NA	**3.61E+01**	**7.22E+00**	**2.41E+00**	4.81E-01	**2.69E+00**	5.37E-01	7.44E-01	NA	9.28E-01	NA	3.79E-01	NA
Cobalt	1.87E-02	4.68E-03	NA	NA	NA	NA	NA	NA	1.47E-02	3.67E-03	1.83E-02	4.58E-03	7.49E-03	1.87E-03
Copper	9.97E-02	7.70E-02	2.88E-01	2.19E-01	1.92E-02	1.46E-02	2.14E-02	1.63E-02	7.82E-02	6.05E-02	9.75E-02	7.54E-02	3.99E-02	3.08E-02
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	3.46E-01	3.46E-02	**2.84E+01**	**2.84E+00**	**1.89E+00**	1.89E-01	**2.11E+00**	2.11E-01	2.71E-01	2.71E-02	3.38E-01	3.38E-02	1.38E-01	1.38E-02
Manganese	2.63E-01	8.16E-02	2.75E-01	NA	1.84E-02	NA	2.05E-02	NA	2.07E-01	6.41E-02	2.58E-01	7.99E-02	1.05E-01	3.26E-02
Mercury	2.88E-01	1.73E-01	**7.83E+00**	7.83E-01	5.22E-01	5.22E-02	5.83E-01	5.83E-02	2.26E-01	1.36E-01	2.82E-01	1.69E-01	1.15E-01	6.91E-02
Nickel	1.19E-02	5.94E-03	7.12E-02	5.15E-02	4.75E-03	3.44E-03	5.30E-03	3.84E-03	9.32E-03	4.66E-03	1.16E-02	5.81E-03	4.75E-03	2.38E-03
Vanadium	**2.84E+01**	**2.84E+00**	**6.07E+00**	NA	4.05E-01	NA	4.52E-01	NA	**2.23E+01**	**2.23E+00**	**2.78E+01**	**2.78E+00**	**1.14E+01**	**1.14E+00**
Zinc	1.52E-02	7.61E-03	**1.95E+00**	2.16E-01	1.30E-01	1.44E-02	1.45E-01	1.60E-02	1.19E-02	5.97E-03	1.49E-02	7.44E-03	6.08E-03	3.04E-03

NA- NOAEL/LOAEL not available.

TABLE 7- 9
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Frequency of Detection	Minimum Detected Concentration(1)	Maximum Detected Concentration(1)	Location of Maximum	2X Average Background	Screening Level(2)	Hazard Quotient	COPC Y/N?
Volatiles								
2-Butanone	1/3	0.004	0.004	6SB4-0-2(92)	NA	NA	NA	Y
Semivolatiles								
2-Methylnaphthalene	1/3	0.048	0.048	6SB3-0-2(92)-D	NA	0.1	0.48	N
Acenaphthene	1/3	0.155	0.155	6SB3-0-2(92)-D	NA	20	0.01	N
Anthracene	1/3	0.15	0.15	6SB3-0-2(92)-D	NA	0.1	1.50	Y
Benzo(a)anthracene	1/3	1.65	1.65	6SB3-0-2(92)-D	NA	0.1	16.50	Y
Benzo(a)pyrene	1/3	1.75	1.75	6SB3-0-2(92)-D	NA	0.1	17.50	Y
Benzo(b)fluoranthene	1/3	2.05	2.05	6SB3-0-2(92)	NA	0.1	20.50	Y
Benzo(g,h,i)perylene	1/3	1.03	1.03	6SB3-0-2(92)	NA	0.1	10.30	Y
Benzo(k)fluoranthene	1/3	1.6	1.6	6SB3-0-2(92)-D	NA	0.1	16.00	Y
Bis(2-Ethylhexyl)phthalate	1/3	1.07	1.02	6SB3-0-2(92)	NA	100	0.01	N
Butylbenzyl Phthalate	1/3	0.205	0.205	6SB3-0-2(92)-D	NA	100	0.00	N
Carbazole	1/3	0.28	0.28	6SB3-0-2(92)-D	NA	0.1	2.80	Y
Chrysene	1/3	1.9	1.9	6SB3-0-2(92)-D	NA	0.1	19.00	Y
Dibenzo(a,h)anthracene	1/3	0.126	0.121	6SB3-0-2(92)-D	NA	0.1	1.21	Y
Dibenzofuran	1/3	0.057	0.057	6SB3-0-2(92)-D	NA	NA	NA	Y
Fluoranthene	1/3	2.5	2.5	6SB3-0-2(92)-D	NA	0.1	25.00	Y
Fluorene	1/3	0.115	0.115	6SB3-0-2(92)-D	NA	0.1	1.15	Y
Indeno(1,2,3-cd)pyrene	1/3	1.5	1.5	6SB3-0-2(92)	NA	0.1	15.00	Y
Phenanthrene	1/3	1.35	1.35	6SB3-0-2(92)-D	NA	0.1	13.50	Y
Pyrene	1/3	2.05	2.05	6SB3-0-2(92)-D	NA	0.1	20.50	Y
Pesticides/PCBs								
4,4'-DDD	1/3	0.13	0.13	6SB4-0-2(92)	NA	0.0025	52.00	Y
4,4'-DDE	1/3	0.024	0.024	6SB4-0-2(92)	NA	0.0025	9.60	Y
Aroclor-1260	1/3	0.6	0.6	6SB4-0-2(92)	NA	0.02	30.00	Y
Dieldrin	1/3	0.03	0.03	6SB4-0-2(92)	NA	0.0005	60.00	Y
Inorganics								
Aluminum	3/3	10130	29100	6SB4-0-2(92)	15848	50	582.00	Y
Arsenic	3/3	2.1	3.4	6SB3-0-2(92)	3.2	10	0.34	N
Barium	3/3	11.2	19.4	6SB2-0-2(92)	23.2	165	0.12	N

TABLE 7- 9
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Frequency of Detection	Minimum Detected Concentration(1)	Maximum Detected Concentration(1)	Location of Maximum	2X Average Background	Screening Level(2)	Hazard Quotient	COPC Y/N?
Inorganics (Continued)								
Beryllium	2/3	0.22	0.37	6SB2-0-2(92)	0.36	1.1	0.34	N
Cadmium	3/3	0.75	2.1	6SB4-0-2(92)	0.58	1.6	1.31	Y
Chromium	3/3	16.3	58.3	6SB3-0-2(92)	11	0.4	145.75	Y
Cobalt	1/3	1.9	1.9	6SB2-0-2(92)	3	20	0.10	N
Copper	3/3	6.4	50.5	6SB4-0-2(92)	9.4	40	1.26	Y
Iron	3/3	10000	14800	6SB2-0-2(92)	8832	200	74.00	Y
Lead	3/3	14.7	227	6SB3-0-2(92)	11.4	50	4.54	Y
Manganese	3/3	20	180	6SB2-0-2(92)	392	100	1.80	Y
Mercury	3/3	0.03	0.13	6SB4-0-2(92)	0.12	0.67	0.19	N
Nickel	2/3	2.1	12.6	6SB3-0-2(92)-D	7.2	30	0.42	N
Silver	1/3	0.467	0.467	6SB3-0-2(92)-D	0.7	2	0.23	N
Thallium	1/3	0.17	0.17	6SB4-0-2(92)	1.16	1	0.17	N
Vanadium	3/3	31.9	42.2	6SB4-0-2(92)	21.8	2	21.10	Y
Zinc	3/3	9.2	162	6SB4-0-2(92)	15.4	50	3.24	Y

[1] All values in milligrams per kilogram.
[2] USEPA, 1998b.
COPC - Chemical of potential concern.

(Table 7-9). 2-butanone and dibenzofuran were selected as surface soil COPCs since no USEPA Region IV screening values were available.

Food Chain Modeling

The inorganics aluminum, arsenic, barium, cadmium, chromium, copper, lead, mercury, thallium, vanadium, and zinc had at least one HQ greater than 1.0 in the food chain modeling for Site 6 (Table 7-10). The organics Aroclor-1260, bis(2-ethylhexyl)phthalate, 4,4'-DDD and 4,4'-DDE had at least one HQ greater than 1.0.

7.5.4 Results of Screening - Site 30

Surface Soil Screening

Trichloroethene, 2-methylnaphthalene, fluorene, naphthalene, phenanthrene, pentachlorophenol, and the pesticides 4,4'-DDD and dieldrin were selected as organic COPCs since their maximum concentrations exceeded screening levels (Table 7-11). HI values were 27.04 and 140.8 for pesticides and PAHs, respectively. Aluminum, chromium, iron, lead, manganese, selenium, and vanadium were selected as inorganic COPCs in Site 30 surface soils since their maximum concentrations exceeded USEPA Region IV screening levels (Table 7-11). Cyanide, acetone, 1,2-dichloroethene, 2-butanone, methylene chloride, dibenzofuran, and gamma-chlordane were selected as COPCs since no USEPA Region IV screening levels were available.

Food Chain Modeling

The inorganics aluminum, arsenic, barium, cadmium, chromium, lead, manganese, mercury, selenium, vanadium, and zinc had at least one HQ greater than 1.0 in the food chain modeling for Site 30 (Table 7-12). The organics 4,4'-DDD and naphthalene had at least one HQ greater than 1.0.

7.5.5 Results of Screening - Site 32

Surface Soil Screening

Trichloroethene, 2-methylnaphthalene, fluorene, naphthalene, phenanthrene, pyrene, and Aroclor-1254 were selected as organic COPCs in Site 32 surface soils since their maximum concentrations exceeded screening levels (Table 7-13). HI values were 1.16 and 264.6 for pesticides and PAHs, respectively. The inorganics aluminum, antimony, chromium, iron, selenium, and vanadium in Site 32 surface soils had

TABLE 7-10
FOOD CHAIN MODELING HAZARD QUOTIENTS FOR SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Ecological Chemical of Concern	Shrew		Robin		Hawk		Dove		Fox		Mouse		Raccoon	
	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l
Semivolatiles														
2-Methylnaphthalene	6.91E-03	6.91E-04	8.02E-03	8.02E-04	5.35E-04	5.35E-05	5.97E-04	5.97E-05	5.42E-03	5.42E-04	6.76E-03	6.76E-04	2.76E-03	2.76E-04
Acenaphthene	2.23E-02	2.23E-03	2.59E-02	2.59E-03	1.73E-03	1.73E-04	1.93E-03	1.93E-04	1.75E-02	1.75E-03	2.18E-02	2.18E-03	8.92E-03	8.92E-04
Anthracene	2.16E-02	2.16E-03	2.51E-02	2.51E-03	1.67E-03	1.67E-04	1.87E-03	1.87E-04	1.70E-02	1.70E-03	2.11E-02	2.11E-03	8.64E-03	8.64E-04
Benzo(a)anthracene	2.38E-01	2.38E-02	2.76E-01	2.76E-02	1.84E-02	1.84E-03	2.05E-02	2.05E-03	1.86E-01	1.86E-02	2.32E-01	2.32E-02	9.50E-02	9.50E-03
Benzo(a)pyrene	2.52E-01	2.52E-02	2.92E-01	2.92E-02	1.95E-02	1.95E-03	2.18E-02	2.18E-03	1.98E-01	1.98E-02	2.47E-01	2.47E-02	1.01E-01	1.01E-02
Benzo(b)fluoranthene	2.95E-01	2.95E-02	3.43E-01	3.43E-02	2.28E-02	2.28E-03	2.55E-02	2.55E-03	2.32E-01	2.32E-02	2.89E-01	2.89E-02	1.18E-01	1.18E-02
Benzo(g,h,i)perylene	1.48E-01	1.48E-02	1.72E-01	1.72E-02	1.15E-02	1.15E-03	1.28E-02	1.28E-03	1.16E-01	1.16E-02	1.45E-01	1.45E-02	5.93E-02	5.93E-03
Benzo(k)fluoranthene	2.30E-01	2.30E-02	2.67E-01	2.67E-02	1.78E-02	1.78E-03	1.99E-02	1.99E-03	1.81E-01	1.81E-02	2.25E-01	2.25E-02	9.21E-02	9.21E-03
Bis(2-Ethylhexyl)phthalate	8.03E-03	8.03E-04	**1.55E+00**	NA	1.03E-01	NA	1.15E-01	NA	6.30E-03	6.30E-04	7.85E-03	7.85E-04	3.21E-03	3.21E-04
Butylbenzyl Phthalate	1.61E-03	1.61E-04	3.11E-01	NA	2.08E-02	NA	2.32E-02	NA	1.27E-03	1.27E-04	1.58E-03	1.58E-04	6.45E-04	6.45E-05
Carbazole	4.03E-02	4.03E-03	4.68E-02	4.68E-03	3.12E-03	3.12E-04	3.48E-03	3.48E-04	3.16E-02	3.16E-03	3.94E-02	3.94E-03	1.61E-02	1.61E-03
Chrysene	2.74E-01	2.74E-02	3.17E-01	3.17E-02	2.12E-02	2.12E-03	2.36E-02	2.36E-03	2.15E-01	2.15E-02	2.68E-01	2.68E-02	1.09E-01	1.09E-02
Dibenzo(a,h)anthracene	1.74E-02	1.74E-03	2.02E-02	2.02E-03	1.35E-03	1.35E-04	1.51E-03	1.51E-04	1.37E-02	1.37E-03	1.70E-02	1.70E-03	6.97E-03	6.97E-04
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	3.60E-01	3.60E-02	4.18E-01	4.18E-02	2.79E-02	2.79E-03	3.11E-02	3.11E-03	2.83E-01	2.83E-02	3.52E-01	3.52E-02	1.44E-01	1.44E-02
Fluorene	1.66E-02	1.66E-03	1.92E-02	1.92E-03	1.28E-03	1.28E-04	1.43E-03	1.43E-04	1.30E-02	1.30E-03	1.62E-02	1.62E-03	6.62E-03	6.62E-04
Indeno(1,2,3-cd)pyrene	2.16E-01	2.16E-02	2.51E-01	2.51E-02	1.67E-02	1.67E-03	1.87E-02	1.87E-03	1.70E-01	1.70E-02	2.11E-01	2.11E-02	8.64E-02	8.64E-03
Phenanthrene	1.94E-01	1.94E-02	2.26E-01	2.26E-02	1.50E-02	1.50E-03	1.68E-02	1.68E-03	1.53E-01	1.53E-02	1.90E-01	1.90E-02	7.77E-02	7.77E-03
Pyrene	2.95E-01	2.95E-02	3.43E-01	3.43E-02	2.28E-02	2.28E-03	2.55E-02	2.55E-03	2.32E-01	2.32E-02	2.89E-01	2.89E-02	1.18E-01	1.18E-02
Pesticides/PCBs														
4,4'-DDD	2.34E-02	4.68E-03	**7.76E+01**	**7.76E+00**	**5.17E+00**	5.17E-01	**5.78E+00**	5.78E-01	1.84E-02	3.67E-03	2.29E-02	4.58E-03	9.36E-03	1.87E-03
4,4'-DDE	4.32E-03	8.64E-04	**1.43E+01**	**1.43E+00**	9.55E-01	9.55E-02	**1.07E+00**	1.07E-01	3.39E-03	6.78E-04	4.23E-03	8.45E-04	1.73E-03	3.45E-04
Aroclor-1260	**1.27E+00**	1.27E-01	**5.57E+00**	5.57E-01	3.71E-01	3.71E-02	4.15E-01	4.15E-02	9.97E-01	9.97E-02	1.24E+00	1.24E-01	5.08E-01	5.08E-02
Dieldrin	2.16E-01	2.16E-02	6.51E-01	NA	4.34E-02	NA	4.85E-02	NA	1.70E-01	1.70E-02	2.11E-01	2.11E-02	8.64E-02	8.64E-03
Inorganics														
Aluminum	**2.17E+03**	**2.17E+02**	**4.43E+02**	NA	**2.96E+01**	NA	**3.30E+01**	NA	**1.70E+03**	**1.70E+02**	**2.12E+03**	**2.12E+02**	**8.68E+02**	**8.68E+01**
Arsenic	**3.89E+00**	3.89E-01	**2.31E+00**	7.70E-01	1.54E-01	5.13E-02	1.72E-01	5.73E-02	**3.05E+00**	3.05E-01	**3.80E+00**	3.80E-01	**1.55E+00**	1.55E-01
Barium	5.48E-01	NA	**1.56E+00**	7.77E-01	1.04E-01	5.18E-02	1.16E-01	5.79E-02	4.30E-01	NA	5.36E-01	NA	2.19E-01	NA
Beryllium	8.07E-02	NA	NA	NA	NA	NA	NA	NA	6.34E-02	NA	7.90E-02	NA	3.23E-02	NA
Cadmium	3.02E-01	3.02E-02	**2.42E+00**	1.75E-01	1.61E-01	1.17E-02	1.80E-01	1.31E-02	2.37E-01	2.37E-02	2.96E-01	2.96E-02	1.21E-01	1.21E-02
Chromium	**2.56E+00**	NA	**9.74E+01**	**1.95E+01**	**6.50E+00**	**1.30E+00**	**7.25E+00**	**1.45E+00**	**2.01E+00**	NA	**2.50E+00**	NA	**1.02E+00**	NA
Cobalt	5.47E-02	1.37E-02	NA	NA	NA	NA	NA	NA	4.29E-02	1.07E-02	5.35E-02	1.34E-02	2.19E-02	5.47E-03
Copper	6.22E-01	4.80E-01	**1.80E+00**	**1.37E+00**	1.20E-01	9.12E-02	1.34E-01	1.02E-01	4.88E-01	3.77E-01	6.08E-01	4.70E-01	2.49E-01	1.92E-01
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7-10
FOOD CHAIN MODELING HAZARD QUOTIENTS FOR SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Ecological Chemical of Concern	Shrew		Robin		Hawk		Dove		Fox		Mouse		Raccoon	
	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l
Inorganics (Continued)														
Lead	**4.09E+00**	4.09E-01	**3.36E+02**	**3.36E+01**	**2.24E+01**	**2.24E+00**	**2.50E+01**	**2.50E+00**	**3.21E+00**	3.21E-01	**4.00E+00**	4.00E-01	**1.63E+00**	1.63E-01
Manganese	2.95E-01	9.13E-02	3.08E-01	NA	2.05E-02	NA	2.29E-02	NA	2.31E-01	7.16E-02	2.88E-01	8.93E-02	1.18E-01	3.65E-02
Mercury	**1.25E+00**	7.49E-01	**3.39E+01**	**3.39E+00**	**2.26E+00**	2.26E-01	**2.53E+00**	2.53E-01	9.79E-01	5.88E-01	**1.22E+00**	7.32E-01	4.99E-01	2.99E-01
Nickel	4.54E-02	2.27E-02	2.72E-01	1.97E-01	1.81E-02	1.31E-02	2.02E-02	1.46E-02	3.56E-02	1.78E-02	4.44E-02	2.22E-02	1.81E-02	9.07E-03
Silver	3.72E-02	3.72E-03	NA	NA	NA	NA	NA	NA	2.92E-02	2.92E-03	3.63E-02	3.63E-03	1.49E-02	1.49E-03
Thallium	**3.31E+00**	3.31E-01	NA	NA	NA	NA	NA	NA	NA	2.60E-01	**3.24E+00**	3.24E-01	**1.32E+00**	1.32E-01
Vanadium	**2.89E+01**	**2.89E+00**	**6.19E+00**	NA	4.12E-01	NA	4.60E-01	NA	**2.27E+01**	**2.27E+00**	**2.83E+01**	**2.83E+00**	**1.16E+01**	**1.16E+00**
Zinc	1.46E-01	7.29E-02	**1.87E+01**	**2.07E+00**	**1.24E+00**	1.38E-01	**1.39E+00**	1.54E-01	1.14E-01	5.72E-02	1.43E-01	7.13E-02	5.83E-02	2.91E-02

NA - NOAEL/LOAEL not available.

TABLE 7-11
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 30
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Frequency of Detection	Minimum Detected Concentration [1]	Maximum Detected Concentration	Location of Maximum Concentration	2X Average Background	Screening Level [2]	Hazard Quotient	COPC Y/N?
Volatiles								
1,2-Dichloroethene (total)	1/14	0.16	0.16	30B00301	NA	NA	NA	Y
2-Butanone	1/12	0.028	0.028	30B00101	NA	NA	NA	Y
Acetone	3/14	0.004	0.06	30SB6-0-2(93)	NA	NA	NA	Y
Methylene Chloride	2/14	0.004	0.015	30B00301	NA	NA	NA	Y
Toluene	1/14	0.009	0.009	30B00301	NA	0.05	0.18	N
Trichloroethene	3/14	0.005	0.18	30SB02-0-2(93)	NA	0.001	180.00	Y
Xylenes, Total	1/14	0.025	0.025	30B00301	NA	0.05	0.50	N
Semivolatiles								
2-Methylnaphthalene	4/14	0.069	4.7	30SB02-0-2(93)	NA	0.1	47.00	Y
Bis(2-Ethylhexyl)phthalate	4/14	0.046	0.16	30SB02-0-2(93)	NA	100	0.00	N
Dibenzofuran	1/14	0.22	0.22	30B00301	NA	NA	NA	Y
Fluorene	1/14	0.48	0.48	30SB02-0-2(93)	NA	0.1	4.80	Y
Naphthalene	3/14	0.14	8.6	30B00301	NA	0.1	86.00	Y
Pentachlorophenol	1/14	0.062	0.062	30B00501	NA	0.002	31.00	Y
Phenanthrene	2/14	0.12	0.3	30B00301	NA	0.1	3.00	Y
Pestcides/PCBs								
4,4'-DDD	1/8	0.0026	0.0026	30SB02-0-2(93)	NA	0.0025	1.04	Y
Dieldrin	3/8	0.0019	0.013	30SB03-0-2(93)	NA	0.0005	26.00	Y
Gamma-Chlordane	1/8	0.0004	0.0004	W30SB00901	NA	NA	NA	Y
Inorganic Chemicals								
Aluminum	8/8	8190	41600	W30SB01301	15848	50	832.00	Y
Arsenic	8/8	2.5	5.2	30SB04-0-2(93)	3.2	10	0.52	N
Barium	8/8	10	26.1	30SB7-0-2(93)	23.2	165	0.16	N
Beryllium	5/8	0.08	0.14	30SB6-0-2(93)	0.36	1.1	0.13	N
Cadmium	1/8	0.95	0.95	30SB04-0-2(93)	0.58	1.6	0.59	N
Chromium	8/8	8.4	30.7	W30SB01301	11	0.4	76.75	Y
Cobalt	7/8	0.56	4.4	30SB6-0-2(93)	3	20	0.22	N
Copper	8/8	1.1	8.4	W30SB01301	9.4	40	0.21	N
Cyanide	6/6	0.44	0.6	30SB7-0-2(93)	0.28	NA	NA	Y
Iron	8/8	7870	24100	W30SB01301	8832	200	120.50	Y

TABLE 7-11
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 2 OF 2

Chemical	Frequency of Detection	Minimum Detected Concentration (1)	Maximum Detected Concentration	Location of Maximum Concentration	2X Average Background	Screening Level (2)	Hazard Quotient	COPC Y/N?
Inorganic Chemicals (Continued)								
Lead	8/8	6.8	66	30SB04-0-2(93)	11.4	50	1.32	Y
Manganese	8/8	15.9	898	30SB7-0-2(93)	392	100	8.98	Y
Mercury	6/8	0.02	0.06	30SB5-0-2(93)	0.12	0.67	0.09	N
Selenium	5/8	1.4	2.1	30SB04-0-2(93)	0.46	0.81	2.59	Y
Silver	3/8	0.77	0.9	30SB02-0-2(93)	0.7	2	0.45	N
Vanadium	8/8	20.3	63.7	W30SB01301	21.8	2	31.85	Y
Zinc	8/8	1.6	8.8	W30SB00901	15.4	50	0.18	N

1 All values in milligrams per kilogram.
2 USEPA, 1998b.
COPC - Chemical of potential concern.

TABLE 7-12
FOOD CHAIN MODELING HAZARD QUOTIENTS FOR SITE 30
NAS WHITING FIELD, MILTON, FLORIDA

Ecological Chemical of Concern	Shrew		Robin		Hawk		Dove		Fox		Mouse		Raccoon	
	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l
Semivolatiles														
2-Methylnaphthalene	6.77E-01	6.77E-02	7.85E-01	7.85E-02	5.24E-02	5.24E-03	5.85E-02	5.85E-03	5.31E-01	5.31E-02	6.62E-01	6.62E-02	2.71E-01	2.71E-02
Bis(2-Ethylhexyl)phthalate	1.26E-03	1.26E-04	2.43E-01	NA	1.62E-02	NA	1.81E-02	NA	9.88E-04	9.88E-05	1.23E-03	1.23E-04	5.03E-04	5.03E-05
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	6.91E-02	6.91E-03	8.02E-02	8.02E-03	5.35E-03	5.35E-04	5.97E-03	5.97E-04	5.42E-02	5.42E-03	6.76E-02	6.76E-03	2.76E-02	2.76E-03
Naphthalene	**1.24E+00**	1.24E-01	**1.44E+00**	1.44E-01	9.58E-02	9.58E-03	1.07E-01	1.07E-02	9.72E-01	9.72E-02	**1.21E+00**	1.21E-01	4.95E-01	4.95E-02
Pentachlorophenol	3.72E-02	3.72E-03	NA	NA	NA	NA	NA	NA	2.92E-02	2.92E-03	3.64E-02	3.64E-03	1.49E-02	1.49E-03
Phenanthrene	4.32E-02	4.32E-03	5.01E-02	5.01E-03	3.34E-03	3.34E-04	3.73E-03	3.73E-04	3.39E-02	3.39E-03	4.23E-02	4.23E-03	1.73E-02	1.73E-03
Pesticides/PCBs														
4,4'-DDD	4.68E-04	9.36E-05	**1.55E+00**	1.55E-01	1.03E-01	1.03E-02	1.16E-01	1.16E-02	3.67E-04	7.35E-05	4.58E-04	9.16E-05	1.87E-04	3.74E-05
Dieldrin	9.36E-02	9.36E-03	2.82E-01	NA	1.88E-02	NA	2.10E-02	NA	7.35E-02	7.35E-03	9.16E-02	9.16E-03	3.74E-02	3.74E-03
Gamma-Chlordane	1.25E-05	6.26E-06	3.12E-04	6.25E-05	2.08E-05	4.17E-06	2.32E-05	4.65E-06	9.83E-06	4.91E-06	1.22E-05	6.12E-06	5.01E-06	2.50E-06
Inorganic Chemicals														
Aluminum	**3.10E+03**	**3.10E+02**	**6.34E+02**	NA	**4.23E+01**	NA	**4.72E+01**	NA	**2.44E+03**	**2.44E+02**	**3.04E+03**	**3.04E+02**	**1.24E+03**	**1.24E+02**
Arsenic	**5.94E+00**	5.94E-01	**3.53E+00**	**1.18E+00**	2.36E-01	7.85E-02	2.63E-01	8.76E-02	**4.66E+00**	4.66E-01	**5.81E+00**	5.81E-01	**2.38E+00**	2.38E-01
Barium	7.37E-01	NA	**2.10E+00**	**1.05E+00**	1.40E-01	6.97E-02	1.56E-01	7.79E-02	5.78E-01	NA	7.21E-01	NA	2.95E-01	NA
Beryllium	3.05E-02	NA	NA	NA	NA	NA	NA	NA	2.40E-02	NA	2.99E-02	NA	1.22E-02	NA
Cadmium	1.37E-01	1.37E-02	**1.09E+00**	7.94E-02	7.30E-02	5.29E-03	8.15E-02	5.91E-03	1.07E-01	1.07E-02	1.34E-01	1.34E-02	5.47E-02	5.47E-03
Chromium	**1.35E+00**	NA	**5.13E+01**	**1.03E+01**	**3.42E+00**	6.84E-01	**3.82E+00**	7.64E-01	**1.06E+00**	NA	**1.32E+00**	NA	5.39E-01	NA
Cobalt	1.27E-01	3.17E-02	NA	NA	NA	NA	NA	NA	9.95E-02	2.49E-02	1.24E-01	3.10E-02	5.07E-02	1.27E-02
Copper	1.03E-01	7.99E-02	2.99E-01	2.27E-01	1.99E-02	1.52E-02	2.22E-02	1.69E-02	8.11E-02	6.27E-02	1.01E-01	7.82E-02	4.13E-02	3.19E-02
Cyanide	1.26E-03	NA	NA	NA	NA	NA	NA	NA	9.87E-04	NA	1.23E-03	NA	5.03E-04	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	**1.19E+00**	1.19E-01	**9.76E+01**	**9.76E+00**	**6.51E+00**	6.51E-01	**7.26E+00**	7.26E-01	9.32E-01	9.32E-02	**1.16E+00**	1.16E-01	4.75E-01	4.75E-02
Manganese	**1.47E+00**	4.55E-01	**1.54E+00**	NA	1.02E-01	NA	1.14E-01	NA	**1.15E+00**	3.57E-01	**1.44E+00**	4.45E-01	5.88E-01	1.82E-01
Mercury	5.76E-01	3.46E-01	**1.57E+01**	**1.57E+00**	**1.04E+00**	1.04E-01	**1.17E+00**	1.17E-01	4.52E-01	2.71E-01	5.63E-01	3.38E-01	2.30E-01	1.38E-01
Selenium	**1.51E+00**	9.16E-01	**8.77E+00**	**4.39E+00**	5.85E-01	2.92E-01	6.53E-01	3.27E-01	**1.19E+00**	7.19E-01	**1.48E+00**	8.96E-01	6.05E-01	3.66E-01
Silver	7.16E-02	7.16E-03	NA	NA	NA	NA	NA	NA	5.62E-02	5.62E-03	7.00E-02	7.00E-03	2.86E-02	2.86E-03
Vanadium	**4.37E+01**	**4.37E+00**	**9.34E+00**	NA	6.23E-01	NA	6.95E-01	NA	**3.43E+01**	**3.43E+00**	**4.27E+01**	**4.27E+00**	**1.75E+01**	**1.75E+00**
Zinc	7.92E-03	3.96E-03	**1.01E+00**	1.12E-01	6.76E-02	7.48E-03	7.55E-02	8.36E-03	6.22E-03	3.11E-03	7.75E-03	3.87E-03	3.17E-03	1.58E-03

NA - NOAEL/LOAEL not available.

TABLE 7-13
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 2

Chemical	Frequency of Detection	Minimum Detected Concentration (1)	Maximum Detected Concentration (1)	Location of Maximum Concentration	2X Average Background	Screening Level (2)	Hazard Quotient	COPC Y/N?
Volatiles								
Acetone	4/7	0.003	0.2	32SB3-0-2(93)	NA	NA	NA	Y
Trichloroethene	2/7	0.001	0.002	32SB1-1-2(93)	NA	0.001	2.00	Y
Xylenes, Total	1/7	0.011	0.011	32SB3-0-2(93)	NA	0.05	0.22	N
Semivolatiles								
2,4-Dimethylphenol	1/7	1.5	1.5	32SB6-0-2(93)	NA	NA	NA	Y
2-Methylnaphthalene	2/7	0.62	15	32SB6-0-2(93)	NA	0.1	150.00	Y
Acenaphthene	1/7	1.4	1.4	32SB6-0-2(93)	NA	20	0.07	N
Fluoranthene	1/7	0.053	0.053	32SB3-0-2(93)	NA	0.1	0.53	N
Fluorene	1/7	2.6	2.6	32SB6-0-2(93)	NA	0.1	26.00	Y
N-Nitrosodiphenylamine	1/7	1.6	1.6	32SB6-0-2(93)	NA	NA	NA	Y
Naphthalene	2/7	1.4	2.5	32SB6-0-2(93)	NA	0.1	25.00	Y
Phenanthrene	2/7	0.063	5.1	32SB6-0-2(93)	NA	0.1	51.00	Y
Pyrene	2/7	0.036	1.2	32SB6-0-2(93)	NA	0.1	12.00	Y
Pesticides/PCBs								
4,4'-DDD	1/7	0.0022	0.0022	32SB7-0-2(93)	NA	0.0025	0.88	N
4,4'-DDE	1/7	0.0007	0.0007	32SB7-0-2(93)	NA	0.0025	0.28	N
Aroclor-1254	1/7	0.16	0.16	32SB6-0-2(93)	NA	0.02	8.00	Y
Inorganics								
Aluminum	7/7	5740	21900	32SB2-0-2(93)	15848	50	438.00	Y
Antimony	1/7	6	6	32SB2-0-2(93)	8	3.5	1.71	Y
Arsenic	6/7	0.46	2.8	32SB7-0-2(93)	3.2	10	0.28	N
Barium	7/7	7.6	15.9	32SB5-1-2(93)	23.2	165	0.10	N
Beryllium	4/7	0.06	0.22	32SB5-1-2(93)	0.36	1.1	0.20	N
Chromium	7/7	4.9	22.5	32SB1-1-2(93)	11	0.4	56.25	Y
Cobalt	5/7	0.75	1.8	32SB2-0-2(93)	3	20	0.09	N
Copper	7/7	1.6	5.7	32SB3-0-2(93)-D	9.4	40	0.14	N
Cyanide	4/7	0.46	0.58	32SB1-1-2(93)	0.28	NA	NA	Y
Iron	7/7	3350	13200	32SB2-0-2(93)	8832	200	66.00	Y
Lead	7/7	2.5	30.7	32SB7-0-2(93)	11.4	50	0.61	N
Manganese	7/7	11.2	95.5	32SB5-1-2(93)	392	100	0.96	N

TABLE 7-13
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 32
NAS WHITING FIELD, MILTON, FLORIDA

Chemical	Frequency of Detection	Minimum Detected Concentration[1]	Maximum Detected Concentration [1]	Location of Maximum Concentration	2X Average Background	Screening Level [2]	Hazard Quotient	COPC Y/N?
Inorganics (Continued)								
Mercury	6/7	0.02	0.04	32SB3-0-2(93)-D 32SB6-0-2(3) 32SB4-0-2(93)	0.12	0.67	0.06	N
Nickel	5/7	2.5	4	32SB2-0-2(93) 32SB4-02-(93)	7.2	30	0.13	N
Selenium	2/7	0.22	3.7	32SB5-1-2(93)	0.46	0.81	4.57	Y
Silver	2/7	0.69	1.2	32SB2-0-2(93)	0.7	2	0.60	N
Vanadium	7/7	8.8	36.8	32SB2-0-2(93)	21.8	2	18.40	Y
Zinc	7/7	1.9	10.6	32SB7-0-2(93)	15.4	50	0.21	N

[1] All values in milligrams per kilogram.
[2] USEPA, 1998b.
COPC - Chemical of potential concern.

maximum concentrations that exceeded USEPA Region IV screening levels (Table 7-13). Acetone, 2,4-dimethylphenol, cyanide, and N-nitrosodiphenylamine were selected as surface soil COPCs since USEPA Region IV screening levels were not available.

Food Chain Modeling

The inorganics antimony, aluminum, arsenic, barium, chromium, lead, mercury, selenium, vanadium, and zinc had at least one HQ greater than 1.0 in the food chain modeling for Site 32 (Table 7-14). The organics Aroclor-1254, 2-methylnaphthalene, and 4,4'-DDD had at least one HQ greater than 1.0.

7.5.6 Results of Screening - Site 33

Surface Soil Screening

Trichloroethene, naphthalene, and 2-methylnaphthalene were selected as organic COPCs in Site 33 surface soils since their maximum concentrations exceeded screening levels (Table 7-15). HI values were 0.32 and 29.18 for pesticides and PAHs, respectively. The inorganics aluminum, cadmium, chromium, iron, manganese, and vanadium in Site 33 surface soils had a maximum concentration that exceeded USEPA Region IV screening levels (Table 7-15). Methylene chloride, 2-butanone, 1,2-dichloroethene, and 1,1,1-trichloroethane were selected as surface soil organic COPCs since no USEPA Region IV screening levels were available.

Food Chain Modeling

Aluminum, arsenic, barium, cadmium, chromium, lead, mercury, vanadium, and zinc had at least one HQ greater than 1.0 in the food chain modeling (Table 7-16).

7.6 STEP 3A – REFINEMENT OF CHEMICALS OF POTENTIAL CONCERN

The use of conservative guidelines and maximum detected concentrations as a starting point for assessing risks in the screening-level assessment is necessary to ensure that potential risks are not underestimated. However, comparison of conservative guidelines to maximum detected concentrations as a tool for determining the need for additional ecological work, and/or a complex baseline ERA has severe limitations.

The undertaking of costly additional ecological analyses must be weighed against benefits, especially in such cases where remedial alternatives are limited or do not exist. Moreover, the environment may suffer as sites of lesser ecological significance are given the same priority as sites of clearly greater ecological

TABLE 7-14
FOOD CHAIN MODELING HAZARD QUOTIENTS FOR SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Ecological Chemical of Concern	Shrew		Robin		Hawk		Dove		Fox		Mouse		Raccoon	
	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l
Semivolatiles														
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	**2.16E+00**	2.16E-01	**2.51E+00**	2.51E-01	1.67E-01	1.67E-02	1.87E-01	1.87E-02	**1.70E+00**	1.70E-01	**2.11E+00**	2.11E-01	8.64E-01	8.64E-02
Acenaphthene	2.02E-01	2.02E-02	2.34E-01	2.34E-02	1.56E-02	1.56E-03	1.74E-02	1.74E-03	1.58E-01	1.58E-02	1.97E-01	1.97E-02	8.06E-02	8.06E-03
Fluoranthene	7.63E-03	7.63E-04	8.86E-03	8.86E-04	5.91E-04	5.91E-05	6.59E-04	6.59E-05	5.99E-03	5.99E-04	7.47E-03	7.47E-04	3.05E-03	3.05E-04
Fluorene	3.74E-01	3.74E-02	4.34E-01	4.34E-02	2.90E-02	2.90E-03	3.23E-02	3.23E-03	2.94E-01	2.94E-02	3.66E-01	3.66E-02	1.50E-01	1.50E-02
N-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	3.60E-01	3.60E-02	4.18E-01	4.18E-02	2.79E-02	2.79E-03	3.11E-02	3.11E-03	2.83E-01	2.83E-02	3.52E-01	3.52E-02	1.44E-01	1.44E-02
Phenanthrene	7.34E-01	7.34E-02	8.52E-01	8.52E-02	5.68E-02	5.68E-03	6.34E-02	6.34E-03	5.76E-01	5.76E-02	7.18E-01	7.18E-02	2.94E-01	2.94E-02
Pyrene	1.73E-01	1.73E-02	2.01E-01	2.01E-02	1.34E-02	1.34E-03	1.49E-02	1.49E-03	1.36E-01	1.36E-02	1.69E-01	1.69E-02	6.91E-02	6.91E-03
Pesticides/PCBs														
4,4'-DDD	3.96E-04	7.92E-05	**1.31E+00**	1.31E-01	8.75E-02	8.75E-03	9.77E-02	9.77E-03	3.11E-04	6.22E-05	3.87E-04	7.75E-05	1.58E-04	3.17E-05
4,4'-DDE	1.26E-04	2.52E-05	4.18E-01	4.18E-02	2.79E-02	2.79E-03	3.11E-02	3.11E-03	9.89E-05	1.98E-05	1.23E-04	2.47E-05	5.04E-05	1.01E-05
Aroclor-1254	3.39E-01	3.39E-02	**1.49E+00**	1.49E-01	9.90E-02	9.90E-03	1.11E-01	1.11E-02	2.66E-01	2.66E-02	3.31E-01	3.31E-02	1.35E-01	1.35E-02
Inorganics														
Aluminum	**1.63E+03**	**1.63E+02**	**3.34E+02**	NA	**2.22E+01**	NA	**2.48E+01**	NA	**1.28E+03**	**1.28E+02**	**1.60E+03**	**1.60E+02**	**6.53E+02**	**6.53E+01**
Antimony	**6.91E+00**	6.91E-01	NA	NA	NA	NA	NA	NA	**5.42E+00**	5.42E-01	**6.76E+00**	6.76E-01	**2.76E+00**	2.76E-01
Arsenic	**3.20E+00**	3.20E-01	**1.90E+00**	6.34E-01	1.27E-01	4.23E-02	1.42E-01	4.72E-02	**2.51E+00**	2.51E-01	**3.13E+00**	3.13E-01	**1.28E+00**	1.28E-01
Barium	4.49E-01	NA	**1.28E+00**	6.37E-01	8.52E-02	4.25E-02	9.51E-02	4.74E-02	3.52E-01	NA	4.39E-01	NA	1.80E-01	NA
Beryllium	4.80E-02	NA	NA	NA	NA	NA	NA	NA	3.77E-02	NA	4.70E-02	NA	1.92E-02	NA
Chromium	9.88E-01	NA	**3.76E+01**	**7.52E+00**	**2.51E+00**	5.01E-01	**2.80E+00**	5.60E-01	7.75E-01	NA	9.66E-01	NA	3.95E-01	NA
Cobalt	5.18E-02	1.30E-02	NA	NA	NA	NA	NA	NA	4.07E-02	1.02E-02	5.07E-02	1.27E-02	2.07E-02	5.18E-03
Copper	7.02E-02	5.42E-02	2.03E-01	1.54E-01	1.35E-02	1.03E-02	1.51E-02	1.15E-02	5.51E-02	4.25E-02	6.86E-02	5.30E-02	2.81E-02	2.17E-02
Cyanide	1.22E-03	NA	NA	NA	NA	NA	NA	NA	9.54E-04	NA	1.19E-03	NA	4.86E-04	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.53E-01	5.53E-02	**4.54E+01**	**4.54E+00**	**3.03E+00**	3.03E-01	**3.38E+00**	3.38E-01	4.34E-01	4.34E-02	5.41E-01	5.41E-02	2.21E-01	2.21E-02
Manganese	1.56E-01	4.84E-02	1.63E-01	NA	1.09E-02	NA	1.22E-02	NA	1.23E-01	3.80E-02	1.53E-01	4.74E-02	6.25E-02	1.94E-02
Mercury	3.84E-01	2.30E-01	**1.04E+01**	**1.04E+00**	6.96E-01	6.96E-02	7.77E-01	7.77E-02	3.01E-01	1.81E-01	3.76E-01	2.25E-01	1.54E-01	9.21E-02
Nickel	1.44E-02	7.20E-03	8.64E-02	6.25E-02	5.76E-03	4.17E-03	6.43E-03	4.65E-03	1.13E-02	5.65E-03	1.41E-02	7.04E-03	5.76E-03	2.88E-03
Selenium	**2.66E+00**	**1.61E+00**	**1.55E+01**	**7.73E+00**	**1.03E+00**	5.15E-01	**1.15E+00**	5.75E-01	**2.09E+00**	**1.27E+00**	**2.61E+00**	**1.58E+00**	**1.07E+00**	6.46E-01
Silver	9.55E-02	9.55E-03	NA	NA	NA	NA	NA	NA	7.49E-02	7.49E-03	9.34E-02	9.34E-03	3.82E-02	3.82E-03
Vanadium	**2.52E+01**	**2.52E+00**	**5.39E+00**	NA	3.60E-01	NA	4.02E-01	NA	**1.98E+01**	**1.98E+00**	**2.47E+01**	**2.47E+00**	**1.01E+01**	**1.01E+00**
Zinc	9.54E-03	4.77E-03	**1.22E+00**	1.35E-01	8.15E-02	9.02E-03	9.09E-02	1.01E-02	7.49E-03	3.74E-03	9.33E-03	4.67E-03	3.81E-03	1.91E-03

NA - NOAEL/LOAEL not available.

TABLE 7-15
SELECTION OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN - SITE 33
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemical	Frequency of Detection	Minimum Detected Concentration(1)	Maximum Detected Concentration(1)	Location of Maximum Concentration	2X Average Background	Screening Level(2)	Hazard Quotient	COPC Y/N?
Volatiles								
1,1,1-Trichloroethane	1/5	0.001	0.001	33B00301	NA	NA	NA	Y
1,2-Dichloroethene (total)	2/5	0.002	0.002	33B00201 33B00301	NA	NA	NA	Y
2-Butanone	1/4	0.004	0.004	33B00301	NA	NA	NA	Y
Methylene Chloride	3/5	0.002	0.003	33B00101	NA	NA	NA	Y
Tetrachloroethene	1/5	0.002	0.002	33B00301	NA	0.01	0.20	N
Trichloroethene	4/5	0.014	0.13	33B00201	NA	0.001	130.00	Y
Xylenes, Total	1/5	0.011	0.011	33SB5-0-2(92)-D	NA	0.05	0.22	N
Semivolatiles								
2-Methylnaphthalene	1/5	2	2.5	33SB5-0-2(92)-D	NA	0.1	25.00	Y
Fluorene	1/5	0.068	0.068	33SB5-0-2(92)-D	NA	0.1	0.68	N
Naphthalene	1/5	0.27	0.35	33SB5-0-2(92)-D	NA	0.1	3.50	Y
Pesticides/PCBs								
4,4'-DDE	1/3	0.0002	0.0002	W33SB00601	NA	0.0025	0.08	N
4,4'-DDT	1/3	0.0006	0.0006	W33SB00601	NA	0.0025	0.24	N
Inorganic Chemicals								
Aluminum	2/2	11400	28400	33SB5-0-2(92)-D	15848	50	568.00	Y
Arsenic	2/2	2.6	2.8	33SB5-0-2(92)-D	3.2	10	0.28	N
Barium	2/2	11.2	23.2	W33SB00601	23.2	165	0.14	N
Cadmium	2/2	0.39	2.2	W33SB00601	0.58	1.6	1.38	Y
Chromium	2/2	11.9	19	33SB5-0-2(92)-D	11	0.4	47.50	Y
Cobalt	2/2	1.2	1.7	33SB5-0-2(92)-D	3	20	0.09	N
Copper	2/2	4.7	8	W33SB00601	9.4	40	0.20	N
Iron	2/2	6560	14400	33SB5-0-2(92)-D	8832	200	72.00	Y
Lead	5/5	6.1	15.9	W33SB00601	11.4	50	0.32	N
Manganese	2/2	89.7	150	W33SB00601	392	100	1.50	Y
Mercury	1/2	0.07	0.17	33SB5-0-2(92)	0.12	0.67	0.25	N
Nickel	2/2	3.2	3.5	W33SB00601	7.2	30	0.12	N
Selenium	1/2	0.22	0.22	33SB5-0-2(92)-D	0.46	0.81	0.27	N
Vanadium	2/2	18.3	39.6	33SB5-0-2(92)-D	21.8	2	19.80	Y
Zinc	2/2	6.1	21.9	W33SB00601	15.4	50	0.44	N

1 All values in milligrams per kilogram.

2 USEPA, 1998b.

COPC - Chemical of potential concern.

TABLE 7-16
FOOD CHAIN MODELING HAZARD QUOTIENTS SITE 33
NAS WHITING FIELD, MILTON, FLORIDA

Ecological Chemical of Concern	Shrew		Robin		Hawk		Dove		Fox		Mouse		Raccoon	
	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l	NOAEL HQ_n	LOAEL HQ_l
Semivolatiles														
2-Methylnaphthalene	3.60E-01	3.60E-02	4.18E-01	4.18E-02	2.79E-02	2.79E-03	3.11E-02	3.11E-03	2.83E-01	2.83E-02	3.52E-01	3.52E-02	1.44E-01	1.44E-02
Fluorene	9.79E-03	9.79E-04	1.14E-02	1.14E-03	7.58E-04	7.58E-05	8.46E-04	8.46E-05	7.68E-03	7.68E-04	9.58E-03	9.58E-04	3.92E-03	3.92E-04
Naphthalene	5.04E-02	5.04E-03	5.85E-02	5.85E-03	3.90E-03	3.90E-04	4.35E-03	4.35E-04	3.96E-02	3.96E-03	4.93E-02	4.93E-03	2.02E-02	2.02E-03
Pesticides/PCBs														
4,4'-DDE	3.60E-05	7.20E-06	1.19E-01	1.19E-02	7.96E-03	7.96E-04	8.88E-03	8.88E-04	2.83E-05	5.65E-06	3.52E-05	7.04E-06	1.44E-05	2.88E-06
4,4'-DDT	1.08E-04	2.16E-05	3.58E-01	3.58E-02	2.39E-02	2.39E-03	2.67E-02	2.67E-03	8.48E-05	1.70E-05	1.06E-04	2.11E-05	4.32E-05	8.64E-06
Inorganic Chemicals														
Aluminum	**2.12E+03**	**2.12E+02**	**4.33E+02**	NA	**2.88E+01**	NA	**3.22E+01**	NA	**1.66E+03**	**1.66E+02**	**2.07E+03**	**2.07E+02**	**8.47E+02**	**8.47E+01**
Arsenic	**3.20E+00**	3.20E-01	**1.90E+00**	6.34E-01	1.27E-01	4.23E-02	1.42E-01	4.72E-02	**2.51E+00**	2.51E-01	**3.13E+00**	3.13E-01	**1.28E+00**	1.28E-01
Barium	6.55E-01	NA	**1.86E+00**	9.30E-01	1.24E-01	6.20E-02	1.39E-01	6.92E-02	5.14E-01	NA	6.41E-01	NA	2.62E-01	NA
Cadmium	3.17E-01	3.17E-02	**2.54E+00**	1.84E-01	1.69E-01	1.23E-02	1.89E-01	1.37E-02	2.49E-01	2.49E-02	3.10E-01	3.10E-02	1.27E-01	1.27E-02
Chromium	8.34E-01	NA	**3.17E+01**	**6.35E+00**	**2.12E+00**	4.23E-01	**2.36E+00**	4.73E-01	6.55E-01	NA	8.16E-01	NA	3.34E-01	NA
Cobalt	4.90E-02	1.22E-02	NA	NA	NA	NA	NA	NA	3.84E-02	9.61E-03	4.79E-02	1.20E-02	1.96E-02	4.89E-03
Copper	9.85E-02	7.61E-02	2.84E-01	2.17E-01	1.90E-02	1.44E-02	2.12E-02	1.61E-02	7.73E-02	5.97E-02	9.63E-02	7.44E-02	3.94E-02	3.04E-02
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	2.86E-01	2.86E-02	**2.35E+01**	**2.35E+00**	**1.57E+00**	1.57E-01	**1.75E+00**	1.75E-01	2.25E-01	2.25E-02	2.80E-01	2.80E-02	1.14E-01	1.14E-02
Manganese	2.45E-01	7.61E-02	2.57E-01	NA	1.71E-02	NA	1.91E-02	NA	1.93E-01	5.97E-02	2.40E-01	7.44E-02	9.81E-02	3.04E-02
Mercury	**1.63E+00**	9.79E-01	**4.44E+01**	**4.44E+00**	**2.96E+00**	2.96E-01	**3.30E+00**	3.30E-01	**1.28E+00**	7.68E-01	**1.60E+00**	9.58E-01	6.53E-01	3.92E-01
Nickel	1.26E-02	6.30E-03	7.56E-02	5.47E-02	5.04E-03	3.64E-03	5.62E-03	4.07E-03	9.89E-03	4.94E-03	1.23E-02	6.16E-03	5.04E-03	2.52E-03
Selenium	1.58E-01	9.60E-02	9.19E-01	4.60E-01	6.13E-02	3.06E-02	6.84E-02	3.42E-02	1.24E-01	7.53E-02	1.55E-01	9.39E-02	6.33E-02	3.84E-02
Vanadium	**2.72E+01**	**2.72E+00**	**5.80E+00**	NA	3.87E-01	NA	4.32E-01	NA	**2.13E+01**	**2.13E+00**	**2.66E+01**	**2.66E+00**	**1.09E+01**	**1.09E+00**
Zinc	1.97E-02	9.86E-03	**2.52E+00**	2.79E-01	1.68E-01	1.86E-02	1.88E-01	2.08E-02	1.55E-02	7.73E-03	1.93E-02	9.64E-03	7.88E-03	3.94E-03

NA - NOAEL/LOAEL not available.

concern. For these reasons, the consideration of other relevant factors for COPCs from Steps 1 and 2 should be employed as part of the ERA process. USEPA and the Navy (DON, 1999) consider the evaluation of these factors as part of Step 3 in the 8-step process, or "Step 3A, Refinement of Contaminants of Potential Concern."

Several factors to be considered in Step 3A that are outside the boundaries of simple concentration/guideline comparisons have already been mentioned, including the use of LOAELs in the food chain modeling.

Background data were evaluated as part of Step 3A. In accordance with USEPA Region IV guidance, all detected inorganic chemicals at each site were compared to two times the average concentration detected in background samples. Emphasis was placed on comparisons of average detected concentrations at each site to two times the average background concentrations, although maximum concentration comparisons are mentioned, when appropriate. Background data were obtained from the background investigation at NAS Whiting Field. Background data collected in NAS Whiting Field soils that were similar in type to soils on the six sites being evaluated were used in this ERA.

The frequency of detection and the spatial relationship of concentrations exceeding guidelines were evaluated in this ERA. Evaluation of these items allows for determination of whether potential risks are widespread or limited to a small area. The magnitude of the HQs was also evaluated. As described earlier, the relationship between the magnitude of a HQ and toxicity is not necessarily linear. However, the magnitude of an HQ can be used as rough approximation of the extent of potential risks. Also, USEPA Region IV guidelines are designed to be conservative Therefore, less conservative. guidelines are presented for surface soils when contaminant concentrations exceed USEPA Region IV screening levels (COPCs).

Less conservative guidelines presented in this ERA include ORNL surface soil screening levels indicative of toxicity to soil invertebrates and terrestrial plants (Efroymson et al., 1997a, 1997b). In addition, Dutch intervention values are presented (MHSP&E, 1994). The intervention values replace the 1990 C values and represent "the concentration levels of the contaminants in the soil...above which the functionality of the soil for human, plant, and animal life is seriously impaired or threatened." The Dutch B values were discontinued in the Dutch 1994 document. Similar values can be calculated using methods described in the 1994 Dutch document that take into account site-specific parameters (e.g., soil organic carbon) but were beyond the scope of this ERA. The 1994 intervention values also take into account ecotoxicological considerations. Interpretation of an exceedance of an alternate guideline is subjective and difficult due to the different endpoints associated with these guidelines and the occasional wide range of guideline concentrations. As a loose guide, if the average concentration exceeded one of more of the alternate guidelines, potential risks were considered to be unacceptable (in the absence of other factors).

The quality and quantity of habitat at the six sites are discussed in Step 3A. As a conservative measure, the preliminary risks associated with Sites 30, 32, and 33 were assessed even though these sites are almost totally covered with concrete or asphalt pavement. Sites 3, 4, and 6 contain only some turfgrass and scattered ornamental trees. Although some small stands of pines are located near a few of the sites, none of the sites contain any trees or weedy vegetation (i.e., oldfield) that could provide cover or food. All of the sites are characterized by heavy and consistent human activity, including extensive aircraft operations.

Also, the SSF and fraction of the year the receptor could be found on the site are relevant issues to consider. It is unlikely that the SSFs are 1.0 for some, if any, of the wildlife receptors since the sites are small, paved, and contain only turfgrass for vegetation. In fact, the home ranges of several of the receptors are several orders of magnitude larger than some of the sites. Effects of using these and other less conservative assumptions (e.g., averages, literature-based bioavailability) in the food chain modeling are discussed qualitatively in Step 3A and semi-quantitatively in the uncertainties (Section 7.7). When an HQ of approximately 10 or higher was generated for a chemical in the food chain modeling, it was assumed, based on past experience, that the HQ would probably remain greater than 1.0 if less conservative assumptions were used. HQs of 10 or less will usually drop to near or below unity if less conservative assumptions are used.

Note, however, this is not always the case and should be evaluated on a COPC-specific basis. For example, the short-tailed shrew has a small home range and, thus, the use of a literature-based home range would have minimal effect on the HQs. Nevertheless, the combination of literature-based bioavailability, average concentrations, larger (midpoint) body size, and lower (midpoint) ingestion rates will usually lower an HQ considerably.

The foregoing factors were evaluated using "weight-of-evidence" approach (USEPA, 1997b) to determine the extent of potential risks for the COPCs. The preliminary risks associated with sites 3, 4, 6, 30, 32, and 33 after Step 3A considerations are discussed in the following sections. Step 3A tables are presented that contain data such as average concentrations and alternative guidelines for COPCs from the screening and food chain modeling. Conclusions regarding the potential risks associated with Sites 3, 4, 6, 30, 32, and 33 and recommendations for additional ecological study or remedial considerations are presented in Section 7.8.

7.6.1 Step 3A – Site 3

Step 3A considerations for Site 3 are discussed below on a COPC-specific basis.

Aluminum

Aluminum exceeded its USEPA Region IV surface soil screening level and had at least one HQ greater than 1.0 in the terrestrial food chain modeling. As summarized in Venugopal and Luckey (1978), aluminum is not readily absorbed through the skin and gastrointestinal absorption of ingested aluminum is poor due to the transformation of aluminum salts into insoluble aluminum phosphate. Another factor in the lack of accumulation of aluminum in animals with age or the absence of any increase in tissue levels of aluminum following fairly high dietary intake may be mammals possess a homeostatic mechanism for this element. For most terrestrial organisms, aluminum compounds are generally not harmful and are considered to be toxicologically inert, except in cases of high experimental doses or prolonged inhalation (Venugopal and Luckey, 1978). For these reasons, aluminum should be dropped from further consideration at Site 3.

Arsenic

Arsenic was a COPC in the terrestrial food chain modeling, but was not a COPC in the screening. The average concentration of arsenic in surface soils was much less than all of the alternative guidelines presented on Table 7-17, including the ORNL guidelines and the Dutch Intervention guideline. The maximum concentration of arsenic (5.5 mg/kg) is only slightly higher than two times the average background concentration (3.2 mg/kg, Table 7-17). HQs greater than 1.0 from the food chain modeling (6.29 or less) would likely drop to near or below unity if less conservative assumptions were used, including literature-based home ranges/bioavailability estimates (see Section 7.7.3) and the average concentration of 2.3 mg/kg, which is less than two times the average background concentration. For these reasons, arsenic should be dropped from further consideration at Site 3.

Barium

Barium had one HQ greater than 1.0 in the food chain modeling, but was not a screening COPC. Barium is a common element in surface soils and is not generally associated with significant toxicity (ATSDR, 1997). The average concentration of barium was much less than all of the alternate guidelines presented on Table 7-17, and was less than two times the average background concentration of 23.2 mg/kg (Table 7-17). For these reasons, barium should be dropped from further consideration at Site 3.

Chromium

Chromium was a COPC in surface soil screening and the food chain modeling. The average concentration of chromium in surface soils (12.8 mg/kg) was greater than three of the four alternative

TABLE 7-17
STEP 3A REFINEMENT OF COPCs - SITE 3
NAS WHITING FIELD, MILTON, FLORIDA

Chemicals of Potential Concern	Average Concentration[1,2]	2X Average Background	ORNL Earthworm Benchmark	ORNL Soil Microbe Benchmark	ORNL Phytotoxicity Benchmark	Dutch Intervention Value[3]
Volatiles						
2-Butanone	0.00543	NA	NA	NA	NA	NA
Acetone	0.018	NA	NA	NA	NA	NA
Tetrachloroethene	0.0047	NA	NA	NA	NA	4
Semivolatiles						
Chrysene	0.174	NA	NA	NA	NA	40
Fluoranthene	0.187	NA	NA	NA	NA	40
Pyrene	0.181	NA	NA	NA	NA	40
Pesticides/PCBs						
4,4'-DDD	0.00244	NA	NA	NA	NA	4
4,4'-DDE	0.00195	NA	NA	NA	NA	4
Alpha-chlordane	0.00205	NA	NA	NA	NA	NA
Dieldrin	0.00788	NA	NA	NA	NA	NA
Gamma-chlordane	0.00293	NA	NA	NA	NA	NA
Heptachlor epoxide	0.00405	NA	NA	NA	NA	NA
Inorganic Chemicals						
Aluminum	11161	15848	NA	600	50	NA
Arsenic	2.3	3.2	60	100	10	55
Barium	10.4	23.2	NA	3000	500	625
Chromium	12.8	11	0.4	10	1	380
Cyanide	0.245	0.28	NA	NA	NA	20
Iron	7268	8832	NA	200	NA	NA
Lead	5.5	11.4	500	900	50	530
Manganese	72.5	392	NA	100	500	NA
Mercury	0.03	0.12	0.1	30	0.3	10
Selenium	0.815	0.46	70	100	1	NA
Thallium	0.55	1.16	NA	NA	1	NA
Vanadium	18.98	21.8	NA	20	2	NA
Zinc	6.6	15.4	200	100	50	720

[1] All values are in mg/kg.
[2] Average of all samples.
[3] Values for PAHs, PCBs, phthalates, DDT/DDD/DDE, and dieldrin are for the total of all compounds in each class.
ORNL - Oak Ridge National Laboratory.
NA - not available.

guidelines presented on Table 7-17. However, these guidelines appear to be highly conservative because they are less than two times the average background concentration (Table 7-17). The average concentration of chromium in surface soils is slightly higher than two times the average background concentration (Table 7-17). It is unlikely all of the HQs food chain modeling would drop to near or below unity if less conservative assumptions were used. This is the case mainly for avian species, which generally had higher HQs than those for mammals. For these reasons, chromium probably poses some potential risks to biota, mainly via the food chain.

Cyanide

Cyanide was a screening COPC because no USEPA Region IV screening level was available. Its average (and maximum) concentration was less than the one alternate guideline available (Table 7-17). The average concentration of cyanide was less than two times the average background concentration. For these reasons, cyanide should be dropped from further consideration at Site 3.

Iron

Iron was a COPC in surface soil screening; no TRVs were available for the food chain modeling. Iron is an essential nutrient and is one of the most common elements in the earth's crust (fourth most abundant). It is rarely toxic in any medium at normal pH. For these reasons, iron should be dropped from further consideration at Site 3.

Lead

Lead was a COPC in the food chain modeling, but was not a COPC in the screening. The average concentration of lead in surface soils was approximately an order of magnitude less than all of the alternate guidelines presented Table 7-17. The average concentration of lead is also less than two times the average background concentration (Table 7-17). It is unlikely that the NOAEL HQ for lead for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, but it is likely that the other HQs (2.14 or less) would. The robin, due to its migratory nature, would be expected to be present on the base for only a portion of the year (i.e., winter), and, therefore, the robin would not be expected to breed in the region of the base (USEPA, 1993b). The robin was selected in this ERA to be representative of omnivorous species of birds. Other species of omnivorous birds would be found on the base only during winter as well. For these reasons, lead should be dropped from further consideration at Site 3.

Manganese

Manganese was a COPC in surface soil. Manganese is a common element in the earth's crust and an essential nutrient. Alternate guidelines for manganese are scarce, but the maximum HQ for manganese is surface soils was relatively low (1.51). The average concentration of manganese was less than two times the average background concentration (Table 7-17). For these reasons, manganese should be dropped from further consideration at Site 3.

Mercury

Mercury was a COPC in the food chain modeling, but was not a COPC in the screening. The average (and maximum) concentration of mercury in surface soils was less than all of the alternate guidelines presented on Table 7-17. The average (and maximum) concentration of mercury is also less than two times the average background concentration (Table 7-17). It is unlikely the NOAEL HQ for mercury for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, but it is likely that the other HQs (1.57 or less) would. The ecology of the robin was discussed previously. For these reasons, mercury should be dropped from further consideration at Site 3.

Selenium

Selenium was a screening and food chain modeling COPC. The average concentration of selenium in surface soils was less than all of the alternate guidelines presented on Table 7-17. The average concentration of selenium slightly exceeds two times the average background concentration (Table 7-17). It is unlikely that the NOAEL HQ for selenium for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, but it is likely the other HQs (5.64 or less) would. The ecology of the robin was discussed earlier. Selenium can be harmful at elevated concentrations, but is an essential nutrient. For these reasons, selenium should be dropped from further consideration at Site 3.

Thallium

Thallium was a food chain modeling COPC, but was not a screening COPC. The average (and maximum) concentration of thallium in Site 3 surface soils was less than the one alternate guideline available (Table 7-17). The average (and maximum) concentration of thallium was also less than two times the average background concentration (Table 7-17). Also, the HQs greater than 1.0 in the food chain modeling (2.92 or less) would likely drop to near or below unity if less conservative assumptions were used. For these reasons, thallium should be dropped from further consideration at Site 3.

Vanadium

Vanadium was a COPC in surface soil and the food chain modeling. The average concentration of vanadium exceeded one of the two alternate guidelines available (Table 7-17). The average concentration of vanadium was less than two times the average background concentration (Table 7-17). It is unlikely all of the HQs for vanadium in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling. However, vanadium is a common element found in all types of substrates (ATSDR, 1997). It can also be found in all types of organisms due to its ubiquitous nature (Klaassen et al., 1986). Toxicity data for this element are scarce, but it is not generally considered to be toxic in the environment (Mailman, 1980). For these reasons, vanadium should be dropped from further consideration as a COPC at Site 3.

Zinc

Zinc was a COPC in food chain modeling, but not in the screening. The average (and maximum) concentration of zinc in surface soils was less than all of the alternate guidelines available (Table 7-17). The average (and maximum) concentration of zinc was also less than two times the average background concentration (Table 7-17). Also, zinc is one of the most common elements in the earth's crust and is found naturally in all types of higher-level organisms. Zinc released into soil is likely to be strongly absorbed, reducing bioavailability. The mobility of zinc in soil is dependent upon the solubility of the speciated forms of the compound and on the soil properties (sorption potential, pH, and salinity; anaerobic). Little land-disposed zinc is in a soluble form; therefore, mobility is limited. For these reasons, zinc should be dropped from further consideration at Site 3.

Organics

Chrysene, fluoranthene, and pyrene (all PAHs) were screening COPCs, although no SVOCs were food chain modeling COPCs. No alternate guidelines were available for individual PAHs in surface soils, although a guideline for total PAHs was obtained (Table 7-17). The total of the maximum concentrations of COPC PAHs and all detected PAHs was an order of magnitude less than the one alternate guideline for total PAHs (Table 7-17). Also, the HQs from the screening were all relatively low (2.2 or less) and the three COPC were detected only in one of seven samples. Also, PAHs have strong affinities for organic carbon in surface soils, generally reducing their bioavailability. Although PAHs can accumulate in terrestrial organisms, most organisms are able to metabolize and eliminate these compounds. Vertebrates can readily metabolize most PAHs (ATSDR, 1990). For these reasons, PAHs should be dropped from further consideration at Site 3.

The pesticides, 4,4'-DDD, 4,4'-DDE, and dieldrin were screening COPCs, and 4,4'-DDD and 4,4'-DDE were also food chain COPCs. The HQs for 4,4'-DDD and 4,4'-DDE from both the screening (1.68 or less) and modeling (2.51 or less) were quite low. The screening HQs would likely be less than one using the average concentrations, and the food chain modeling COPCs would likely drop to less than 1.0 using less conservative assumptions. The total concentrations for DDD/DDT/DDE (maximums) were orders of magnitude less than the one alternative guideline available for the total of these compounds (Table 7-17). No alternative guidelines were available for dieldrin. Again, dieldrin had no HQs greater than 1.0 in the food chain modeling and, qualitatively, the maximum appears to be relatively low (0.04 mg/kg). No guidelines were available for alpha- and gamma-chlordane or heptachlor epoxide, but their maximum concentrations appear to be qualitatively low (0.03 mg/kg or less). For these reasons, pesticides should be dropped from further consideration at Site 3.

The compounds 2-butanone, acetone, and tetrachloroethene were each detected in surface soil, and no guidelines were available. Acetone is a common laboratory contaminant. Also, as VOCs it is unlikely these compounds would bioaccumulate or biomagnify. For these reasons, these organics should be dropped from further consideration at Site 3.

Habitat Considerations

Regardless of chemical contamination of surface soil at Site 3, the quality and quantity of the terrestrial habitat at Site 3 are limited and of poor quality. The site is relatively small in size (see Figure 1-3) and is comprised of asphalt and mowed turfgrass. The entire area is surrounded by intensive development, with the exception of some turfgrass to the south. In addition, propeller plane and vehicle traffic is heavy on and adjacent to the site. As a result, the area is characterized by loud noise, which would deter terrestrial wildlife from using the turfgrass areas. Although some types of wildlife can become accustomed to heavy human activity, no habitat is present on or near Site 3 to attract anything but an occasional transient songbird or small mammal.

7.6.2 Step 3A – Site 4

Step 3A considerations for Site 4 are discussed below on a COPC-specific basis.

The ecotoxicological significance of aluminum, barium, iron, manganese, vanadium, and zinc was discussed previously. For terrestrial toxicological reasons, these inorganic COPCs should be dropped from further consideration at Site 4.

Arsenic

Arsenic was a food chain modeling COPC, but was not a screening COPC. Its maximum concentration slightly exceeded two times the average background concentration (Table 7-18). Its average concentration was less than two times the average background concentration, and its average (and maximum) concentration was less than all of the alternate guidelines available (Table 7-18). It is likely the HQs greater than 1.0 in the food chain modeling (6.29 or less) would drop to near or below unity if less conservative assumptions were used. For these reasons, arsenic should be dropped from further consideration at Site 4.

Chromium

Chromium was a COPC in surface soil screening and the food chain modeling. The average concentration of chromium in surface soils (10.5 mg/kg) was greater than three of the four alternative guidelines presented on Table 7-18. However, these guidelines appear to be highly conservative because they are less than two times the average background concentration (Table 7-18). The average concentration of chromium in Site 4 surface soils is less than two times the average background concentration. It is unlikely all of the HQs food chain modeling would drop to near or below unity if less conservative assumptions were used. This is the case mainly for avian species, which generally had higher HQs than those for mammals. For these reasons, chromium probably poses some potential risks to biota, mainly via the food chain.

Lead

Lead was a COPC in the food chain modeling, but was not a COPC in the screening. The average concentration of lead in surface soils was approximately an order of magnitude less than all of the alternate guidelines presented on Table 7-18. The average concentration of lead is also less than two times the average background concentration (Table 7-18). It is unlikely the NOAEL HQ for lead for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, but it is likely the other HQs (2.84 or less) would. The robin's ecology was discussed previously. For these reasons, lead should be dropped from further consideration at Site 4.

Mercury

Mercury was a COPC in the food chain modeling, but was not a COPC in the screening. The average (and maximum) concentration of mercury in surface soils was less than all of the alternate guidelines

TABLE 7-18
STEP 3A REFINEMENT OF COPCs - SITE 4
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemicals of Potential Concern	Average Concentration[1,2]	2X Average Background	ORNL Earthworm Benchmark	ORNL Soil Microbe Benchmark	ORNL Phytotoxicity Benchmark	Dutch Intervention Value[3]
Volatiles						
Carbon disulfide	0.00245	NA	NA	NA	NA	NA
Acetone	0.101		NA	NA	NA	NA
Semivolatiles						
Chrysene	0.167	NA	NA	NA	NA	40
N-nitroso-di-n-propylamine	0.011	NA	NA	NA	NA	NA
Pesticides/PCBs						
4,4'-DDE	0.0074	NA	NA	NA	NA	4
4,4'-DDT	0.00508	NA	NA	NA	NA	4
Dieldrin	0.0156	NA	NA	NA	NA	NA
Inorganic Chemicals						
Aluminum	13549.1	15848	NA	600	50	NA
Arsenic	2.4	3.2	60	100	10	55
Barium	11.4	23.2	NA	3000	500	625
Chromium	10.5	11	0.4	10	1	380
Iron	6978	8832	NA	200	NA	NA
Lead	8.6	11.4	500	900	50	530
Manganese	78.1	392	NA	100	500	NA
Mercury	0.017	0.12	0.1	30	0.3	10
Vanadium	19.38	21.8	NA	20	2	NA
Zinc	7.8	15.4	200	100	50	720

[1] All values are in mg/kg.
[2] Average of all samples.
[3] Values for PAHs, PCBs, phthalates, DDT/DDD/DDE, and dieldrin are for the total of all compounds in each class.
ORNL - Oak Ridge National Laboratory.
NA - not available.

presented on Table 7-18. The average (and maximum) concentration of mercury is also less than two times the average background concentration (Table 7-18). It is likely the NOAEL HQ for mercury for the robin (the only HQ greater than 1.0) in food chain modeling (7.83) would drop to near or below unity if less conservative assumptions were used in the food chain modeling. Also, the robin's ecology in relation to the food chain modeling was discussed previously. For these reasons, mercury should be dropped from further consideration at Site 4.

Organics

Chrysene was a screening COPC, although no SVOCs were food chain modeling COPCs. No alternate guidelines were available for individual PAHs in surface soils, although a guideline for total PAHs was obtained (Table 7-18). The total of the maximum concentrations of the one COPC PAHs and all detected PAHs were an order of magnitude less than the one alternate guideline for total PAHs (Table 7-18). Also, the HQs for chrysene from the screening were all relatively low (1.1). The terrestrial ecotoxicology of PAHs was discussed previously. No screening levels or TRVs were available for N-nitroso-di-n-phenylamine. It was detected in 1 of 11 samples at what appears to be a qualitatively low concentration (0.01 mg/kg). For these reasons, SVOCs should be dropped from further consideration at Site 4.

The pesticides, 4,4'-DDT, 4,4'-DDE, and dieldrin were screening and food chain COPCs. It is unlikely all of the HQs greater than 1.0 in the food chain modeling would drop to near or below unity if less conservative assumptions were used. This is the case mainly for the robin, whose ecology was described previously. The total concentrations for DDD/DDT/DDE (maximums) were orders of magnitude less than the one alternative guideline available for the total of these compounds (Table 7-18). No alternative guidelines were available for dieldrin. Dieldrin had one HQ greater than 1.0 in the food chain modeling and it was relatively low (1.84 for the robin). For these reasons, pesticides should be dropped from further consideration at Site 4.

The compounds carbon disulfide and acetone were each detected in surface soil, and no guidelines were available. Acetone is a common laboratory contaminant. Also, as VOCs it is unlikely these compounds would biaccumulate or biomagnify. As a result, these organics should be dropped from further consideration at Site 4.

Habitat Considerations

Regardless of chemical contamination of surface soil at Site 4, the quality and quantity of the terrestrial habitat at Site 4 are limited and of poor quality. The site is relatively small in size (see Figure 1-3) and is comprised mainly of mowed turfgrass with no trees. The entire area is surrounded by intensive development, with the exception of some turfgrass to the east. In addition, propeller plane and vehicle traffic is heavy on and adjacent to the site. As a result, the area is characterized by loud noise, which would deter terrestrial wildlife from using the turfgrass areas. Although some types of wildlife can become accustomed to heavy human activity, no habitat is present on or near Site 4 to attract anything but an occasional transient songbird or small mammal.

7.6.3 Step 3A – Site 6

Step 3A considerations for Site 6 are discussed below on a COPC-specific basis.

The ecotoxicological significance of aluminum, barium, iron, manganese, vanadium, and zinc was discussed previously. For terrestrial toxicological reasons, these inorganic COPCs should be dropped from further consideration at Site 6.

Arsenic

Arsenic was a COPC in the terrestrial food chain modeling, but was not a COPC in the screening. The arsenic concentration of arsenic in surface soils was much less than all of the alternative guidelines presented on Table 7-19, including the ORNL guidelines and the Dutch Intervention guideline. The maximum concentration of arsenic (3.4 mg/kg) is only slightly higher than two times the average background concentration (3.2 mg/kg, Table 7-19). HQs greater than 1.0 from the food chain modeling (3.89 or less) would likely drop to near or below unity if less conservative assumptions were used, including literature-based home ranges/bioavailability estimates and the average concentration of 2.8 mg/kg, which is less than two times the average background concentration. For these reasons, arsenic should be dropped from further consideration at Site 6.

Cadmium

Cadmium was a COPC in surface soil screening and the food chain modeling. The screening and one food chain modeling HQ greater than 1.0 were both relatively low, 1.31 and 2.42, respectively. The average concentration of cadmium (and maximum concentration) in surface soils was less than the four alternative guidelines presented on Table 7-19. It is likely the one HQ greater than 1.0 in the food chain modeling would drop to near or below unity if less conservative assumptions were used. For these reasons, cadmium should be dropped from further consideration at Site 6.

Chromium

Chromium was a COPC in surface soil screening and the food chain modeling. The average concentration of chromium in surface soils (34.9 mg/kg) was greater than three of the four alternative

TABLE 7-19
STEP 3A REFINEMENT OF COPCs - SITE 6
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemicals of Potential Concern	Average Concentration[1,2]	2X Average Background	ORNL Earthworm Benchmark	ORNL Soil Microbe Benchmark	ORNL Phytotoxicity Benchmark	Dutch Intervention Value[3]
Volatiles						
2-Butanone	0.0052	NA	NA	NA	NA	NA
Semivolatiles						
Anthracene	0.178	NA	NA	NA	NA	40
Benzo(a)anthracene	0.678	NA	NA	NA	NA	40
Benzo(a)pyrene	0.711	NA	NA	NA	NA	40
Benzo(b)fluoranthene	0.811	NA	NA	NA	NA	40
Benzo(g,h,i)perylene	0.471	NA	NA	NA	NA	40
Benzo(k)fluoranthene	0.661	NA	NA	NA	NA	40
Bis(2-Ethylhexyl)phthalate	0.485	NA	NA	NA	NA	60
Carbazole	0.221	NA	NA	NA	NA	NA
Chrysene	0.761	NA	NA	NA	NA	40
Dibenzo(a,h)anthracene	0.171	NA	NA	NA	NA	40
Dibenzofuran	0.147	NA	NA	NA	NA	NA
Fluoranthene	0.961	NA	NA	NA	NA	40
Fluorene	0.167	NA	NA	NA	NA	40
Indeno(1,2,3-cd)pyrene	0.628	NA	NA	NA	NA	40
Phenanthrene	0.578	NA	NA	NA	NA	40
Pyrene	0.811	NA	NA	NA	NA	40
Pesticides/PCBs						
4,4'-DDD	0.05	NA	NA	NA	NA	4
4,4'-DDE	0.015	NA	NA	NA	NA	4
Aroclor-1260	0.271	NA	NA	NA	40	1
Dieldrin	0.017	NA	NA	NA	NA	NA
Inorganic Chemicals						
Aluminum	19810	15848	NA	600	50	NA
Arsenic	2.8	3.2	60	100	10	55
Barium	14.9	23.2	NA	3000	500	625
Cadmium	1.6	0.58	20	20	4	12
Chromium	34.9	11	0.4	10	1	380
Copper	26.4	9.4	50	100	10	190
Iron	12300	8832	NA	200	NA	NA
Lead	86.77	11.4	500	900	50	530
Manganese	82.1	392	NA	100	500	NA
Mercury	0.067	0.12	0.1	30	0.3	10
Thallium	0.12	1.16	NA	NA	1	NA
Vanadium	37.4	21.8	NA	20	2	NA
Zinc	77.5	15.4	200	100	50	720

[1] All values are in mg/kg.
[2] Average of all samples.
[3] Values for PAHs, PCBs, phthalates, DDT/DDD/DDE, and dieldrin are for the total of all compounds in each class.
ORNL - Oak Ridge National Laboratory.
NA - not available.

guidelines presented on Table 7-19 (and two times the average background concentration). However, these guidelines appear to be highly conservative because they are less than two times the average background concentration (Table 7-19). It is unlikely all of the HQs food chain modeling would drop to near or below unity if less conservative assumptions were used. This is the case mainly for avian species, which generally had higher HQs than those for mammals. For these reasons, chromium probably poses some potential risks to biota, mainly via the food chain.

Copper

Copper was a COPC in the food chain modeling and the screening. The screening HQ was relatively low (1.26). The average concentration of copper in surface soils was less than all but one of the alternate guidelines presented on Table 7-19. The average concentration of copper in Site 4 soils exceeded two times the average background concentration (Table 7-19). It is likely the only HQs greater than 1.0 in the food chain modeling (for the robin, 1.8 and 1.37) would drop to near or below unity if less conservative assumptions were used in the food chain modeling. For these reasons, copper should be dropped from further consideration at Site 6.

Lead

Lead was a COPC in the food chain modeling and the screening. The average concentration of lead in surface soils was higher than one of the four alternate guidelines presented on Table 7-19. The average concentration of lead is somewhat higher than two times the average background concentration (Table 7-19). It is unlikely all of the HQs for lead in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling. For these reasons, lead appears to pose some risks to Site 6 biota, mainly via the food chain.

Mercury

Mercury was a COPC in the food chain modeling, but was not a COPC in the screening. The average concentration of mercury in surface soils was less than all of the alternate guidelines presented on Table 7-19. The average concentration of mercury is also less than two times the average background concentration (Table 7-19). It is unlikely the NOAEL HQ for mercury for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, but it is likely the other HQs (3.39 or less) would. The ecology of the robin was discussed previously. For these reasons, mercury should be dropped from further consideration at Site 6.

Thallium

Thallium was a food chain modeling COPC, but was not a screening COPC. The average (and maximum) concentration of thallium in Site 6 surface soils was less than the one alternate guideline available (Table 7-19), and was less than two times the average background concentration (Table 7-19). Also, the HQs greater than 1.0 in the food chain modeling (3.31 or less) would likely drop to near or below unity if less conservative assumptions were used. For these reasons, thallium should be dropped from further consideration at Site 6.

Organics

Several PAHs were screening COPCs, and bis(2-ethylhexyl)phthalate was a food chain modeling COPC. No alternate guidelines were available for individual PAHs in surface soils, although a guideline for total PAHs was obtained (Table 7-19). The total of the maximum concentrations of COPC PAHs and all detected PAHs were an order of magnitude less than the one alternate guideline for total PAHs (Table 7-19). PAHs were detected in only one sample, although only three samples were collected. The ecotoxicology of PAHs was discussed previously. The one HQ greater than 1.0 in the food chain modeling for bis(2-ethylhexyl)phthalate was relatively low (1.55). For these reasons, these SVOCs should be dropped from further consideration at Site 6.

Alternative guidelines for 4,4'-DDE, 4,4'-DDT, 4,4'-DDD, and Aroclor-1260, all screening and food chain COPCs in surface soils, are presented on Table 7-19. A Dutch Intervention value for total DDD/DDT/DDE was available. The average total for these compounds was an order of magnitude less than the Intervention value. The maximum concentration of Aroclor-1260 in surface soils was less than the two alternate guidelines available. For these reasons, pesticides and Aroclor-1260 should be dropped from further consideration at Site 6.

The compound 2-butanone was in detected surface soil and no guidelines were available. As a VOC it is unlikely this compound would biaccumulate or biomagnify. For these reasons, 2-butanone should be dropped from further consideration at Site 6.

Habitat Considerations

Regardless of chemical contamination of surface soil at Site 6, the quality and quantity of the terrestrial habitat at Site 6 are limited and of poor quality. The site is relatively small in size (see Figure 1-4) and is comprised of asphalt and mowed turfgrass. The entire area is surrounded by intensive development, with the exception of some turfgrass to the east and an isolated stand of pines to the southwest. In addition, propeller plane and vehicle traffic is heavy on and adjacent to the site. As a result, the area is characterized by loud noise, which would deter terrestrial wildlife from using the turfgrass areas. Although some types of wildlife can become accustomed to heavy human activity, no habitat is present on or near Site 6 to attract anything but an occasional transient songbird or small mammal.

7.6.4 Step 3A – Site 30

Step 3A considerations for Site 30 are discussed below on a COPC-specific basis.

The ecotoxicological significance of aluminum, iron, manganese, vanadium, and zinc was discussed previously. For terrestrial toxicological reasons, these inorganic COPCs should be dropped from further consideration at Site 30.

Arsenic

Arsenic was a COPC in the terrestrial food chain modeling, but was not a COPC in the screening. The average concentration of arsenic in surface soils was much less than all of the alternative guidelines presented on Table 7-20, including the ORNL guidelines and the Dutch Intervention guideline. The maximum concentration of arsenic (5.2 mg/kg) is only slightly higher than two times the average background concentration (3.2 mg/kg, Table 7-20). HQs greater than 1.0 from the food chain modeling (5.94 or less) would likely drop to near or below unity if less conservative assumptions were used, including literature-based home ranges/bioavailability estimates and the average concentration of 3.9 mg/kg, which is only slightly higher than two times the average background concentration. For these reasons, arsenic should be dropped from further consideration at Site 30.

Cadmium

Cadmium was a COPC in the food chain modeling, but not in the screening. The one food chain modeling HQ greater than 1.0 was relatively low (1.09). The average concentration of cadmium (and maximum concentration) in surface soils was less than the four alternative guidelines presented on Table 7-20, and the average concentration was less than two times the average background concentration. It is likely the one HQ greater than 1.0 in the food chain modeling would drop to near or below unity if less conservative assumptions were used. For these reasons, cadmium should be dropped from further consideration at Site 30.

Chromium

Chromium was a COPC in surface soil screening and the food chain modeling. The average concentration of chromium in surface soils (15.9 mg/kg) was greater than three of the four alternative guidelines presented on Table 7-20. However, these guidelines appear to be highly conservative because they are less than two times the average background concentration (Table 7-20). The average concentration of chromium slightly exceeded two times the average background concentration

TABLE 7-20
STEP 3A REFINEMENT OF COPCs - SITE 30
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemicals of Potential Concern	Average Concentration[1,2]	2X Average Background	ORNL Earthworm Benchmark	ORNL Soil Microbe Benchmark	ORNL Phytotoxicity Benchmark	Dutch Intervention Value[3]
Volatiles						
2-Butanone	0.131	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	0.121	NA	NA	NA	NA	4
Acetone	0.126	NA	NA	NA	NA	NA
Methylene Chloride	0.111	NA	NA	NA	NA	NA
Trichloroethene	0.076	NA	NA	NA	NA	NA
Semivolatiles						
2-Methylnaphthalene	0.857	NA	NA	NA	NA	40
Dibenzofuran	0.248	NA	NA	NA	NA	NA
Fluorene	0.321	NA	NA	NA	NA	40
Naphthalene	0.908	NA	NA	NA	NA	NA
Pentachlorophenol	0.672	NA	6	400	3	NA
Phenanthrene	0.249	NA	NA	NA	NA	40
Pesticides/PCBs						
4,4'-DDD	0.002	NA	NA	NA	NA	4
Gamma-chlordane	0.0009	NA	NA	NA	NA	NA
Dieldrin	0.0042	NA	NA	NA	NA	NA
Inorganic Chemicals						
Aluminum	16061	15848	NA	600	50	NA
Arsenic	3.9	3.2	60	100	10	55
Barium	16.1	23.2	NA	3000	500	625
Cadmium	0.439	0.58	20	20	4	12
Chromium	15.9	11	0.4	10	1	380
Cyanide	0.52	0.28	NA	NA	NA	20
Iron	14077	8832	NA	200	NA	NA
Lead	21.1	11.4	500	900	50	530
Manganese	261	392	NA	100	500	NA
Mercury	0.032	0.12	0.1	30	0.3	10
Selenium	1.24	0.46	70	100	1	NA
Vanadium	38.05	21.8	NA	20	2	NA
Zinc	3.8	15.4	200	100	50	720

[1] All values are in mg/kg.
[2] Average of all samples.
[3] Values for PAHs, phenols, PCBs, phthalates, DDT/DDD/DDE, and dieldrin are for the total of all compounds in each class.
ORNL - Oak Ridge National Laboratory.
NA - not available.

(Table 7-20). It is unlikely all of the HQs food chain modeling would drop to near or below unity if less conservative assumptions were used. This is the case mainly for avian species, which generally had higher HQs than those for mammals. For these reasons, chromium probably poses some potential risks to biota, mainly via the food chain.

Cyanide

Cyanide was a screening COPC because no USEPA Region IV screening level was available. Its average (and maximum) concentration was less than the one alternate guideline available (Table 7-20). The average concentration of cyanide only slightly exceeded two times the average background concentration. For these reasons, cyanide should be dropped from further consideration at Site 3.

Lead

Lead was a COPC in the food chain modeling and the screening. The HQ for lead in the screening was low (1.32). The average concentration of lead in surface soils was less than all of the four alternate guidelines presented on Table 7-20. The average concentration of lead is somewhat higher than two times the average background concentration (Table 7-20). It is unlikely all of the HQs for lead in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling. For these reasons, lead appears to pose some risks to Site 30 biota, mainly via the food chain.

Mercury

Mercury was a COPC in the food chain modeling, but was not a COPC in the screening. The average (and maximum) concentration of mercury in surface soils was less than all of the alternate guidelines presented on Table 7-20. The average (and maximum) concentration of mercury was also less than two times the average background concentration (Table 7-20). It is unlikely the NOAEL HQ for mercury for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, but it is likely the other HQs (1.57 or less) would. The ecology of the robin was discussed previously. For these reasons, mercury should be dropped from further consideration at Site 30.

Selenium

Selenium was a screening and food chain modeling COPC. The screening HQ was relatively low (2.59). The average concentration of selenium in surface soils was less than three of the four alternate guidelines presented on Table 7-20. The average concentration of selenium slightly exceeds two times the average background concentration (Table 7-20). It is likely the HQs for selenium (8.77 or less) in food chain modeling would drop to near or below unity if less conservative assumptions were used. Selenium can be harmful at elevated concentrations, but is an essential nutrient. For these reasons, selenium should be dropped from further consideration at Site 30.

Organics

A few PAHs, dibenzofuran, and pentachlorophenol were screening COPCs, and naphthalene was a food chain modeling COPC. No alternate guidelines were available for individual PAHs in surface soils, although a guideline for total PAHs was obtained (Table 7-20). The total of the maximum concentrations of COPC PAHs and all detected PAHs were less than the one alternate guideline for total PAHs (Table 7-20). The ecotoxicology of PAHs was discussed previously. The HQs greater than 1.0 in the food chain modeling for naphthalene were relevantly low (1.44 or less). The one detection of pentachlorophenol (1 of 14 samples) was less than all of the alternate guidelines presented on Table 7-20. No screening levels or TRVs were available for dibenzofuran, but it was detected only in 1 of 14 samples at what appears to be a qualitatively low concentration (0.22 mg/kg). For these reasons, SVOCs should be dropped from further consideration in surface soils at Site 30.

Alternative guidelines for 4,4'-DDD, which was a screening and food chain COPC in surface soils, are presented on Table 7-20. The screening HQ for 4,4'-DDD was low (1.04), as was the only food chain HQ greater than 1.0 (1.55). The one detection of this compound (one of eight samples) was orders of magnitude less than the alternate guideline for total DDD/DDT/DDE. Dieldrin was a screening COPC, but not a food chain COPC. No alternate guidelines were available, but its maximum concentration appears to be qualitatively low (0.013 mg/kg). For these reasons, pesticides and dieldrin should be dropped from further consideration at Site 30.

The compounds 2-butanone, 1,2-dichloroethene, acetone, methylene chloride, and trichloroethene were screening COPCs. As VOCs it is unlikely these compounds would biaccumulate or biomagnify. As a result, they should be dropped from further consideration at Site 30.

Habitat Considerations

Regardless of chemical contamination of surface soil at Site 30, the quality and quantity of the terrestrial habitat at Site 30 are limited and of poor quality. The site is relatively small in size (see Figure 1-5) and is comprised of almost entirely of concrete. The entire area is surrounded by intensive development, with the exception of some turfgrass to the west. In addition, propeller plane and vehicle traffic is heavy on and adjacent to the site. As a result, the area is characterized by loud noise, which would deter terrestrial wildlife from using the turfgrass areas. Although some types of wildlife can become accustomed to heavy human activity, no habitat is present on or near Site 30 to attract anything but an occasional transient songbird or small mammal.

7.6.5 Step 3A – Site 32

Step 3A considerations for Site 32 are discussed below on a COPC-specific basis.

The ecotoxicological significance of aluminum, barium, iron, vanadium, and zinc was discussed previously. For terrestrial toxicological reasons, these inorganic COPCs should be dropped from further consideration at Site 32.

Antimony

Antimony was a COPC in surface soil screening and the food chain modeling. The screening HQ was relatively low (1.71). The average concentration of antimony in surface soils was less than the one alternative guideline available (Table 7-21). The average (and maximum) concentrations of antimony were less than two times the average background concentration (Table 7-21). It is likely the HQs greater than 1.0 in the food chain modeling (6.91) would drop to near or below unity if less conservative assumptions were used. For these reasons, antimony should be dropped from further consideration in the process at Site 32.

Arsenic

Arsenic was a COPC in the terrestrial food chain modeling, but was not a COPC in the screening. The maximum concentration of arsenic in surface soils was much less than all of the alternative guidelines presented on Table 7-21, including the ORNL guidelines and the Dutch Intervention guideline. The maximum concentration of arsenic (2.8 mg/kg) is less than two times the average background concentration (Table 7-21). HQs greater than 1.0 from the food chain modeling (3.2 or less) would likely drop to near or below unity if less conservative assumptions were used, including literature-based home ranges/bioavailability estimates and the average concentration. For these reasons, arsenic should be dropped from further consideration at Site 32.

Chromium

Chromium was a COPC in surface soil screening and the food chain modeling. The average concentration of chromium in surface soils (12.27 mg/kg) was greater than three of the four alternative

TABLE 7-21
STEP 3A REFINEMENT OF COPCs - SITE 32
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemical of Potential Concern	Average Concentration[1,2]	2X Average Background	ORNL Earthworm Benchmark	ORNL Soil Microbe Benchmark	ORNL Phytotoxicity Benchmark	Dutch Intervention Value[3]
Volatiles						
Acetone	0.13	NA	NA	NA	NA	NA
Trichloroethene	0.11		NA	NA	NA	NA
Semivolatiles						
2,4-Dimethylphenol	0.37	NA	NA	NA	NA	NA
2-Methylnaphthalene	2.38	NA	NA	NA	NA	40
Fluorene	0.53	NA	NA	NA	NA	40
N-nitrosodiphenylamine	0.38	NA	NA	NA	NA	NA
Naphthalene	0.71	NA	NA	NA	NA	NA
Phenanthrene	0.87	NA	NA	NA	NA	40
Pyrene	0.31	NA	NA	NA	NA	40
Pesticides/PCBs						
4,4'-DDD	0.0019	NA	NA	NA	NA	4
Aroclor-1254	0.038	NA	NA	NA	40	1
Inorganic Chemicals						
Aluminum	12220	15848	NA	600	50	NA
Antimony	2.6	8	NA	NA	5	NA
Arsenic	1.2	3.2	60	100	10	55
Barium	11.1	23.2	NA	3000	500	625
Chromium	12.27	11	0.4	10	1	380
Cyanide	0.3186	0.28	NA	NA	NA	20
Iron	7202	8832	NA	200	NA	NA
Lead	7.9	11.4	500	900	50	530
Mercury	0.029	0.12	0.1	30	0.3	10
Selenium	0.71	0.46	70	100	1	NA
Vanadium	19.3	21.8	NA	20	2	NA
Zinc	5.8	15.4	200	100	50	720

[1] All values are in mg/kg.

[2] Average of all samples.

[3] Values for PAHs, PCBs, phthalates, DDT/DDD/DDE, and dieldrin are for the total of all compounds in each class.

ORNL - Oak Ridge National Laboratory.

NA - not available.

guidelines presented on Table 7-21. However, these guidelines appear to be highly conservative because they are less than two times the average background concentration (Table 7-21). The average concentration of chromium slightly exceeded two times the average background concentration (Table 7-21). It is unlikely all of the HQs food chain modeling would drop to near or below unity if less conservative assumptions were used. This is the case mainly for avian species, which generally had higher HQs than those for mammals. For these reasons, chromium probably poses some potential risks to biota, mainly via the food chain.

Cyanide

Cyanide was a screening COPC because no USEPA Region IV screening level was available. Its average (and maximum) concentration was less than the one alternate guideline available (Table 7-21). The average concentration of cyanide only slightly exceeded two times the average background concentration. For these reasons, cyanide should be dropped from further consideration at Site 32.

Lead

Lead was a COPC in the food chain modeling, but not the screening. The average concentration of lead in surface soils was less than all of the four alternate guidelines presented on Table 7-21. The average concentration of lead is less than two times the average background concentration (Table 7-21). It is unlikely the NOAEL HQ for lead for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, although the other HQs greater than 1.0 (4.54 or less) probably would. The ecology of the robin was discussed earlier. For these reasons, lead should be dropped from further consideration at Site 32.

Mercury

Mercury was a COPC in the food chain modeling, but was not a COPC in the screening. The average concentration of mercury in surface soils was less than all of the alternate guidelines presented on Table 7-21. The average (and maximum) concentration of mercury is also less than two times the average background concentration (Table 7-21). It is unlikely the NOAEL HQ for mercury for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling. The ecology of the robin was discussed previously. No other receptors had an HQ greater than 1.0 in the food chain modeling. For these reasons, mercury should be dropped from further consideration at Site 32.

Selenium

Selenium was a screening and food chain modeling COPC. The average concentration of selenium in surface soils was less than all of the alternate guidelines presented on Table 7-21. The average concentration of selenium slightly exceeds two times the average background concentration (Table 7-21). It is unlikely the NOAEL HQ for selenium for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, but it is likely the other HQs (2.66 or less) would. Selenium can be harmful at elevated concentrations, but is an essential nutrient. For these reasons, selenium should be dropped from further consideration at Site 32.

Organics

Several PAHs, n-nitrosodiphenylamine, and 2,4-dimethylphenol were screening COPCs, and 2-methylnaphthalene was a food chain modeling COPC. No alternate guidelines were available for individual PAHs in surface soils, although a guideline for total PAHs was obtained (Table 7-21). The total of the maximum concentrations of COPC PAHs and all detected PAHs were less than the one alternate guideline for total PAHs (Table 7-21). The ecotoxicology of PAHs was discussed previously. The HQs greater than 1.0 in the food chain modeling for 2-methylnaphthalene were relevantly low (2.51 or less).

Alternative guidelines for 4,4'-DDD and Aroclor-1254 are presented on Table 7-21. 4,4'-DDD was a food chain modeling COPC and Aroclor-1254 was a screening and food chain modeling COPC. The one detection of 4,4'-DDD (one of seven samples) was orders of magnitude less than the alternate guideline for total DDD/DDT/DDE (Table 7-21). The one HQ for 4,4'-DDD greater than 1.0 in the food chain modeling was relatively low (1.31), as was the one HQ greater than 1.0 for Aroclor-1254 (1.49). The maximum concentration of Aroclor-1254 in surface soils was orders of magnitude less than the two alternate guidelines available. For these reasons, pesticides and Aroclor-1254 should be dropped from further consideration at Site 32.

The compounds acetone and trichloroethene were detected in surface soil, and no guidelines were available. As VOCs it is unlikely these compounds would biaccumulate or biomagnify. As a result, they should be dropped from further consideration at Site 32.

Habitat Considerations

Regardless of chemical contamination of surface soil at Site 32, the quality and quantity of the terrestrial habitat at Site 32 are limited and of poor quality. The site is relatively small in size (see Figure 1-3) and is comprised almost entirely of concrete and buildings. The entire area is surrounded by intensive development, with the exception of some turfgrass to the north. In addition, propeller plane and vehicle traffic is heavy on and adjacent to the site. As a result, the area is characterized by loud noise, which would deter terrestrial wildlife from using the small turfgrass areas. Although some types of wildlife can become accustomed to heavy human activity, no habitat is present on or near Site 32 to attract anything but an occasional transient songbird or small mammal.

7.6.6 Step 3A – Site 33

Step 3A considerations for Site 33 are discussed below on a COPC-specific basis.

The ecotoxicological significance of aluminum, barium, iron, manganese, vanadium, and zinc was discussed previously. For terrestrial toxicological reasons, these inorganic COPCs should be dropped from further consideration at Site 33.

Arsenic

Arsenic was a food chain modeling COPC, but was not a screening COPC. Its maximum concentration was less than two times the average background concentration (Table 7-22). Its average concentration (and maximum) was less than all of the alternate guidelines available (Table 7-22). It is likely the HQs greater than 1.0 in the food chain modeling (3.2 or less) would drop to near or below unity if less conservative assumptions were used. For these reasons, arsenic should be dropped from further consideration at Site 33.

Cadmium

Cadmium was a food chain modeling and screening COPC. Its maximum and average concentration slightly exceeded two times the average background concentration (Table 7-22). The screening HQ for cadmium was low (1.38) and the one HQ greater than 1.0 in the food chain modeling was low (2.54). Its average concentration (and maximum) was less than all of the alternate guidelines available (Table 7-22). It is likely the one HQ greater than 1.0 in the food chain modeling would drop to near or below unity if less conservative assumptions were used. For these reasons, cadmium should be dropped from further consideration at Site 33.

Chromium

Chromium was a COPC in surface soil screening and the food chain modeling. The average concentration of chromium in surface soils (13.7 mg/kg) was greater than three of the four alternative guidelines presented on Table 7-22. However, these guidelines appear to be highly conservative because they are less than two times the average background concentration (Table 7-22). It is unlikely all of the HQs food chain modeling would drop to near or below unity if less conservative

TABLE 7-22
STEP 3A REFINEMENT OF COPCs - SITE 33
NAS WHITING FIELD, MILTON, FLORIDA
PAGE 1 OF 1

Chemicals of Potential Concern	Average Concentration[1,2]	2X Average Background	ORNL Earthworm Benchmark	ORNL Soil Microbe Benchmark	ORNL Phytotoxicity Benchmark	Dutch Intervention Value[3]
Volatiles						
2-Butanone	0.0053	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	0.0036	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.0041	NA	NA	NA	NA	NA
Methylene Chloride	0.0062	NA	NA	NA	NA	NA
Trichloroethene	0.057	NA	NA	NA	NA	NA
Semivolatiles						
2-Methylnaphthalene	1.2	NA	NA	NA	NA	40
Naphthalene	0.25	NA	NA	NA	NA	NA
Inorganic Chemicals						
Aluminum	17300	15848	NA	600	50	NA
Arsenic	2.7	3.2	60	100	10	55
Barium	18.9	23.2	NA	3000	500	625
Cadmium	1.42	0.58	20	20	4	12
Chromium	13.7	11	0.4	10	1	380
Iron	10305	8832	NA	200	NA	NA
Lead	11.1	11.4	500	900	50	530
Manganese	120.76	392	NA	100	500	NA
Mercury	0.068	0.12	0.1	30	0.3	10
Vanadium	28.35	21.8	NA	20	2	NA
Zinc	15.2	15.4	200	100	50	720

[1] All values are in mg/kg.
[2] Average of all samples.
[3] Values for PAHs are for the total of all compounds in each class.

assumptions were used. This is the case mainly for avian species, which generally had higher HQs than those for mammals. For these reasons, chromium probably poses some potential risks to biota, mainly via the food chain.

Lead

Lead was a COPC in the food chain modeling, but was not a COPC in the screening. The average concentration of lead in surface soils was less than all of the alternate guidelines presented in Table 7-22. The average concentration of lead is less than two times the average background concentration (Table 7-22). It is unlikely that the NOAEL HQs for lead for the robin in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling, but it is likely that the other HQs (2.35 or less) would. The ecology of the robin was discussed earlier. For these reasons, lead should be dropped from further consideration at Site 33.

Mercury

Mercury was a COPC in the food chain modeling, but was not a COPC in the screening. The average (and maximum) concentration of mercury in surface soils was less than three of the four alternate guidelines presented in Table 7-22. The average concentration of mercury is also less than two times the average background concentration, and the maximum concentration only slightly exceeds two times the average background concentration (Table 7-22). It is unlikely the NOAEL HQ for mercury for the robin (the only HQ greater than 1.0) in food chain modeling would drop to near or below unity if less conservative assumptions were used in the food chain modeling. The robin's ecology in relation to the food chain modeling was discussed previously. For these reasons, mercury should be dropped from further consideration at Site 33.

Organics

No organics had an HQ greater than 1.0 in the food chain modeling. Naphthalene and 2-methylnaphthalene were screening COPCs. No alternate guidelines were available for individual PAHs in surface soils, although a guideline for total PAHs was obtained (Table 7-22). The total of the maximum concentrations of the COPC PAHs and all detected PAHs were an order of magnitude less than the one alternate guideline for total PAHs (Table 7-22). Also, the HQs for naphthalene from the screening were relatively low (3.5). The terrestrial ecotoxicology of PAHs was discussed previously. For these reasons, PAHs should be dropped from further consideration at Site 33.

Several VOCs were each detected in surface soil, and no guidelines were available. As VOCs it is unlikely that these compounds would biaccumulate or biomagnify. As a result, these organics should be dropped from further consideration at Site 33.

Habitat Considerations

Regardless of chemical contamination of surface soil at Site 33, the quality and quantity of the terrestrial habitat at Site 3 is limited and of poor quality. The site is relatively small in size (see Figure 1-4) and comprised almost entirely of concrete and Building 1454. The entire area is surrounded by intensive development, with the exception of some turfgrass and scattered pines to the north. In addition, propeller plane and vehicle traffic is heavy on and adjacent to the site. As a result, the area is characterized by loud noise, which would deter terrestrial wildlife from using the turfgrass areas. Although some types of wildlife can become accustomed to heavy human activity, no habitat is present on or near Site 33 to attract anything but an occasional transient songbird or small mammal.

7.7 UNCERTAINTY ANALYSIS

Uncertainty is associated with all aspects of the ERA process. This section provides a summary of the uncertainties involved in this ERA, with a discussion of how they may affect the final risk values and conclusions. Several of the sources of uncertainty discussed below overlap with the risk characterization considerations described above.

Once an ERA is complete, the results must be reviewed and evaluated to identify the types and magnitudes of uncertainties involved. Relying on results from a risk assessment without consideration of uncertainties, limitations, and assumptions inherent in the process can be misleading. If numerous conservative assumptions are combined in the ERA process, the resulting calculations will propagate the uncertainties associated with each of those assumptions. The resulting bias is toward overpredicting risks. Thus, both the results of the risk assessment and the uncertainties associated with those results must be considered when making risk management decisions.

Generally, risk assessments carry two types of uncertainty: measurement and informational. Measurement uncertainty refers to the variability inherent in measured data. The risk assessment reflects the accumulated variances of the individual values used for several different parameters. Informational uncertainty stems from the limited availability of necessary information. Often the gap between what is needed and what is available is significant; information regarding the effects of some contaminants on wildlife receptors, the biological mechanism of a contaminant, the impact of physiological differences on exposure pathways, or the behavior of a contaminant in various environmental media is often absent.

Uncertainty is associated with each of the steps of the risk assessment process:

- Uncertainty in preliminary problem formulation can result from limited information regarding contaminant sources, release mechanisms, and exposure routes.

- Uncertainty in the ecological effects characterization arises from the quality of the existing screening values and toxicity data to support a determination of potential adverse impacts to ecological receptors.

- Uncertainty associated with the exposure assessment includes the methods used and the assumptions made to determine exposure point concentrations or calculate contaminant doses.

- Uncertainty in risk characterization includes uncertainty associated with combining conservative assumptions made in earlier activities.

7.7.1 Uncertainty in the Preliminary Problem Formulation

Since the sites provide habitat limited in quality and quantity and are comprised of developed and disturbed areas, difficulty exists in the selection of representative receptors. This also results in difficulties selecting appropriate assessment and measurement endpoints for each site. In addition, not all exposure routes for each type of receptor potentially present can be determined. As a result, risks may be over- or underestimated if this information is not known.

7.7.2 Uncertainty in the Ecological Effects Characterization

A great deal of uncertainty in this risk assessment arises from the nature and quality of the available toxicity data used to derive guidelines. This uncertainty is reduced when similar effects are observed across species, strain, sex, and exposure route; when the magnitude of the response is clearly dose related; and when mechanisms of toxicity are similar for laboratory and wildlife species. Most guidelines are based on conservative assumptions. Although an inherent level of conservatism is needed in a screening-level ERA to ensure the most sensitive receptors are protected, conservative guidelines may heavily overestimate potential risks and the resulting HQ values may be misleading. USEPA Region IV screening levels and the NOAELs and LOAELs used in this assessment are based on laboratory studies that do not take into account mitigating or ameliorating physical and chemical conditions in the environment. That is, the most bioavailable (i.e., toxic) form of the contaminant is usually applied to the exposure medium. In reality, bioavailability is rarely, if ever, 100 percent. Although many of these types of uncertainties are addressed using the tools presented in Step 3A, uncertainties still remain.

As mentioned earlier, little data for investigating dietary exposures and related risks to reptiles and amphibians are available. USEPA (1993b) presents input parameters for a small number of reptiles and amphibians, including a few species of turtles, snakes, a newt, and two species of frogs. Nevertheless, the absence of toxicity data for these species precludes modeling of potential risks to them. As a result, direct conclusions about the potential risks to reptiles and amphibians cannot be made, and only qualitative inferences can be drawn. Given the nature of most of the sites (e.g., paved, turfgrass), the relatively small size of the sites, and the general lack of aquatic or semi-aquatic habitat, herptiles are probably at low risk.

In addition, ERAs, unlike HHRAs, must consider risks to many different species. Calculation of risk values for every potential receptor species is not possible. For this ERA, conservative guidelines protective of a wide range of ecological receptors were sought. The underlying assumption associated with the use of these guidelines is contaminant concentrations in excess of these values are indicative of potential impacts to actual receptors inhabiting the area. However, species-specific physiological differences that may influence an organism's response to a contaminant or subtle behavioral differences that may increase/decrease a receptor's contact with a contaminant are seldom known. Also, some contaminants were present in sediments for which no suitable guidelines were available and, as a result, they could not be quantitatively assessed. The use of guidelines, while necessary, will introduce error into the results of an assessment.

Also, no toxicity data were available for several contaminants detected at each site. This includes the absence of USEPA Region IV soil screening levels, NOAELs/LOAELs, and alternate guidelines. In particular, avian toxicity data were lacking for several compounds. Although most of the contaminants with little or no toxicity data appear to be present in relatively low concentrations, without adequate toxicity data their potential risks cannot be fully assessed and, thus, risks may be over- or underestimated.

7.7.3 Uncertainty in the Exposure Assessment

Uncertainty in the exposure assessment arises mainly in the methods used to obtain exposure point concentrations. The maximum detected contaminant concentrations were generally used to represent the highest contaminant concentrations to which ecological receptors might be exposed. If the samples evaluated in this ERA are representative of contaminant concentrations associated with the sites, then this approach is conservative and should overestimate potential risks to ecological receptors. The maximum concentration of a contaminant in a given medium may have been collected in a "hot spot" of contamination, and may be much higher than the remaining values in the data set. Although use of maximum values is appropriate for screening in an ERA, they may grossly overpredict potential risks. To somewhat mitigate these uncertainties, average concentrations were evaluated in Step 3A, but they do not fully account for the uncertainties involved in selecting exposure point contaminant concentrations. Surface soil sample sizes for Sites 6 and 33 were relatively low, reducing confidence in the average concentrations as representative exposure concentrations.

Several conservative assumptions were used in the food chain modeling. Bioavailability was assumed to be 100 percent at Sites 3, 4, 6, 30, 32, and 33, as in most laboratory ingestion toxicity tests, but could be much less than 100 percent. For example, metals in soils at most hazardous waste sites are typically in poorly available forms (Efroymson et al., 1997a). Organic carbon in soils can bind metals and organics and reduce their bioavailability. Some of the ingestion rates were obtained from captive studies, which may overestimate the amount of food ingested relative to wild animals having limited food resources. The receptors were assumed to spend 100 percent of their life on each site. Each site comprises a very small portion of the home range of other receptors. These conservative assumptions tend to overestimate risks.

Typical home ranges or territories for the mourning dove, red-tailed hawk, red fox, raccoon, and robin are much larger than Site 3. USEPA (1993b) presents typical home ranges of 381 to 2,465 ha for the red-tailed hawk, 50 to 3,420 ha for the red fox, 39 to 2,560 ha for the raccoon, and 0.12 to 0.84 ha for the robin. Due to its migratory nature, home ranges are not available for the mourning dove but its breeding territory is approximately 5.0 ha (DeGraff and Rudis, 1986). The potentially contaminated areal extent of soil at each site (e.g., turfgrass) is much less than 1.0 ha at all sites (about two hundred square feet at some sites). If these area use factors (overlap of site size with home range and time per year potentially on-site) were used in the modeling, HQ values would drop significantly. Even the small mammals with home ranges less than one hectare investigated in this ERA, including the short-tailed shrew and cotton mouse, would not be expected to be found on the sites 100 percent of the time. Since the sites do not provide any cover and a limited food source, the turfgrass cannot satisfy all aspects of their habitat requirements.

The outer coverings of most receptors usually limit dermal exposure. Nevertheless, certain portions of some receptors, such as footpads, eyes, and the nose, do not contain fur or feathers, for example, and may have a higher chance of exposure. Yet these areas generally constitute a small portion of the total surface area of most receptors. Although some of the concentrations of contaminants in surface soils are elevated above background, they do not appear to be elevated or widespread enough qualitatively to warrant concern over dermal exposure. Also, the thick turfgrass on some of the sites would limit exposure to soil.

Inhalation of contaminants is assumed to be miniscule. As mentioned earlier, bare soil is minimal at the site. As a result, airborne particles would be expected to be minimal. Concentrations of VOCs in surface soils at Sites 3, 4, 6, 30, 32, and 33 were low. The PAHs, phthalates, and pesticides detected at some of the sites have high Henry's Law constants and hence do not volatilize easily. They also have high affinities for organic carbon, which would preclude significant volatilization. Burrowing wildlife would be expected to have a higher probability of inhalation exposure, but no evidence of burrowing wildlife is present on the site. Also, data regarding inhalation exposure and toxicity for wildlife are generally not available.

In summary, dermal and inhalation exposures for terrestrial wildlife were not evaluated in this ERA. As discussed in Section 7.2.3 and above, these exposure routes are assumed to be miniscule, but since they cannot be quantitatively assessed, only limited, qualitative conclusions regarding their significance can be drawn and uncertainties remain.

Uncertainty is also associated with the omission of literature-based BAFs from the screening-level food chain modeling. The USEPA Environmental Response Team is currently advocating the use of BAFs of 1.0 in the screening-level food chain modeling. This can lead to both over-and underestimations of potential risks. For example, compounds such as mercury, lead, pesticides, and PCBs can bioaccumulate. When BAFs of 1.0 are assumed for those compounds, potential risks may be underestimated. In contrast, some metals and organics have BAFs much less than 1.0. In those instances, potential risks may be overestimated. Note, however, the concentrations of mercury, lead, pesticides, and PCBs in surface soils were not generally elevated. Therefore, the uncertainties associated with using 1.0 as BAFs or for those compounds may not be of significance.

7.7.4 Uncertainty in the Risk Characterization

All aspects of the ERA process described in the above sections affect uncertainty in the risk characterization. Uncertainty in risk characterization also stems, in part, from combining different components of the ERA in this step. Each of those components already contains uncertainty. Thus, uncertainties may be propagated when these components are combined. To try to reduce the overall uncertainty in the risk assessment, the weight of evidence approach is used to make risk decisions. This approach takes the results of all aspects of the assessment into account, including the uncertainties, to make determinations of potential risk/no risk.

7.8 SUMMARY OF ECOLOGICAL RISK ASSESSMENT

In summary, a few chemicals in surface soils at Sites 3, 4, 6, 30, 32, and 33, primarily chromium and lead at several of the sites, appear to be present in concentrations that pose potential risks to terrestrial receptors. However, each of the six sites is limited in quantity and quality of habitat. The sites and their surrounding areas are all characterized by concrete, asphalt, buildings, and mowed turfgrass. In general, trees near the sites are limited to scattered ornamentals. In addition, human activity is heavy at the sites, discouraging use by most terrestrial wildlife. Most importantly, for the most part the sites comprise only a small portion of the home ranges of most of the terrestrial wildlife species found on the base. Reduction in growth, survival, and reproduction of small mammal and bird populations at and near the sites is likely to be low. For these reasons, potential risks appear to be low and further ecological study is unwarranted.

8.0 CONTAMINANT FATE AND TRANSPORT

This chapter discusses the fate and transport of human health and ecological COPCs detected in surface and subsurface soil samples at Sites 3, 4, 6, 30, 32, and 33. Fate, in the context of this chapter, refers to the ultimate disposition of COPCs following their release into the environment. Transport refers to the mechanism(s) by which a given chemical released into the environment will arrive at its fate. Explanation of the fate and transport of chemicals in the environment varies depending on the physical, chemical, and biological characteristics of the compound or metal considered and the environment into which that compound is released.

Several organic and inorganic compounds were detected in surface and subsurface soil. Because of the number of potential chemicals detected and the myriad fate and transport scenarios possible for those chemicals in the media, this discussion will focus only on those chemicals that may pose adverse risk to human or ecological receptors, as identified by the HHRA (Chapter 6.0) and the ERA (Chapter 7.0) in this report.

The following discussion of contaminant fate and transport is divided into two sections. Section 8.1 discusses potential migration routes of chemicals in the media evaluated and does not focus specifically on media found to be of concern at Sites 3, 4, 6, 30, 32, and 33. The site-specific persistence, fate, and transport of those compounds and elements found to pose a potential risk to human health or the environment are discussed in Section 8.2. Appendix E provides a table summarizing those compounds exceeding Florida leachability criteria.

8.1 POTENTIAL ROUTES OF MIGRATION

Several routes of migration are possible for a contaminant in surface and subsurface soil. These routes, air, soil, and biota, are summarized below.

Air. Gases and particulate material can be transported in the atmosphere. Organic compounds, metals, and metal complexes existing as gases at surface temperature and pressure may disperse or diffuse into the air and particulates may become entrained in air and thereby migrate. The extent to which gaseous constituents and particulate material remain airborne is a function of the level of excitation of the air (wind and temperature) and fate processes acting on the constituent and, for particulates, their density. Particulate material as discussed herein consists of organic compounds and inorganic material otherwise not present in a gaseous medium under atmospheric conditions.

Soil. The primary agents of migration acting on soil include wind, rainwater, running water, biological activity, and human activity. Wind commonly transports soil in the form of particulate material. Rainwater may cause soil to migrate either by washing soil particles downward into the subsurface or by carrying soil particles overland to surface water bodies or other areas of deposition. The amount and type of vegetative cover and surface disturbance affects the degree to which wind and water cause soil to migrate.

Biota. Biota may be considered a medium for migration of certain organic compounds and inorganics. Several compounds and elements are known to accumulate in the tissues of organisms at various levels in the food chain. As these organisms are consumed by other organisms, compounds and elements are accumulated in their tissue and passed on to organisms higher in the food chain. In this manner, contaminants may be transported by biota. Additionally, some organisms disturb bed sediments in streams and rivers. This disturbance can cause organic compounds and elements to be transported downstream as suspended material in surface water.

8.2 CONTAMINANT PERSISTENCE AND FATE

The discussion of contaminant persistence and fate in the environment is divided into three subsections. Subsection 8.2.1 discusses the processes controlling the persistence and fate of organic compounds and inorganics in the environment. Subsection 8.2.2 discusses the primary persistence and fate characteristics of the constituents detected at Sites 3, 4, 6, 30, 32, and 33. Subsection 8.2.3 discusses contaminant transport or migration for these sites.

8.2.1 Processes

The persistence and fate of chemical constituents in the environment depends on various chemical, physical, and biological processes. The predominant processes affecting the environmental persistence and fate of chemical constituents include solubility, photolysis, volatilization, hydrolysis, oxidation, chemical speciation, complexation, cationic exchange, sorption, and biodegradation or biotransformation. These processes are briefly summarized below.

Solubility - The solubility of chemical constituents in water is important in assessing their mobility in the environment. This is particularly important for the transport and ultimate fate of chemicals from soil and sediment to water (i.e., groundwater and/or surface water). Generally for organic compounds, aqueous solubility is a function of molecular size, molecular polarity, temperature, and the presence of other dissolved organic co-solvents. For metals and other inorganic parameters, solubility is generally controlled by chemical speciation, pH, Eh (redox potential), oxygen content, and the presence of dissolved and/or colloidal organic compounds (e.g., humic and fulvic acids) or other inorganic ion species (e.g., hydroxides and sulfates) (USEPA, 1979). Usually, increased solubility is directly related to increased environmental mobility with groundwater and/or surface water being the principal transport medium. Therefore, solubility is a significant factor affecting the fate of a compound or element in the water environment.

Photolysis - Many chemical constituents, particularly organic compounds, are susceptible to photolytic degradation either directly or indirectly. Direct photolysis involves a splitting of the chemical compound by light, whereas indirect photolysis occurs when another compound is transformed by light into a reactive species (i.e., usually a hydroxyl radical) that reacts with and modifies the original compound. In general, photolysis primarily occurs within the atmosphere, although it may also occur to a limited extent in soil under certain environmental conditions (USEPA, 1979).

Volatilization - Volatilization of organic chemicals from soil or water to the atmosphere is an important pathway for chemicals with high vapor pressures. For organic compounds, volatilization is a function of partial pressure gradients, temperature, and molecular size and is more likely to occur for compounds with low molecular weights. In addition, certain metals such as mercury, arsenic, and lead are capable of undergoing biologically mediated transformation (i.e., alkylation) that form volatile end products. Volatilization is important for the transport of certain chemical constituents from surface soil (i.e., vadose zone), sediment, and surface water and is evaluated using Henry's law and other associated chemical-specific rate constants.

Hydrolysis - Hydrolysis involves the decomposition of a chemical compound by its reaction with water. The rate of reaction may be promoted by acid (hydronium ion, $[H_3O^+]$) and/or base (hydroxyl ion, $[OH^-]$) compounds. In general, most organic compounds are resistant to hydrolytic reactions unless they contain a functional group (or groups) capable of reacting with water. Metallic compounds, however, generally dissociate readily in water depending upon the aqueous environmental conditions (e.g., pH and ionic strength). For metals, hydrolytic dissociation is an indirect process affecting the primary fate and transport mechanism of aqueous solubility.

Oxidation - The direct oxidation of organic compounds in natural environmental matrices may occur but this is generally a slow, insignificant transformation mechanism of minimal importance (USEPA, 1979). However, some inorganic compounds may be rapidly oxidized under naturally occurring environmental conditions when the surrounding environment changes from anaerobic to aerobic conditions.

Chemical Speciation - Chemical speciation is important primarily for metals that may exist in multiple forms in the environment, particularly within aqueous matrices. In general, the aqueous speciation of metals depends primarily upon the relative stabilities of individual valence states (which are element specific), oxygen content, pH and Eh condition, and the presence of available complexating agents and/or other cations and anions (USEPA, 1979). Because various metallic species exhibit differential aqueous solubilities and differential mobilities within soils and/or sediments (USEPA, 1979), the particular speciation of an individual metal will greatly affect its environmental mobility.

Complexation - For metals, complexation with various ligands is an important process because these complexes may be highly soluble in water. Complexation may, therefore, greatly enhance mobility within environmental matrices, particularly in groundwater and surface water, depending upon the aqueous solubility of the resulting complex. Complexation depends upon numerous factors such as pH, Eh, type and concentration of complexing ligands, and other ions present (USEPA, 1979).

Most metals are capable of forming numerous organic and/or inorganic complexes in the natural environment (USEPA, 1979). Metals may form organo-metallic complexes, especially with naturally occurring organic acids (i.e., humic and fulvic acids). In some cases, these metallic species may exhibit varying affinities for different organic ligands (i.e., mercury and arsenic for amino acids and their derivatives) (USEPA, 1979). Metals may also form metallo-inorganic complexes with inorganic ligands such as carbonate, halogens (usually chlorine), hydroxyl, and sulfate (USEPA, 1979). However, organo-metallic complex formation is usually favored over metallo-inorganic complexes.

Cation Exchange - Cation exchange is important primarily for metals and other ions that may substitute with other cations of similar charge and size within the lattice structure of clay minerals in soil and/or sediment (USEPA, 1979). This process, therefore, can significantly affect the mobility of an aqueous metal cation by removing it from solution under certain environmental conditions.

Sorption - The sorption of chemical constituents by inorganic particulate matter (i.e., soil or sediment) and organic compounds is an important process affecting mobility in the environment. This process is particularly important for the fate and transport of chemicals from soil or sediment to water (i.e., groundwater and surface water). In general, most metals exhibit a potential for adsorption to inorganic particulate matter and organic compounds (USEPA, 1979). Organic compounds also exhibit sorptive capability, but show greater variability in their ability to sorb to particulate or organic matter. The tendency for organic compounds to sorb to soils or sediment is reflected in their organic carbon partitioning coefficients (K_{oc}). K_{oc} is a measure of relative adsorption potential. The normal range of K_{oc} values is from 1 to 10^7 with higher values indicating greater sorption potential. Actual adsorption is chemical specific and is largely dependent on the organic content of the soil. The fraction of organic carbon, f_{oc}, in soil times the K_{oc} is defined as the distribution coefficient, K_d. The K_d is a ratio of the concentration adsorbed to the concentration partitioned to water.

Regardless of chemical class, sorption is a reversible process whereby desorption can be favored over sorption under certain environmental conditions (e.g., low pH for metals). For organic compounds in general, as the molecular weight increases and the aqueous solubility decreases (i.e., low polarity and high hydrophobicity), the sorptive binding affinity increases (i.e., K_{oc} increases). The tendency for chemical constituents to adsorb to inorganic particulate and/or organic compounds is a particularly important process because sorption to soils and/or sediments can effectively reduce a chemical constituent's mobility.

Biodegradation or Biotransformation - Biodegradation is a result of the enzyme-catalyzed transformation of chemicals. Organisms require energy, carbon, and essential nutrients from the environment for their growth and maintenance. In the process, chemicals from the environment will be transformed by enzymes into a form that can be used by the organism. The biodegradation rate is the rate by which contaminants will be degraded. The rate is a function of microbial biomass and a chemical's concentration under given environmental conditions. When a pollutant is introduced into the environment, there is often a lag time before biodegradation begins while the organism generates an enzyme capable of digesting the chemical. Co-metabolism occurs when a pollutant can be biotransformed only in the presence of another compound serving as a carbon and energy source (USEPA, 1979).

8.2.2 Persistence and Fate of COPCs

This section discusses the persistence and fate characteristics for COPCs detected at Sites 3, 4,6, 30, 32, and 33. To focus the discussion of persistence and fate characteristics, only those constituents (1) identified by the human health or ecological risk assessments (presented in Chapters 6.0 and 7.0, respectively) as COPCs and (2) present above relevant standards will be addressed. These constituents are summarized below by medium.

Human Health Assessment Constituents

- Surface soil: aluminum, arsenic, chromium, vanadium, dieldrin, Aroclor-1260, carcinogenic PAHs, TPH.
- Subsurface soil: arsenic, carcinogenic PAHs, TPH.

Ecological Assessment Constituents

- Surface soil: aluminum, beryllium, cadmium, copper, cyanide, iron, lead, manganese, selenium, silver, vanadium, zinc, alpha-chlordane, gamma-chlordane, heptachlor epoxide, 4,4'-DDD, 4,4'-DDE, dieldrin, Aroclor-1254, Aroclor-1260, acetone, 2-butanone, pentachlorophenol, carbon disulfide, 1,2-DCE, 1,1,1-TCE, TCE, methylene chloride, dibenzofuran, bis(2-ethylhexyl)phthalate, N-nitrosodipropylamine, N-nitrosodiphenylamine, and several PAHs (including 2-methylnaphthalene, phenanthrene, naphthalene, fluorene, and pyrene).

The fate and persistence characteristics of these constituents are summarized below by analytical fraction.

Ketones

Ketones are highly volatile and soluble, and these two processes dominate the fate of these compounds in the environment. Hydrolysis is generally not a significant fate process for this class of chemicals.

Acetone is completely miscible in water and is unlikely to adsorb to soil or sediments or bioaccumulate. It has a high vapor pressure and, once released to the air, photolysis and reaction with hydroxyl radicals result in an average half-life of 22 days (Howard, 1990).

2-Butanone will partially evaporate into the atmosphere if released to the soil and may also leach into the groundwater. Once in the groundwater, 2-butanone may slowly degrade. Hydrolysis, photolysis, and adsorption are not significant fate processes for this chemical (Howard, 1990).

Polyaromatic Hydrocarbons

PAHs have very low solubilities and high K_{oc}s. The low-molecular-weight PAHs (e.g., acenaphthene, anthracene, fluorene, phenanthrene) may volatilize, whereas the high-molecular-weight PAHs [e.g., benzo(a)pyrene, benzo(a)anthracene, and chrysene] are less likely to volatilize. PAHs in soil are much more likely to bind to soil and be transported via mass transport mechanisms than to go into solution.

Bioconcentration of PAHs in aquatic organisms is greater for the higher-molecular-weight compounds than the lower-molecular-weight compounds. PAHs can be bioaccumulated from water, sediments, or lower organisms in the food chain.

Land spreading applications have indicated PAHs are highly amenable to microbial degradation in soil. The rate of degradation is influenced by temperature, pH, oxygen concentrations, initial chemical concentrations, and moisture. Photolysis, hydrolysis, and oxidation are not important fate processes for the degradation of PAHs in soil (ATSDR, 1990).

Phthalate Esters

Phthalate esters are considered to be relatively persistent chemicals in the environment. Although numerous studies have demonstrated phthalate esters undergo biodegradation, it appears this is a slow process in soils. Certain microorganisms have been shown to excrete products increasing the solubility of phthalate esters and enhancing their biodegradation (Gibbons and Alexander, 1989).

Pesticides

Whether pesticides are sprayed, dusted, or applied directly to the soil, the soil is the ultimate sink for these chemicals. Runoff may carry pesticides to adjacent surface water bodies. Hydrolysis, oxidation, and photolysis are not generally important fate mechanisms for pesticides in soil. Hydrolysis half-lives for several pesticides are reported in periods of months to years (USEPA, 1979).

4,4'-DDT and its metabolites are considered to be persistent chemicals. They undergo extensive adsorption to soil and are not highly soluble. Biodegradation may occur under both aerobic and anaerobic conditions in the presence of certain soil microorganisms. Under aerobic conditions, DDT may be transformed to DDE, whereas under anaerobic conditions, DDD may result. These compounds are, however, somewhat volatile, with a reported half-life of 100 days for DDT. These compounds are highly lipophilic and therefore readily bioaccumulate (ATSDR, 1992a). DDT is no longer in production in the United States.

Polychlorinated Biphenyls

PCBs are considered to be very persistent organic chemicals. Biodegradation is the only process known to transform PCBs under environmental conditions, and only the lighter compounds are measurably biodegraded (USEPA, 1979). Although some microorganisms (e.g., *Phanaerochaete chrysosporium*) may biodegrade PCBs, such fungi may not exist in local soil. There is experimental evidence to suggest heavier PCBs (five or more chlorine atoms per molecule) can undergo photolytic degradation, but there are no data to suggest this process operates under environmental conditions (USEPA, 1979). Base-, acid-, and neutral-promoted hydrolysis are considered to be inconsequential degradation mechanisms for PCBs.

Metals

Metals are highly persistent environmental contaminants. They do not biodegrade, photolyze, hydrolyze, etc. The major fate mechanisms for metals are adsorption to the soil matrix (as compared to being part of the soil structure) and bioaccumulation.

The mobility of metals is influenced primarily by their physical and chemical properties in combination with the physical and chemical characteristics of the soil matrix. Factors assisting in predicting the mobility of inorganic species are the soil/pore water pH, soil/pore water Eh, and cation exchange capacity. The mobility of metals generally increases with decreasing soil pH and cation exchange capacity.

8.2.3 Transport of Contaminants

This section discusses the transport of chemicals in soil at Sites 3, 4, 6, 30, 32, and 33. Transport of chemicals by air and biota is not pertinent based on the results of the HHRA and the ERA.

Transport of the COPCs in soil is dependent on several factors, as discussed in Section 8.1. The primary agents of migration acting on soil include wind, water, and human activity. Soil can also act as a source medium from which the COPCs are transported to other media. Transport of the COPCs from soil via wind is not expected to be a major transport mechanism because of the vegetation present at Sites 3, 4, and 6. Vegetative cover is an effective means of limiting wind erosion of soil. Humans are effective at moving soil and can greatly affect the transport of soil-bound chemicals at hazardous waste sites. Under the current use of Sites 3, 4, 6, 30, 32, and 33, human activity is not a major transport mechanism for the COPCs in soils. This condition could change based on the future use.

Water can cause the transport of soil and, therefore, the COPCs in soil, via the mechanisms of physical transport of soil or the leaching of constituents from the soil to groundwater. The soil consists mainly of Troup loamy sand; therefore, leaching is a major migration pathway for contaminants. Soil erosion, the physical transport of soil via surface water runoff, is currently not considered a major mechanism for the transport of the COPCs in soil because of (1) the low grade (slope) of the land surface at the site; (2) the turfgrass vegetation at Sites 3, 4, and 6; (3) the concrete covering of Sites 30, 32 and 32; and (4) the nature of the constituents remaining in the soil at the site.

The majority of the analytes detected in the soil at Sites 3, 4, 6, 30, 32, and 33 are likely to remain attached to the soil because most metal analytes, PAHs, and PCBs adsorb readily to or are natural constituents of clays and other minerals.

This section presents a brief overview of contaminant fate and transport issues for several major chemical classes detected at Sites 3, 4, 6, 30, 32, and 33.

Volatile Organics

Volatile organic chemicals are typically considered to be fairly soluble and have a low capacity for retention by soil organic carbon; therefore, these are the organic compounds most frequently detected in groundwater. These types of chemicals may migrate through the soil column after being released by a spill event or by subsurface waste burial as infiltrating precipitation solubilizes them. Some fraction of these chemicals is retained by the soil, but most will continue migrating downward to the water table. At that time, migration occurs primarily laterally with the hydraulic gradient. Again, some portion of the chemical may be retained by the saturated soil.

If a large enough fuel spill occurs, the fuel compounds may move through the soil column as a bulk liquid, until they reach the water table. There, instead of going into solution, the majority of the release may remain as a discrete fuel layer on the water table surface, with some of the material going into solution at the water/fuel interface.

Similarly, compounds with specific gravities greater than that of water (e.g., TCE) are often used in various industrial applications such as degreasing. If a large enough spill of these solvents occurs, these chemicals may also migrate as a bulk liquid but will not stop at the water table (i.e., these chemicals will mix/sink into the aquifer).

Polycyclic Aromatic Hydrocarbons

PAHs are generally considered to be fairly immobile chemicals in the environment. They are large molecules with high organic carbon partition coefficients and low solubilities when compared to the volatile organics. These compounds, when found in the soil, generally do not migrate vertically to a great extent. Instead, they are more likely to adhere to soil particles and be removed from the site via surface runoff and erosional processes.

Pesticides

Pesticides were commonly used at this installation. Many of the compounds detected are no longer licensed for general sale and use in the United States. Therefore, it is assumed much of what was detected in the soil is representative of past application for insect control.

Like the PAHs, pesticides as a class of compounds are not considered to be very mobile in the environment. These chemicals, upon application or disposal, tend to remain affixed to soil particles. Migration of pesticides occurs primarily by erosion via the action of wind or water.

Inorganics

Because metals are frequently incorporated into the soil matrix and remain bound to particulate matter, they also migrate from the source areas via bulk movement processes (erosion). The larger particles (greater than 0.45 microns, which are removed via the filtration step prior to water analysis) are not generally considered to be mobile in groundwater. The metals detected in unfiltered groundwater samples are often representative of suspended soil material in the samples.

There are some instances, however, where these metals are found at such concentrations or in such form as to be able to migrate in solution. It is possible industrial activities could saturate all available exchange sites in soil and hence a metal may be mobilized. Metals are also more mobile under acidic conditions, which may exist in areas where plating-type activities have occurred. Finally, a metal solution may be utilized in some industrial applications. In these cases, it is possible for metals to migrate vertically through the soil column and reach the groundwater.

9.0 CONCLUSIONS AND RECOMMENDATIONS

The preceding sections of this RI Report have described the nature and extent of hazardous constituents and the risk to human health and the environment from exposure to surface and subsurface soil for the following sites:

- Site 3, Underground Waste Solvent Storage Area
- Site 4, North AVGAS Tank Sludge Disposal Area
- Site 6, South Transformer Oil Disposal Area
- Site 30, South Field Maintenance Hangar
- Site 32, North Field Maintenance Hangar
- Site 33, Midfield Maintenance Hangar

Conclusions and recommendations based on the RI information are presented in the following sections.

9.1 CONCLUSIONS

The general and site-specific conclusions of the RI at Sites 3, 4, 6, 30, 32, and 33 are summarized below.

9.1.1 General Conclusions

The following general conclusions apply to Sites 3, 4, 6, 30, 32, and 33.

- The data generated during the RI meet established DQOs and are acceptable for use in site characterizations, risk assessments, and evaluation of corrective measures.

- Cancer risk estimates developed for receptors exposed to COPCs in surface soils and subsurface soils are less than the USEPA target risk range of 10^{-4} to 10^{-6} when the RME case is evaluated.

- Chromium and lead appear to be present in the surface soil at several of the sites in concentrations posing potential risk to terrestrial receptors. However, each of the six sites is limited in the quantity and quality of habitat since the sites are characterized by concrete, asphalt, buildings, mowed turfgrass, and heavy human activity. Most importantly, the sites comprise only a small portion of the home ranges of most of the terrestrial wildlife species found on base. Therefore, reduction in growth, survival, and reproduction of small mammal and bird populations at and near the sites is unlikely. For these reasons, potential risks appear to be acceptable and further ecological study is unwarranted.

- HIs for COPCs in surface and subsurface soil are less than the USEPA and State of Florida target benchmark of less than 1.0 for the older child trespasser, the adult trespasser, the occupational worker, the site maintenance worker, the construction worker, and the adult resident. No adverse noncarcinogenic health effects would be expected to occur to these receptors from exposure to surface and subsurface soils.

9.1.2 Site 3

The following conclusions apply specifically to Site 3.

- The COPCs in surface soil at Site 3 pose unacceptable carcinogenic risk, based on the Florida risk benchmark of 10^{-6}, to all receptors except the construction worker. The primary carcinogenic risk driver for all receptors is arsenic. However, this risk may be due to naturally occurring or anthropogenic background levels of arsenic since there are no documented uses of arsenic at Site 3. Therefore, the risk calculated due to the presence of arsenic may be overestimated. Dieldrin is also a carcinogenic risk driver for the resident receptor.

- The HI (RME) for the child resident is equal to unity (1.0). *HIs developed on a target organ specific basis are less than unity.* This indicates adverse noncarcinogenic effects would not be expected to occur from exposure to surface soils for the child resident.

9.1.3 Site 4

The following conclusions apply specifically to Site 4.

- The COPCs in surface soil at Site 4 pose unacceptable carcinogenic risk, based on the Florida risk benchmark of 10^{-6}, to all receptors except the construction worker. The primary carcinogenic risk driver for all receptors is arsenic. However, this risk may be due to naturally occurring or anthropogenic background levels of arsenic since there are no documented uses of arsenic at Site 4. Therefore, the risk calculated due to the presence of arsenic may be overestimated. Dieldrin is also a carcinogenic risk driver for the resident receptor.

- The HI (RME) for the child resident is equal to unity (1.0). *HIs developed on a target organ specific basis are less than unity.* This indicates adverse noncarcinogenic effects would not be expected to occur from exposure to surface soils for the child resident.

9.1.4 Site 6

The following conclusions apply specifically to Site 6.

- The COPCs in surface soil at Site 6 pose unacceptable carcinogenic risk, based on the Florida risk benchmark of 10^{-6}, to all receptors except the construction worker. The primary carcinogenic risk driver for all receptors is arsenic. However, this risk may be due to naturally occurring or anthropogenic background levels of arsenic since there are no documented uses of arsenic at Site 6. Therefore, the risk calculated due to the presence of arsenic may be overestimated. Carcinogenic risk for the resident and occupational worker is also driven by benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and Aroclor-1260.

- The HI (RME) for the child resident (1.1) is marginally more than unity (1.0). *HIs developed on a target organ specific basis are less than unity.* This indicates adverse noncarcinogenic effects would not be expected to occur from exposure to surface soils for the child resident.

- TPH is an HI driver at Site 6 for the child resident. The RME HI at Site 6 is 1.7 which is more than unity (1.0). For all other receptors where TPH is greater than screening criteria, the TPH HI is less than unity. However, due to the uncertainty associated with the TPH reference dose, the HI is likely to be overestimated.

9.1.5 Site 30

The following conclusions apply specifically to Site 30.

Current Conditions

- The COPCs in surface soil at Site 30 pose unacceptable carcinogenic risk, based on the Florida risk benchmark of 10^{-6}, to resident receptors. The primary carcinogenic risk driver is arsenic. However, this risk may be due to naturally occurring or anthropogenic background levels of arsenic since there are no documented uses of arsenic at Site 30. Therefore, the risk calculated due to the presence of arsenic may be overestimated.

- The HI (RME) for the child resident (1.3) is marginally more than unity (1.0). *HIs developed on a target organ specific basis are less than unity.* This indicates adverse noncarcinogenic effects would not be expected to occur from exposure to surface soils for the child resident.

- TPH is an HI driver at Site 30 for the child resident. The RME HI at Site 30 is 1.3 which is more than unity (1.0). For all other receptors where TPH is greater than screening criteria, the TPH HI is less than unity. However, due to the uncertainty associated with the TPH reference dose, the HI is likely to be overestimated.

- Iron is an HI driver at Site 30 for the child resident receptor. The iron RME HI for the child resident receptor at Site 30 is 1.1 which is more than unity (1.0). For all other receptors where iron is greater than screening criteria, the iron HI is less than unity. However, the HI estimates developed for iron may be overstated due to the uncertainty associated with the iron reference dose.

Hypothetical Future Conditions Assuming Concrete Removal

Although it is unlikely the concrete will be removed from Site 30 in the future, exposure to surface soils under this scenario was evaluated. The following conclusions were drawn based on this scenario.

- Cancer risk estimates developed for receptors exposed to COPCs in surface soils at Site 30 are less than the USEPA target risk range of 10^{-4} to 10^{-6}.

- Cancer risk estimates developed for the trespasser (older child/adult), the occupational worker, and the on-site resident exposed to COPCs in surface soils at Site 30 are more than the State of Florida risk benchmark of 10^{-6} when the RME case is evaluated. The primary risk driver is arsenic.

- HIs for Site 30 receptors are all less than 1.0 under the RME scenario, except for the on-site child resident. The on-site child resident HI was 1.4 for the RME case. HIs developed on a target organ specific basis are less than unity.

- Iron is an HI driver at Site 30 for the child resident receptor. The RME iron risk for the child resident receptor at Site 30 is 1.9 which is greater than unity. For all other receptors where iron is greater than the screening criteria, the iron HI is less than unity. Iron risks are highly uncertain due to the uncertainty associated with the iron reference dose.

- TPH is an RME HI risk driver for the child resident at Site 30. The RME HI for the child resident receptor is 4.7 at Site 30. For all other receptors at Site 30, the TPH HI is less than unity. However, due to the uncertainty associated with the TPH reference dose, the calculated HI is likely to be overestimated.

9.1.6 Site 32

The following conclusions apply specifically to Site 32.

Current Conditions

- There are no current complete exposure pathways for surface soil at Site 32 since the site is covered with concrete and asphalt concrete pavement.

- No COPCs were identified for subsurface soils at Site 32.

Hypothetical Future Conditions Assuming Concrete Removal

Although it is unlikely the concrete will be removed from Site 32 in the future, exposure to surface soils under this scenario was evaluated. The following conclusions were drawn based on this scenario.

- Cancer risk estimates developed for the adult trespasser, occupational worker, and on-site resident exposed to COPCs in surface soils are more than the State of Florida risk benchmark of 10^{-6}. The primary risk driver is arsenic.

- HIs for all Site 32 receptors were less than 1.0 for the RME case.

- TPH is an RME HI risk driver for the child and adult resident at Site 32. The RME HI for the child and adult resident receptors is 4.7 and 1.1, respectively. For all other receptors at Site 32 the TPH HI is less than unity. However, due to the uncertainty associated with the TPH reference dose, the calculated HI is likely to be overestimated.

9.1.7 Site 33

The following conclusions apply specifically to Site 33.

Current Conditions

- There are no current complete exposure pathways for surface soil at Site 33 since the site is covered with concrete and asphalt concrete pavement.

- Cancer risk estimates developed for receptors exposed to COPCs in subsurface soils are less than the USEPA target risk range of 10^{-4} to 10^{-6} and the FDEP risk benchmark of 10^{-6}.

- HIs for COPCs in subsurface soil are less than the USEPA and FDEP target benchmark of 1.0 for all receptors.

Hypothetical Future Conditions Assuming Concrete Removal

Although it is unlikely the concrete will be removed from Site 33 in the future, exposure to surface soils under this scenario was evaluated. The following conclusions were drawn based on this scenario.

- The cancer risk estimates developed for all Site 33 receptors except for the construction worker are greater than the State of Florida benchmark of 10^{-6}. The primary risk driver is arsenic.

- HIs for Site 33 receptors were all less than 1.0 under the RME scenario, except for the on-site child resident. The on-site child resident HI was 1.27 for the RME case. However, HIs calculated on a target organ specific basis for the on-site child resident are less than unity. Consequently, adverse noncarcinogenic health effects are not anticipated under the conditions established in the exposure assessment.

- TPH is an RME HI risk driver for the child resident at Site 33. The RME HI for the child receptor is 1.1 at Site 33. For all other receptors at Site 33, the TPH HI is less than unity. However, due to the uncertainty associated with the TPH reference dose, the calculated HI is likely to be overestimated.

9.2 RECOMMENDATIONS

The conclusions presented above are based on the findings from the baseline human health and screening level ecological risk assessments performed for each of the sites investigated at NAS Whiting Field. The human health risk assessment was based on current and future potential risks of exposure to toxic or hazardous chemicals and compounds detected in surface and subsurface soils; potential risks due to exposure to groundwater will be presented following completion of the Site 40, Basewide Groundwater investigation. The ecological risk assessment was not expanded beyond the screening level due to the lack of significantly impacted biota. The results of the assessments require an FS be performed for all of the sites investigated. Table 9-1 identifies the specific chemicals and the media targeted for further study for each of the sites investigated.

TABLE 9-1

REMEDIAL INVESTIGATION RECOMMENDATION SUMMARY FOR SITES 3, 4, 6, 30, 32, AND 33 NAS WHITING FIELD, MILTON, FLORIDA

Area of Investigation	Media[1]	Chemicals[2]	Recommendation
Site 3, Underground Waste Solvent Storage Area	Soil	Arsenic, Dieldrin	Feasibility Study
	Biota	None	No Further Action
Site 4, North AVGAS Tank Sludge Disposal Area	Soil	Arsenic, Dieldrin	Feasibility Study
	Biota	None	No Further Action
Site 6, South Transformer Oil Disposal Area	Soil	Arsenic Benzo(a)pyrene Benzo(a)anthracene Benzo(a)fluoranthene Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene Aroclor-1260 TPH	Feasibility Study
	Biota	None	No Further Action
Site 30, South Field Maintenance Hangar[3]	Soil	Arsenic, TPH, Iron	Feasibility Study
	Biota	None	No Further Action
Site 32, North Field Maintenance Hangar[3]	Soil	Arsenic, TPH	Feasibility Study
	Biota	None	No Further Action
Site 33, Midfield Maintenance Hangar[3]	Soil	Arsenic, TPH	Feasibility Study
	Biota	None	No Further Action

1 Groundwater is being investigated as part of the Site 40, Basewide Groundwater investigation.

2 Chemicals with carcinogenic risk greater than 1×10^{-6}, HIs greater than 1.0, or unacceptable ecological risk.

3 Hypothetical future condition with concrete or asphalt pavement removal.

10.0 PROFESSIONAL REVIEW CERTIFICATION

The work and professional opinions rendered in this report were conducted or developed in accordance with commonly accepted procedures consistent with applied standards of practice. This report is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. The RI for the following sites was developed for NAS Whiting Field in Milton, Florida, and should not be construed to apply for any other purpose to any other site.

- Site 3, Underground Waste Solvent Storage Area
- Site 4, North AVGAS Tank Sludge Disposal Area
- Site 6, South Transformer Oil Disposal Area
- Site 30, South Field Maintenance Hangar
- Site 32, North Field Maintenance Hangar
- Site 33, Midfield Maintenance Hangar

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APPENDIX A

SOIL BORING LOGS AND GEOTECHNICAL DATA

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W03SB11
DATE: 3/5/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
Concrete cutter	free 1	NA	NA	1.0			Concrete					
hand auger	1											
	4											
SS-01	4	15/12	4/6		med dense	brown	Silty SAND - sandy SILT	SM/ML	FILL, moist	0	0	0
0748	6	5/4	4/6		loose-soft		fine					
SS-02	6	2/1	4/6				Same			22		
0752	8	1/2	6/3									
SS-03	8	4/8	6/6	8.0	med dense-stiff	red-gray	SAND, fine, silty - SILT sandy	SM/ML	moist	0		
0755	10	10/12	1/0									
SS-04	10	13/14	6/6		dense	red	SAND, fine-med, silty	SM	dry - sl. moist	0	0	0
0805	12	19/21	1/0									
SS-05	12	9/13	6/6				Same as above	SM		0		
0808	14	16/17	6/2									
SS-06	14	9/17	6/6				Same as above	SM		0		
0815	16	18/12	5/0									
SS-07	16	3/6	6/6	16.0	stiff	red	SILT, sandy, fine-vfg, gray mottling	ML	sl. moist, low plasticity	0	0	0
0819	18	8/8	6/5									
SS-08	18	4/11	6/6	18.0	med-vy stiff	red-gray	CLAY, silty, w/ vfg sand	CL	mod plasticity	0		
0825	20	15/19	5/0	19.4			SILT, clayey	ML				
SS-09	20	16/19	6/6	20.1	dense	white	SAND, vf-fine, trace silt	SW	phosphatic w/ qtz, sl. moist lab sample W03SB01101	12		
0855	22	20/24	6/6									
SS-10	22	10/14	6/6		med dense	white	SAND, fine-vfg, no silt	SW		11	0	0
0907	24	17/19	5/0									
SS-11	24	11/14	6/6		med dense	white	SAND as above	SW		10		

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W03SB11
DATE: 3/5/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ
@0913	1 26	12/13	6/4		med dense	White gray	SAND, fine-vfg some clay 25.5-25.7	SW	sl. moist	10	0	0	0
SS-12	26	10/21	6/6		dense	white	SAND, fine-med gr.	SW	phosphatic, qtz.				
@0925	28	24/24	6/1		↓					12			
SS-13	28	10/11	6/6		med dense	lgt gray-white	SAND, fine-vfg	SW	phosphatic				
@0933	30	8/8	6/0		↓	White			qtz, sl. moist	12			
							TD-30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X

Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W03SB12
DATE: 3/2/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
post-hole	0	NA	NA				Asphalt						
						brown	SAND, silty,	SM					
	3												
hand Auger	3 / 4												
SS 01	4	6/7	6/6		med dense	lgt brown	SAND, silty fine grained	SM	moist - vy moist	0	0	0	0
1449	6	6/9	6/6	5.5	stiff	reddish brown	SILT, vf sandy, vfg	ML	moist - vy moist				
SS-02	6	9/17	6/6		vy stiff		SILT, sandy, vfg	ML	sl. moist	0			
1451	8	20/18	6/3		hard								
SS-03	8	9/12	6/6		vy stiff		Same as above	ML	sl. moist	0			
1457	10	12/13	6/3										
SS-04	10	4/8	6/0				Same as above	ML	sl. moist	0	0	0	0
1500	12	7/10	0/0										
SS-05	12	15/21	6/0				SILT, clayey w/ vfg sand	ML	sl. moist	0			
1514	14	11/16	0/0										
SS-06	14	7/11	6/6			red-brown	SILT, clayey w/ vfg	ML	sl. moist,	0			
1517	16	11/10	6/3			gray	sand, reddish brown + yellow + gray mottled						
SS-07	16	5/7	6/6						lab sample W03SB01201	0			
1526	18	9/9	6/6								0	0	0
SS-08	18	3/5	6/6			red	SILT, sandy, clayey		sl moist, low plasticity	0			
1531	20	6/8	6/5	19.0		Pink-gray	CLAY, silty, w/ vfg sand	CL	moist, plastic				
SS-09	20	6/14	6/6	20.8						0			
1537	22	15/18	6/6		dense-med dense	white yellow pink	SAND, fine-vfg, laminated colors	SW	phosphatic, qtz, mica		0	0	0
SS-10	22	7/10	6/6			white				0			
1546	24	16/19	6/0										
SS-11	24	11/13	6/6			white	SAND, fine-med grained	SW	sub-well rounded phos w/ qtz, mica	0			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W03SB12
DATE: 3/2/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-11	26	13/16	6/3		med dense	white	SAND, fine-med	SW		0	0	0	0
SS-12	26	9/15	6/6		↓	white	SAND, med grained w/ fine sand from 26.6-27.0 ft.	SW	phosphatic, well rounded	0			
1603	28	16/23	6/3		dense	↓							
SS-13	28	6/7	6/6	28.4	med dense	pink	SAND, med grained, silty	SW/SM	phosphatic, moist	0			
1611	30	7/8	6/2		↓	↓							
							TD-30'						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): ______

Converted to Well: Yes ______ No ______ Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W03SB13
DATE: 3/2/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-01	0	5/9	6/6		med dense	brown	SAND, silty, fine-	SM	lab sample W03SB01301	0	0	0	0
1027	2	9/10	6/6				vfg		moist				
SS-02	2	NA	6/6			lgt brown				0			
1029	4		6/6										
SS-03	4	5/8	6/6							0			
1033	6	7/11	6/5	5.0	stiff-vy stiff	red-brown	SILT, sandy, fine-	ML	vy moist				
SS 04	6	5/10	6/6				vfg			0	0	0	0
1036	8	11/13	6/6										
SS 05	8	7/9	6/6										
1047	10	15/13	6/4	9.3	med dense	brown	SAND, fine-vfg, some	SM	sl. moist	0			
SS-06	10	6/7	6/6	10	stiff-vy stiff	red	silt SILT, w/ vfg sand	ML	vy moist				
1052	12	7/10	6/6										
SS 07	12	8/9	6/6						moist	0	0	0	0
1058	14	12/15	3/0										
SS-08	14	4/7	6/6			red-lgt brown	SILT, higher fine	ML	sl. moist	0			
1103	16	9/11	6/3				sand content, clayey						
SS-09	16	4/6	6/6				SILT, clayey w/ some	ML	lab sample W03SB01302	140			
1120	18	7/8	6/2				vfg sand						
SS-10	18	5/7	6/6					ML		80	0	0	0
1128	20	11/15	6/3	19.4	med.	red	SAND, fine-vfg						
SS 11	20	5/7	6/6		dense	gray-lgt red	SAND, fine-vfg	SW	sl. moist, phosphatic	130			
1145	22	10/13	2/0										
SS-12	22	6/11	6/6			white	Same as above	SW	sl. moist, phos, qtz + mica	10			
1157	24	15/20	6/0		dense	white							
SS 13	24	10/12	6/6				Same as above	SW		8			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______________________

Drilling Area Background (ppm): [ ]

Converted to Well: Yes ________ No ________ Well I.D. #: ________

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W03SB13
DATE: 3/2/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1204	26	16/19	6/0		dense	white	SAND, fine grained	SW	phosphatic w/ qtz, mica	8	0	0	0
SS-14	26	8/11	6/6							6			
1215	28	10/9	6/1		med dense	white red	SAND, fine, grading	SW					
SS-15	28	6/6	6/4			grey red	to med grained well rounded			0			
1224	30	7/7	6/2										
SS-16	30	5/6	6/6			grey	SAND, med grained	SW	lab sample W03SB01303	0			
1231	32	6/7	6/3										
							TD-32'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No X

Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7549
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W03SB14
DATE: 3/3/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Sample	Sampler BZ	Borehole**	Driller BZ**
NA Post-hole hand auger	0	NA	NA			black	Asphalt - 2"						
				1.5		brown	FILL sand+gravel SAND, fine silty		vy hard packed				
	4						SAND, fine, silty						
SS-01	4	4/12	6/6	4.5	vy stiff	red-brown	SILT, sandy, fine-vfg	SM ML	vy moist	0	0	0	0
0905	6	19/19	6/6		hard		some gravel		sl. moist,				
SS-02	6	9/13	6/6				SILT, sandy	ML	sl. moist, friable	0			
0913	8	14/17	6/6	8.0									
SS-03	8	9/13	6/6			red-brown w/ gray mottling	CLAY, silty w/ trace vfg sand	CL	sl. moist	0			
0915	10	17/18	2/0	10									
ST-01	10	NA	6/2				SILT, sandy, some clay	ML	Shelby Tube	0			
0925	12		0/0										
SS-04	12	9/13	6/6				SILT, sand, fine, vfg little clay	ML	sl. moist, friable	0	0	0	0
0935	14	11/15	6/3										
ST-02	14	NA	6/6						Shelby Tube				
0953	16		6/6						geotech sample W03SB01401				
SS-05	16	5/7	4/6		med stiff - stiff	gray pink	SILT, sandy, vfg,	ML	moist	0			
1010	18	8/11	6/3										
SS-06	18	3/6	4/6	15.5			CLAY, silty w/ some vfg sand	CL	moist lab sample W03SB01402	14			
1024	20	6/9	6/4	19.5			SILT, clayey, w/ vfg sand	ML	vy moist				
SS-07	20	7/9	6/6						moist	6	0	0	0
1030	22	15/20	6/6	21.3	dense	white	SAND, silty, vfg.	SM	phosphatic w/ qtz + mica sl. mo				
SS-08	22	5/6	6/6		med dense		"		"	14			
1035	24	6/6	6/4	22.6		white pink yellow	SAND, fine-vfg, banded	SW	sl. moist				
ST03 1050	24	NA					-refusal @ 25.5'		Shelby Tube				

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W03SB14
DATE: 3/3/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchel

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	26	NA	6/0						geotech sample W03SB1403				
SS-09	26	13/15	6/6		med dense	white	SAND, fine grained	SW	phosphatic	0	0	0	0
@ 1100	28	21/26	6/6	27.5	dense	pink (rose)	SAND, med grained	SP	subangular - sub rounded, qtz				
SS-10	28	11/17	6/6	28.2	dense	white	SAND, fine - vfg	SW					
@ 1110	30	15/21	6/3		↓	↓							
							TD - 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7591
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB01
DATE: 2/21
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS01 @	0	3/4	6/6		loose	reddish brown	SAND, silty fine	SP	FILL, slightly	0	0	0	0
1425	2	3/4	6/3						moist Sample W03SB00101				
SS02 @	2	2/3	6/6			red-brown	SAND, as above	SP		0			
1426	4	2/3	6/3										
SS-03 @	4	1/1	6/6		VY loose			SP	wet	270			
1435	6	2/2	6/6			dk gray							
SS-04 @	6	3/2	6/6					SP	SATURATED	1800			
1436	8	1/1	0/6										
SS-05 @	8	3/2	NR					SP		NA	0	0	0
1450	10	2/2											
SS-06 @	10	2/2	NR					SP		NA			
1452	12	1/1											
SS-07 @	12	1/0	6/6							5000	0	150	0
1502	14	1/0	6/6			dk gray	SAND, medium grain	SP	FILL, saturated				
SS-08 @	14	1/1	4/6						Strong petroleum odor	5000			
1505	16	1/2	6/4										
SS-09	16	5/6	6/4	16	med dense	red-brown	Same as above	SP		5000	0	160	0
1521	18	10/6	0/0										
SS-10	18	6/9	6/6				SAND, med, well rounded	SP	wet, strong petro. odor	5000			
1529	20	11/14	6/6	20									
SS 11	20	10/11	6/6			olive brown	SAND, med-coarse w/	SC	VY strong odor VY moist	1000			
1535	22	13/13	6/6	20.7		brown black red	Clay 20-20.7' SAND, fine-med	SW SP	lab sample W04SB00101		0	NA	0
SS 12	22	7/7	6/6	22.5						5000			
1603	24	8/9	6/4		Stiff	Gray	CLAY, sandy, w/ medium grain sand	CL	Sl. moist low plasticity				
SS 13	24	5/4	6/6							5000			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ______

R4708989

CTO 0028

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7549
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W04SB01
DATE: 2/21/98
GEOLOGIST: J. Hofer
DRILLER: D Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Sample	Sampler BZ	Borehole**	Driller BZ**
SS 13	1 26	5 / 8	6 / 1		Stiff	gray	CLAY, sandy, w/medium sand	CL	low plasticity Strong odor	7000			
SS 14	26	5 / 2	NR							NA	0	0	0
1621	28	2 / 4											
SS 15	28	5 / 5	6 / 6		med dense	gray	SAND, silty, medium grading to vfg	SM	phosphatic w/ mica & qtz, Sl. moist	0			
1627	30	5 / 7	6 / 3			white				750	0	0	0
SS 16	30	3 / 5	6 / 6			white	SAND, fine-vfg	SW	phosphatic - little to no silt, Sl. moist Strong odor	0			
1640	32	7 / 6	6 / 2							750			
SS 17	35	4 / 9	6 / 6		med dense	white	SAND as above banded white & orange	SW		0	0	0	0
1647	37	5 / 9	6 / 6							75			
SS 18	40	1 / 4	6 / 6				SAND as above	SW		750	0	20	0
1654	42	7 / 6	6 / 1										
SS 19	45	3 / 5	6 / 6			gray-brown	SAND, fine-med.	SW	offsite lab sample W04SB0010B	50			
1704	47	9 / 11	6 / 4	46.2 46.8		pink white	CLAY SAND, fine-vfg	CH SW	plastic				

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ____ Well I.D. #: ____

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7549
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: WO4SBO1
DATE: 2/21
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
SS 20	50	7 / 8	6 / 6		med dense	White	SAND, fine-vfg	SW	vy strong product odor	8	0	0	0
@ 1704	52	9 / 12	1 / 0							5			
SS 21	55	5 / 3	6 / 0		med dense	white	SAND, fine-vfg	SW	phosphatic w/ mica + qtz	200			
@ 1725	57	10 / 11	0 / 0						vy strong odor	75			
3/48													
SS 22	60	6 / 12	6 / 6				SAND as above	SW	phosphatic w/ mica + qtz	200	0	15	0
@ 0725	62	24 / 28	6 / 3		vy dense	White			strong hydrocarb odor	75			
SS 23	65	2 / 5	6 / 6		dense	white	SAND as above	SW	strong pet. odor	200	0	0	0
@ 0735	67	12 / 17	6 / 0							75			
SS 24	70	10 / 16	6 / 6			white pink	SAND as above w/	SW		200	0		0
@ 0748	72	23 / 27	6 / 6		vy dense	white	pink banding in top 6" of sample			75			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: Whiting Field RI/FS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB01
DATE: 2/23/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
SS 25 @ 0800	75–77	6 / 9 / 5 / 8	4/6, 5/		dense	red yellow pink white	SAND, fine-med grained, colored banded	SP	phosphatic, well rounded, strong odor, Sample W04SB00104	500	0	300	0
SS 26 @ 0813	80–82	20 / 32 / 40 / 50	4/6, 6/6	80.6	vy dense	red yell gray	SAND - clayey to 80.6, med grained, well rounded, banded	SC SP	phosphatic, sl. odor, sl. moist	350	0		0
SS 27 @ 0830	85–87	12 / 23 / 40 / 50/3	6/6, 6/3		vy dense	red gray white	SAND, no clay, med grain, well rounded, refusal @ 86.8'	SP	phosphatic, sl. moist	8	0	0	0
SS 28 @ 0840	90–92	15 / 26 / 35 / 43	6/6, 6/6		vy dense	banded as above	SAND, med-coarse, trace gravel	SW	qtz, mica, phos, w/ 0.5" qtz pebbles, sl. moist	500	0	0	0
SS 29 @ 0907	95–97	7 / 13 / 10 / 9	4/6, 4/6	96.4	dense	yellow brown	SAND, fine-vfg; SAND, fine-coarse		saturated, well rounded	500	0	0	0

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

R4708989   CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 4SB02
DATE: 3/25/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Post hole

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
SS-01 @ 0843	0 - 1	NA	6/6			brown	SAND, fine, silty	SM	sl. moist / Lab sample W04SB00201			
	1 - 2		6/0									
SS-02 @ 0848	4 - 5		6/4		med dens	brown gray	SAND, med	SP	wet	0.6		
	6		6/6	5.2	vy stiff	yel red	CLAY, sandy	CL	moist			
SS-03 @ 0850	6 - 7		6/6	6.1	stiff		SILT, sandy, fine-med sand	ML	sl. moist	0.4		
	8		6/1			red						
SS-04 @ 0853	8 - 9		6/5	8.0	med stiff	red	CLAY, sandy	CL	moist	0.5		
	10		0/0									
SS-05 @ 0905	10 - 11		6/6			red		CL	moist	0.4		
	12		6/4									
SS-06 @ 0907	12 - 13		6/6			red	Grading to SAND,	CL	sl. moist	0.4		
	14		6/2	13.0	med dense		clayey - med - coarse sand	SC				
SS-07 @ 0915	14 - 15		6/6							0.7		
	16		6/4	15.2	vy stiff	well gray	SILT, w/ fine sand	ML	sl. moist			
SS-08 @ 0920	16 - 17		6/6			red-gray	SILT, clayey w/ some			1.0		
	18		6/4				fine sand					
SS-09 @ 0927	18 - 19		6/6			Pinkish				13.8		
	20		6/3			gray						
SS-10 @ 0933	20 - 21		6/6		dense		SAND, med	SP	Lab Sample W04SB00202	59.5		
	22		6/4						Duplicate W04DP00201			
SS-11 @ 0937	22 - 23		6/6		stiff		SILT, sandy, fine-	ML	phosphatic	26.9		
	24		6/2				med. grained		sl. moist			
SS-12	24		6/6							35.8		

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile-B-61
BORING NUMBER: 4SB02
DATE: 3/25/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading: Sample	PID/FID Reading: Sampler BZ	PID/FID Reading: Borehole**
@ 0943	26	NA	6/2		med dense	Pinkish gray	SAND, silty, med grained	SM	Moist			
SS-13	26		6/6		loose	gray	SAND, fine-med w/	SW		5.0		
@ 0948	28		5/0				trace coarse sand					
SS-14	28		6/6			grayish pink	SAND, silty,	SM	moist	467		
@ 0953	30		6/4									
SS-15	30		6/6				SAND, fine	SW	Lab sample	8.9		
@ 0955	32		6/0						W04SB00203			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ______ No X Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB003
DATE: 2/20/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS01	0	NA	6/6		vy loose	brown	SAND, fine-med	SM	FILL		0		
↓	2		2/0				silty			0			
SS02	2		6/6			dk brown	SAND, fine-med	SP				5.0	[illegible]
↓	4	↓	1/0				little-no silt			19.9			
SS03	4	2/1	6/6			brown		SP	Vy moist				
↓	6	1/1	1/0			red brown				20.1			
SS04	6	2/2	6/6					SP			0	12.8	0
↓	8	2/1	6/1		↓					26.4			
SS05	8	5/6	6/6		med dense	olive gray		SP					
↓	10	4/3	6/3		↓	red brown				28.0			
SS06	10	2/1	6/6		loose	olive green		SP	SATURATED				
↓	12	1/0	1/0							106.1			
SS07	12	1/0	6/6					SP			0	24.6	[illegible]
↓	14	1/0	6/2							403.3			
SS08	14	1/0	6/6					SP					
↓	16	0/1	1/0	16.5	↓	↓				234.7			
SS09	16	NA	NA				concrete		refusal @ 16.4'	NA			
↓	18	↓	↓	18.0						↓			
SS10	18	7/9	6/6		vy stiff	~~vy stiff~~ red-lt gray	CLAY sandy	CL	sand med, plastic, vy moist		0	0	0
↓	20	7/10	5/0							1990			
SS11	20	7/13	6/6	21	↓				sl. moist, plastic	3795			
↓	22	21/18	6/3	22	dense	white red-brown	SAND, fine-med	SW	phosphatic,	3795			
SS12	22	7/10	6/6		stiff-vy stiff	red-brown	CLAY, vy sandy, med	CL	some coarse, trace phos.		0	15.7	0
↓	24	11/11	6/5							73795			
SS13 ↓	24	4/7	6/6		↓	gray		CL		3795			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X ____ Well I.D. #: ____

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB03
DATE: 2/20
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
SS13	26	7 / 10	6 / 4		VY Stiff					5??			
SS14	26	7 / 11	4 / 6	26.5		gray	Grading to Clayey SAND	SC		152.4	0	11.8	0
	28	14 / 19	6 / 2		med dense								
SS15	28	7 / 7	6 / 6	28.5		gray	SAND, silty, vf-med grained	SM	phosphatic w/ Qtz, mica trace coarse sand	105.1			
	30	9 / 10	6 / 6										
SS16	30	6 / 7	6 / 6			gray	SAND, vf-fine w/ 1" thick silt lenses	SM		78.4	0	10.8	0
	32	5 / 10	6 / 1										
SS17	35	5 / 7	6 / 6		med dense	white	SAND, fine-med	SP	phosphatic w/ Qtz, mica, sl. moist	543.8	0		0
	37	9 / 11	6 / 4										
SS18	40	6 / 7	6 / 6		med dense	white	SAND as above	SW	sl. moist Qtz pebbles	514.8	0	7.3	0
	42	10 / 9	6 / 3										
SS19	45	6 / 9	6 / 6		med dense	white gray	SAND, vf-fine, silty	SM	few Qtz pebbles phosphatic moist	36.9	0	59.9	0
	47	11 / 12	6 / 0										

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X   Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7544
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W04SB03
DATE: 2/20/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS 20	50	8 / 14	6 / 6	50.2	v/stiff	gray	SAND, vf-fine	SW	phosphatic	95	0	46.1	0
				50.8		pink	CLAY	CH	plastic				
↓	52	19 / 24	6 / 6		dense	white	SAND, fine-med	SP	phosphatic				
SS 21	55	8 / 13	6 / 6		med dense	white	SAND, fine	SP	phospatic, w/ qtz, mica	9	0	0	0
	57	17 / 23	6 / 2		dense								
SS 22	60	5 / 13	6 / 6	60.7		White Pink	SAND - clayey, silty SAND	SC		496	0	0	0
	62	14 / 18	6 / 1										
SS 23	65	10 / 13	6/6			white	Sand, white, fine-v.f.	SW	moist, strong petroleum odor	21	0	0	0
@	67	18 / 30	6/6										
1720													
SS 24	70	20 / [illegible]	6/6			white	Sand, fine to v.f.	SW	moist, strong petroleum odor	>37[illegible]	0	0	0
@	72	10 / 14	6/6	↓		pink	Sand, fine to v.f., silty	SW	moist, strong petroleum odor				
1732													

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB03
DATE: 2/20/98
GEOLOGIST:
DRILLER: N. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
SS 25 @ 1744	75 ↓ 77	10 / 23 21 / 27	6/6 6/6			white	Sand, fine to v.f.	SW	moist, strong petroleum odor	356	0	0	0
SS 26 @ 1758	80 ↓ 82	10 / 16 18 / 18	6/6 6/6			white to pink/ maroon	Sand, med. to fine 80'–80.4', clean fine to v.f., banded coloring	SW	moist, strong petroleum odor	>375	0	0	0
SS 27 @ 1819	85 ↓ 87	11 / 23 38 / 34	6/6 6/6			white to pink	Sand, fine grnd.	SW	moist, strong petroleum odor	>375	0	0	0
SS 28 @ 1830	90 ↓ 92	20 / 36 33 / 44	6/6 6/6			white dark reddish brown	Sand, fine grnd last 0.2'	SW	moist, strong petroleum odor	>375	0	0	0
SS 29 @ 1859	95 ↓ 97	7 / 14 12 / 12	6/6 6/6	96.8'		yellowish tan	Sand, fine grnd, silty clay, tan, silty		wet, petroleum odor		0	0	0

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ______ No ______ Well I.D. #: ______

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 45B04
DATE: 3/24/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading Sample	Sampler BZ	Borehole**	Driller BZ
Post hole	0	NA				dk brown	SAND, silty		lab sample W045B00401 W04DP00401-Dup	0.6			
	1												
	2					red			Sl. moist				
	2		NA						moist				
	4				loose	black	SAND, silty	SM	Wet				
SS-2 @	4		6/6	4.8					SATURATED				
1302	6		4/6		vy stiff	gray	CLAY, sandy	CL	moist plastic	0.2	0	0	0
SS-03 @	6		6/6										
1304	8		1/0				- increased sand content			2.5			
SS-04 @	8		5/0			brown/ yellow	SAND, clayey - Sandy CLAY	CL	Sl. moist	1.0			
1306	10		0/0										
SS-05 @	10		6/6		vy stiff	pink-gray	CLAY, sandy, fine	CL	sl. moist	1.2			
1322	12		1/0								0	0	0
SS-06 @	12		6/4		vy stiff		SILT, sandy	ML	sl. moist, low plasticity	1.0			
1324	14		0/0										
SS-07 @	14		6/6	14.5	loose	red-yellow	SAND, fine-med	SW	phosph. sl. moist	8.5			
1327	16		5/0										
SS-08 @	16		4/6			Pink				16.5			
1335	18		6/6								0	0	0
SS-09 @	18		6/4			lgt Pink				7.0			
1345	20		0/0				SAND, finegrained	SP	Abundant phos.				
SS-10 @	20		6/6						MS/MSD Sample W04MS00401	18.0			
1354	22		4/5										
SS-11 @	22		6/6			White gray	SAND, silty, vfg.	SM	lab sample W045B00402	42.0			
1404	24		3/0								0	0	0
SS-12	24		6/6			White	SAND, fine-medgrained	SW		38.8			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Mobile B-61
DRILLING RIG: Gulf Atlantic
BORING NUMBER: 4SB04
DATE: 3/24/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
@1408	26	NA	6/0		loose	white	SAND, fine-med.	SW	phosph, sl. moist-dry		0	
SS-13	26		6/6				SAND, fine-med w/ gravel zone 26.5-27.0			154.1	0	0
@1425	28		6/5									
SS-14	28		6/6		loose	White				120	0	0
@1428	30		5/0									
SS-15	30											
@1442	32											
SS-15	35	NA	6/6		loose	white	SAND, fine	SP	lab sample W04SB00403	22.6		
@1442	37		4/3									
SS-16	37		4/6							11.0		
@1448	39		6/0									
SS-17	40	NA				white	SAND	SP		2.1		
@1500	42											
SS-18	45	NA				white	SAND	SP		6.6		
@1510	47											
							TD - 47 ft					

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 04SB05
DATE: 3/24/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-01 @ 0933 post hole	0	NA				Black	SAND, gravelly		Lab sample W04SB05001				
				1.0		brown	SAND, fine, silty	SM					
	4												
SS-02 @	4		6/4		med dense	brownish yell	SAND, silty	SM	wet	0.2			
0935	6		4/6										
SS-03 @	6		4/6							0.6			
0937	8		4/0						sl. moist				
SS-04 @	8		6/6	7.9	stiff	yellow red	sandy SILT	ML		0.9			
0946	10		3/0	9.1			CLAY, sandy w/ silt	CL	moist-sl. moist				
SS-05 @	10		6/6										
0952	12		6/3	11.5	dense	gray, yellow, red	SAND, clayey	SC	sl. moist	0.6			
SS-06 @	12		6/6	12.2	stiff	reddish gray	CLAY silty-sandy	CL	plastic, moist	0.8			
0958	14		3/0										
SS-07 @	14		6/6							3.6			
1003	16		6/2										
SS-08 @	14		6/6							3.3			
1010	18		5/0	17.0	med dense	red	SAND, fine-med	SW	sl. moist				
SS-09 @	18		6/6							4.0			
1018	20		6/1										
SS-10 @	20		6/6		loose	gray	Same as above	SW	moist	7.3	0	0.2	0
1024	22		6/3			yellowish white							
SS-11 @	22		6/6		loose	white	SAND		moist	6.9			
1030	24		6/4										
SS-12	24		6/6							4.5			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ___ No X Well I.D. #: ___

R4708989

CTO 0028

BORING LOG

PROJECT NAME:	NAS Whiting Field	BORING NUMBER:	45B05
PROJECT NUMBER:	7541	DATE:	3/24/98
DRILLING COMPANY:	Gulf Atlantic	GEOLOGIST:	J. Hofer
DRILLING RIG:	Mobile B-61	DRILLER:	D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
1035	26	/	6/2		loose	white	SAND, fine-med	SW	Phos, moist				
SS-13	26	/	8/6		↓	↓		↓		23	0	0	0
1043	28	/	4/0										
SS-14	28	/	4/6				Same as above		Lab Sample W04SB00502	180			
1048	30	/	6/2										
SS-15	30	/	6/6							1.9			
1100	32	/	0/0		↓	↓		↓					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: ______

Converted to Well: Yes ____ No X Well I.D. #: ______

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 04 SB06
DATE: 2/18/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
HA	0	NA				brown	SAND, brown		W04-SB006-01	0			
↓	2									1.0			
↓	4	↓								0.6			
SS-1	4	2 / 3	6 / 6		loose	brown	SAND, fine-med		FILL	4/29	0		0
↓	6	3 / 3	6 / 6		med dense	brown							
SS-2	6	3 / 4	6 / 6		loose	red	Same as above		vy moist		0	25	
↓	8	4 / 3	6 / 6										
SS-3	8	2 / 3	6 / 6				SAA		strong	4/29	0		
↓	10	2 / 3	6 / 6		↓				odor				
SS-4	10	1 / 2	6 / 6		vy loose		SAA		wet	4/29			
↓	12	2 / 2	6 / 6									33	0
SS-5	12	1 / 1	6 / 6							4/29			
↓	14	2 / —	6 / 0		↓		Concrete @13.5'						
SS-6	14	2 / 3	6 / 6		loose	red-dk	SAND, med w/		Fill vy strong	4/29			
~~SS-7~~	16	7 / 3	6 / 1		↓	olive green	pea gravel		odor, wet				
SS-7	16	4 / 7	6 / 6	17	Stiff	lgt gray	CLAY, silty, sand,		plastic, moist	4/29			
~~SS-8~~	18	10 / 8	6 / 2			dk red							
SS-8	18	3 / 4	6 / 4				Interbedded		W04-SB-006-02	4/29	0	68	0
↓	20	6 / 8	4 / 6				silty sandy CLAY,						
SS-9	20	7 / 12	6 / 6		↓		CLAYEY SILT			4/29			
↓	22	23 / 28	6 / 6	21.7	vy dense	wt, yell	SAND, med-coarse						
SS-10	22	8 / 17	6 / 6		med. dense				phosphatic	4/29			
↓	24	14 / 18	4 / 0		↓	white	SAND, fine-med					-	0
SS-11	24	6 / 10	6 / 6		↓					4/29			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Encountered concrete @13.5' Moved N. 10' + E 3'. Drilled to 14' then resumed sampling

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 04SB06
DATE: 2/18/91
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	26	18 / 20	2 / 0		dense					[illegible]			
SS-12	26	5 / 6	6 / 6		med. dense					[illegible]			
↓	28	7 / 7	6 / 4		↓					[illegible]			
SS-13	28	5 / 6	6 / 6							[illegible]			
↓	30	6 / 8	6 / 5	29	stiff	pink	SILT, w/ vfg sand	ML	v. moist strong odor	[illegible]			
SS-14	30	3 / 5	6 / 6		↓				phosphatic	9	0	28.4	0
↓	32	5 / 7	6 / 5	31.5	med dense	white pink	SAND, vfg; dense coarse SAND 31.6 - 31.7	SM		[illegible]			
SS-15	35	4 / 6	6 / 6		med dense	lt gray	SAND, fine, silty	SM	Coarse sand lense @ 36'	30			
↓	37	8 / 9	6 / 4					SM	phos., red + olive gray-green lamin. sl. moist	36			
SS-16	40	4 / 7	6 / 6		med dense	white	SAND as above	SM		30	0	64	0
↓	42	11 / 14	6 / 4							36			
SS-17	45	3 / 5	6 / 6		med dense	white	SAND, fine-vfg	SM		30			
↓	47	6 / 6	6 / 3							36			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ______

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: GAD
DRILLING RIG: Mobile B-61
BORING NUMBER: ~~04~~04SB06
DATE: 2/18-19/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS18	50	7/15	6/6	50.6	Stiff Dense	Pink	CLAY SAND, fin-med	CH SW	vy Plastic, moist	[illegible]	0	5.4	0
↓	52	16/20	6/4			White			Phosphatic W04-SB~~00~~006-03				
SS19	55	7/9	6/6		med. dense	white	SAND, fine-vfg	SP	phosphatic, sl. moist	[illegible]			
↓	57	12/14	6/0										
SS20	60	10/17	6/6		dense	white	SAND, fine-med.	SP	phosphatic, sl. moist	[illegible]	0	2.7	0
↓	62	21/24	6/2										
SS21	65	6/15	6/6		dense	white	Sand as above	SP	phos, sl. moist	[illegible]			
↓	67	23/25	6/5						W04-SB006-04				
SS22	70	9/17	6/6		dense	white	SAND as above	SP	phos., sl. moist	[illegible]	0	0.2	0
↓	72	21/26	6/5										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X   Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME:	Whiting Field	BORING NUMBER:	04SB06
PROJECT NUMBER:	7591	DATE:	2/18-19/98
DRILLING COMPANY:	Gulf Atlantic	GEOLOGIST:	J. Hofer
DRILLING RIG:	Mobile B-61	DRILLER:	D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS23	75	9 / 20	6 / 6		vy dense	white	SAND as above	SP	phosphatic sl. moist	555.4			
	77	28 / 29	1 / 0										
SS24	80	18 / 18	6 / 6		dense -	white - vy lt	SAND vf-med	SW	phosphatic,	950.7	0	4.8	0
	82	23 / 29	6 / 5		vy dense	pink			sl. moist				
SS-25	85	14 / 21	6 / 6		vy dense	wt, red, yell.	SAND, medium grained	SP	trace phos.	107.8			
	87	28 / 34	6 / 3				well rounded		moist				
SS26	90	6 / 8	6 / 6		med dense	lt gray red	SAND, med/coarse grained	SP	SATURATED	3344			
	92	12 / 16	6 / 1				well rounded						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): ______

Converted to Well: Yes ______ No ______ Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 45B07
DATE: 3/11/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-01	0-1	NA	4/6			dk brown	SAND, silty	SM	dry - sl. moist	0	0	0	0
2	2		6/DOWN						lab sample W04SB00701				
SS-02	2												
4	4												
SS-03	4		4/6		med dense	reddish brown	SAND, silty, fine	SM	wet	370	0	17.4	0
0912	6		6/6										
SS-04	6		6/6			dk brown	SAND, silty, fine-vfg	SM	wet	146			
0914	8		6/6										
SS-05	8		4/4				Same as above	SM	wet	270			
0917	10		6/5										
SS-06	10		4/4				Same as above	SM	wet	554	0	0	0
0919	12		4/5						moist				
SS-07	12		6/6				Same as above	SM	sl. moist	738			
0945	14		4/0						lab sample W04SB00702 W04DP00701-Dup				
SS-08	14		4/6				Same as above	SM	moist	41			
0952	16		4/5							738			
SS-09	16		4/6		loose	gray	SAND, fine-med	SW	SATURATED	41 738	0	48.0	0
1012	18		6/0										
SS-10	18		4/6				Sand as above	SW	SATURATED	41 738			
1015	20		0/0										
SS-11	20						TD-20ft				0	100	0
	22												
SS-12	22												
	24												
SS-13	24												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W04SB08
DATE: 2/23/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
SS-01	0	4/6	6/6		med dense	black red	SAND, silty, fine.	SM	Top soil 0-0.5' Fill 0.5-1.0	0	0	0	0
SS-02	2	4/8	4/1			brown			lab sample W04SB00801				
SS-02	2	1/2	4/6	~~2.5~~			~~SAND, clayey~~	SM	wet	0			
SS-02	4	3/4	4/6										
SS-03	4	1/3	4/6	4.5		brown red	SAND, clayey, silty	SC	saturated to 4.5' then moist	0			
	6	2/5	4/4			brown	fine w/ some med sand						
SS-04	6	2/4	6/6	6.0		lgt brown	SAND, silty w/ some clay, fine-vfg	SM	moist	0	0	0	0
	8	10/10	3/0										
SS05	8	3/7	4/6	8.0	stiff	brown gray-red	SILT, sandy-clayey, w/ vfg sand	ML	moist, stiff	2			
	10	7/12	4/2		vy stiff								
SS-06	10	4/9	4/6			gray redy	SILT as above	ML	moist,	0			
	12	15/19	6/1		hard	brown							
SS-07	12	6/10	4/6		vy stiff	pink-gray	SILT, sandy, w/ vf-med sand	ML		0			
	14	11/11	4/6						somewhat plastic				
SS-08	14	3/6	6/6		stiff		same as above	ML	No hydrocarbon odor	0	0	0	0
	16	5/13	4/0			gray	SAND, vf-med grain	SM	phosphatic w/ qtz + mica	310			
SS-09	16	8/11	6/6				some silt		sl. moist				
	18	15/12	4/2	17.0						140			
SS-10	18	4/7	4/6					SM	sl. moist				
	20	9/7	4/6							200	0	0	0
SS-11	20	5/4	6/6	20		gray w/ pink	SAND, fine-vfg	SP		90			
	22	12/12	6/1										
SS-12	22	3/4	6/6			white	SAND, fine-vfg	SP		17.0			
	24	5/5	5/0										
SS-13	24	3/6							lab sample W04SB00802	240			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB08
DATE: 2/23/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	26	4/7	4/2		med dense								
SS-14	26	4/9	6/6			white	SAND, fine-med	SW	phosphatic,	24.0	0	0	0
1647	28	11/12	4/4										
SS-15	28	4/5	4/6			red + white	SAND as above			40.0			
1652	30	7/7	4/1				banded						
SS-16	30	4/6	6/6			white	SAND w/ gravel med	SW	phosphatic,	38.0	0	0	0
1654	32	7/8	6/1				grained, well rounded						
SS-17	35	8/12	6/6		med dense	white	SAND, fine grained	SW	phosphatic sl. moist	0	0	0	0
1708	37	17/21	4/4				vfg		lab sample W04SB00803				
							TD - 37'						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB09
DATE: 2/24-25/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS01 @	0	7/3	6/6		med dense	red	SAND, silty w/ some clay, fine-vfg	SM	Topsoil 0-0.5'	2	0	0	0
1525	2	13/10	6/6						lab sample W04SB00901				
SS02 @	2	4/6	6/6			red	SAND, silty, clayey fine-vfg	SM	moist	0			
1527	4	4/6	6/5										
SS03 @	4	/8	6/6			red	Same as above	SM	vy moist	1			
1539	6	7/6	6/4								0	0	0
SS04 @	6	8/10	4/6			red	SAND, silty, fine-med	SM	vy moist	21			
1532	8	11/8	6/4										
SS05 @	8	5/5	6/6			red-brown	SAND, as above	SM	wet	120			
1549	10	5/5	6/0										
SS06 @	10	1/2	6/6		loose		Same as above	SM	wet, sl. hydro odor	250			
1552	12	3/2	6/3								0	0	0
SS07 @	12	4/7	4/6		med dense				saturated	500			
1557	14	11/10	4/6	13.7		brown	SAND med clayey	SC	~~Saturate~~				
SS08 @	14	4/7	6/6			olive green	SAND, med-coarse, clayey		Saturated strong hydrocarbon odor	500			
1600	16	10/12	0/0										
SS09 @	16	7/10	6/6		vy stiff	red-olive green	CLAY, sandy, w/ med grained sand	CL	sl. moist vy strong hydrocarbon odor lab W04SB00902	500	0	0	0
1609	18	11/9	6/4										
SS10 @	18	7/10	6/6				SILT, sandy w/ fine sand	ML	sl. moist, vy strong odor	250			
1610	20	9/9	6/2										
SS11 @	20		0/0							NA			
1623	22	10/11	6/6										
SS12 @	22	4/5	6/6		stiff	red-gray	SILT as above	ML	sl. moist	350			
1626	24	7/5	6/4										
SS13 1630	24	4/2	6/6			red-olive gray	SILT, w/ vfg sand	ML	sl. moist	800			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X

Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 754P
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: WO4SB09
DATE: 2/24-25/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchel

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
1630	26	8/7	4/6		stiff	red-olive gray	SILT, w/ vfg sand	ML	sl. moist		0	0	0
SS14	26	21/20	4/1		dense-	gray-	SAND, vy silty, fine,	SM	moist, hydrocarb.	1700			
0735	28	27/30	0/0		vy dense	red	some clay		odor				
ST01	28	NA	6/6						Shelby Tube				
0805	30		6/6						W04SB00903				
SS-15	30	5/7			med dense	White	SAND, fine-med w/	SW	phosphatic, w/ qtz & mica	500	0	0	0
0830	32	9/11					some coarse sand,		~~sl.~~ hydrocarb odor				
SS-16	35	5/9	6/6		med dense	White	SAND as above	SW	Strong hydrocarb. odor	3500			
0843	37	7/10	1/8						lab sample W04SB00904				
SS 17	40	6/8	6/6		med dense	White	SAND as above	SW		1500	0	0	0
0852	42	11/14	6/5										
SS19	45	10/13	6/6		med dense	White	SAND as above	SW		3400			
0906	47	15/16	6/4				w/ ~~fo~~ some fine gravel						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X

Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7544
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: WD4SB09
DATE: 2/24-25/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS 19 @ 0938	50 - 52	10/15 20/20	6/6 6/6		dense	White	SAND, fine-vfg w/ some coarse sand + fine gravel	SW	Phosphatic qtz, mica, hydrocarbon odor	800	0	0	0
SS 20 @ 0949	55 - 57	9/16 18/22	6/6 6/6		dense	White	SAND as above	SW	Sl. moist strong hydrocarb odor	0 / 800			
SS 21 @ 1008	60 - 62	10/18 15/23	4/6 6/6		dense	White	SAND as above	SW	Sl. moist	195	0		
SS 22 @ 1026	65 - 67	8/11 17/25	6/6 6/6	65	dense	White + Pink	SAND, fine-vfg, some silt	SM	Phosphatic hydrocarbon odor, sl. moist	1200			
SS 23 @ 1053	70 - 72	7/21 23/32		71.1 - 71.3	dense / vy dense	White / Red-Yellow	SAND, fine-vfg. silty to clayey 71.1-71.3	SM	Phosphatic, sl. moist,	0 / 175	0	0	0

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ______ No X Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7549
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: WO4SB09
DATE: 2/24-25/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
SS-24	75	12/20	4/6		dense-	white red,	SAND, fine-med, well	SW	Sl. moist	0	0	0	0
@1115	77	27/37	4/3		V/dense	brown yellow	rounded, banded		Hydrocarb. odor	600			
SS 25	80	9/14	6/6		dense	red white	SAND as above	SW	Sl. moist	0			
@1134	82	13/12	6/6			brown	finer grained		Hydrocarb. odor	200			
SS 26	85	10/27	6/6			white red	SAND, vf-fine	SW	moist, phos.	0			
@1200	87	50/6	4/		V/dense	gray	refusal @ 86.5'			400			
SS 27	90	15/18	6/6		dense	white	SAND, fine, well	SW			0	0	0
@1227	92	21/25	6/5			brown	rounded		saturate @ 91'	1000			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 6

Converted to Well: Yes ____ No X

Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB10
DATE: 2/24/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-01 @	0	8/8	6/6		med dense	black red	SAND, silty, loamy	SM	sl. moist	4	0	0	0
1032	2	15/10	6/3			brown							
SS 02	2	6/8	6/0			brown	SAND, silty, fine - vfg	SM	moist	10.0			
@ 1034	4	6/8	0/0										
SS03 @	4		6/6			brown	SAND as above	SM	wet	9.0			
1037	6		4/0										
SS04	6	4/7	6/6			brown red	SAND silty some clay	SM	weT	20	0	0	0
@ 1041	8	3/4	6/3			red							
SS05 @	8	6/8	4/4		stiff	red	CLAY, silty, sandy w/ fine sand	CL	moist, low	0			
1051	10	20/12	6/1										
SS06 @	10	6/8	6/6		↓	red	Sandy CLAY - Clayey SAND	CL-SC	vy moist	0			
1055	12	12/12	6/2										
SS07 @	12	5/8	6/6			red	SAND, silty, some clay	SM		0			
1100	14	7/10	6/1										
SS08	14	4/5	6/6		stiff	brown + gray	SILT, vy sandy w/ f- med sand	ML	- moist, brown + gray mottled	20			
@ 1104	16	7/7	6/3										
SS09	16	9/11	6/6		vy stiff	gray-red	SILT, some vfg sand	ML	vy low plast	8.0			
1110	18	15/18	6/3						Shelby Tube sample				
~~SS10~~ ST01	18	NA ↓	6/6						W04SB01002 refusal @ 19.2				
@ 1120	20		3/0			white lgt yellow	SAND, fine grained	SP					
SS10	20	15/24	6/6		vy dense	white	SAND, fine - vfg	SW	phosphate w/ qtz + mica	0			
@ 1135	22	26/30	6/4										
SS11	22	11/12	6/6		dense	white	SAND as above	SW		17.0			
@ 1139	24	16/18	6/3										
SS12	24	15/16	6/6			white	SAND as above	SW		0			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X

Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W04SB10
DATE: 2/24/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
@ 1146	26	21/18	6/1		dense	white	SAND, fine-vfg	SW	sl. moist phosphatic w/ qtz + mica				
SS13	26	10/20	6/6							0			
1153	28	26/26	6/3		vy dense								
SS14	28	5/5	6/6		dense	white	SAND, vfg, silty w/ clay lense 28.2-28.4	SM	moist, phosphatic	50	0	0	0
@ 1158	30	6/6	6/4			gray			lab sample W04SB01003				
SS15	30	6/5	6/6							26			
@ 1201	32	7/9	6/2										
SS16	35	10/21	6/6		vy dense	white	SAND fin-med w/ some-trace coarse sand + fine gravel	SW	sl. moist phosphatic, sub-well rounded	8	0	0	0
@ 1314	37	31/35	6/6										
SS17	40	4/12	6/6		dense	white	SAND as above	SW	lab sample W04SB01004	17			
@ 1326	42	9/12	4/4										
ST02	45	NA	4/6			white	SAND		Shelby Tube W04SB01005				
@ 1337	47		4/6										
							TD - 47'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 4SB11
DATE: 3/25/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Post hole

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
~~SS01~~	0 / 1	NA			med dense-loose	brown	SAND, fine, silty	SM	Lab sample W04SB01101		0	0	0
	2												
SS-02	4		6 / 6		med stiff	red	CLAY, sandy	CL	moist	0.7	0	0	0
1055	6		6 / 3										
SS-03	6		6 / 6			red	SAND, fine, silty	SM	sl. moist	0.5			
1058	8		6 / 4										
SS-04	8		6 / 6					SM	Moist - vy moist	0.5			
1100	10		1 / 0										
SS-05	10		6 / 6		loose	red-brown	SAND, fine-med	SP	SATURATED	0.3	0		0
1106	12		6 / 0										
SS-06	12		6 / 6										
1115	14		6 / 6	13.0	med stiff	brown red	SILT, sandy	ML	friable, sl. moist	0			
SS-07	14		6 / 6	14.5									
1118	16		6 / 3		med dense		SAND, silty, v fg	SM	sl. moist	0			
SS-08	16		6 / 6	~~16.+~~						0.3			
1126	18		5 / 0		med dense	brownish gray-red	increased silt content						
SS-09	18		6 / 6	18.0	vy stiff	gray-brown	~~SILT~~ CLAY, sandy	CL	sl. moist	0.6			
1129	20		4 / 0										
SS-10	20		6 / 6	20.0	loose	white	SAND, fine	SP	sl. moist, phos	0.9			
1137	22		3 / 0										
SS-11	22		6 / 6	22.4	vy stiff	lt purple	SILT, sand, clayey, fine sand	ML	sl. moist, low plast.	4.5			
1140	24		6 / 2										
SS-12	24		6 / 6						MS/MSD W04MS01101	27.8			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No X Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 4SB11
DATE: 3/25/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
@ 1145	26	NA	6/3		med-dense	Purple	SAND, silty, clayey	SM	Sl. moist			
SS-13	26		6/6	27.4					Field Dup for W04SB01162	55.4		
@ 1156	28		6/3		loose		SAND, silty, fine	SW	(W04DP01101) Sl. moist phos			
SS-14	28		6/6			white			Lab sample	90.6		
@ 1205	30		4/4						W04SB01102		0	0
SS-15	35	NA	6/6		loose	White	SAND, fine-med	SW	Sl. moist, phosph.	9.1	0	0
@ 1306	37		0/0						Lab sample W04SB01103			
SS-16	40	NA	6/6		loose	White	SAND ~~med~~ w/ fine gravel	SW	Sl. moist-dry phos.	3.6	0	0
@ 1312	42		6/1									
SS-17	45	NA	6/6		loose	White	SAND as above	SW		5.5	0	0
@ 1319	47		6/6									

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME:	NAS Whiting Field	BORING NUMBER:	4SB11
PROJECT NUMBER:	7541	DATE:	3/25/98
DRILLING COMPANY:	Gulf Atlantic	GEOLOGIST:	J. Hofer
DRILLING RIG:	Mobile B-61	DRILLER:	D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-18	50	NA	6/6		loose	white	SAND, med, some	SW	sl. moist-dry,	0.3			
	52		6/1				fine gravel		phosphatic				

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ____________

Drilling Area Background (ppm): [ ]

Converted to Well: Yes ______ No ______ Well I.D. #: ______

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B001** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

Site: 30 - Southfield Hanger	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	5/23/96	1330
Drill Method: HSA	**Finished**	5/23/96	1450

Borehole Diameter: 6 in. | **Total Depth:** 52 ft. BGS | **Logged By:** J. Beachcamp | **Entered By:** Tetra Tech NUS

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
30B00101		30/30/30/30				SAND, silty, high organic content, moderate yellowish brown, well graded.	0	SM	dry
30B00102		7/4/4/4		5		CLAY, sandy, poorly graded, moderate yellowish brown.	0	SC	dry
30B00103		12/15/15/15		10		CLAY, with some sand, light brown, poorly graded.	0	ML	dry
30B00104		10/10/10/10		15		SILT, some sand and clay, dark yellowish orange, poorly graded.	0	SM	dry
30B00105		10/12/18/17		20		CLAY, silty, grayish orange, poorly graded, no organics.	0	SM	dry
				25					
30B00106		10/17/19/14		30		SAND, silty, grayish orange, poorly graded, no organics.	0	SM	dry

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B001** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 2 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
30B00107		12/15/19/22		40		SAND, silty, yellowish gray, poorly graded, no organics.		SM	dry
				45					
30B00108		22/24/26/27		50		SAND, silty, yellowish gray, poorly graded, no organics. TD - 52'		SM	dry
				55					
				60					
				65					
				70					

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B002** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

Site: 30 - Southfield Hanger	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	5/23/96	0920
Drill Method: HSA	**Finished**	5/23/96	1040

Borehole Diameter: 6 in. | **Total Depth:** 52 ft. BGS | **Logged By:** J. Beachcamp | **Entered By:** Tetra Tech NU

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FIELD GC (ppm)	SOIL CLASS	MOISTURE
30B00201		8/8/8/8				SAND, moderate yellowish brown, organic material.	0	SM	dry
30B00202		14/20/21/22		5		SAND, silty, light brown, no organics.	0	SM	dry
30B00203		37/17/10/14		10		SAND, silty, some clay, moderate reddish orange, some organics.	0	SM	dry
30B00204		19/19/19/22		15		SAND, silty, fine grained, light reddish pink, no organics.	0	SM	dry
30B00205		14/14/14/19		20		SAND, silty, fine grained, poorly graded, very pale orange.	0	SM	dry
				25					
30B00206		14/15/19/16		30		Same as above	0	SM	dry

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B002** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 2 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FIELD GC (ppm)	SOIL CLASS	MOISTURE
				40					
30B00207		37/28/28/10				SAND, silty, pale yellowish brown, no organics.	0	SM	dry
				45					
				50					
30B00208		19/14/16/16				SAND, silty, pale yellowish brown, poorly graded.	0	SM	dry
						TD - 52'			
				55					
				60					
				65					
				70					

ABB Environmental Services
2590 Executive Center Circle, East
Tallahassee, FL 32301-5001

Log of Boring 30B003
SOUTHNAVFACENGCOM
NAVAL AIR STATION WHITING FIELD
MILTON, FL

Job Number: RI PHASE IIA

Elevation: NA

Site: 30 – Southfield Hanger	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	6/5/96	1405
Drill Method: HSA	**Finished**	6/5/96	1545

Borehole Diameter: 6 in. | **Total Depth:** 52 ft. BGS | **Logged By:** R. Pratzman | **Entered By:** Tetra Tech NU

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
30B00301		4/4/4/6	20/24		CLAY, sandy, silty, moderate bown, medium stiff, odor.	260	SC	
				5				
30B00302		8/14/21/2	24/24		Same as above.	550	SC	
				10				
30B00303		NA	24/24		CLAY, moderate reddish brown, stiff.	8.1	CL	dry
				15				
30B00304		4/10/15/17	24/24		SAND, fine, moderate reddish brown, well sorted.	2	SP	dry
				20				
30B00305		9/14/14/17	22/24		SAND, some silt, yellowish gray, well sorted, fine.	1	SP	dry
				25				
				30				
30B00306		15/18/20/20	20/24		SAND, some silt, varying colors, rose to yellow to light brown, fine, well sorted	NA	SP	

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B003** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 2 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
				40		SAND, as above.		SP	
30B00307		21/11/8/7	24/24			CLAY, some sand, grayish, stiff.	NA	CL	dry
				45					
				50		Clay as above.			
30B00308		11/11/13/12	20/24			SAND, whitish gray. TD - 52'	NA	SP	
				55					
				60					
				65					
				70					

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B004** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

Site: 30 - Southfield Hanger	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	6/4/96	1500
Drill Method: HSA	**Finished**	6/4/96	1700

Borehole Diameter: 6 in. | **Total Depth:** 52 ft. BGS | **Logged By:** R. Pratzman | **Entered By:** Tetra Tech NUS

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
30B00401		10/8/7/9	18/24			CLAY, light brown, trace sand, very stiff.	2	CL	dry
				5					
30B00402		18/22/28/23	24/24			CLAY, some sand, light brown, very stiff, odor, small stains.	5	CL	dry
				10					
30B00403		13/15/17/18	24/24			SAND, clayey, light brown, medium dense, fine.	3	SC	dry
				15					
30B00404		6/14/17/19	18/24			SAND, fine, white/orange, dense.	0	SP	dry
				20					
30B00405		14/22/20/28	18/24			SAND, fine, well sorted, light brown, dense, laminations	0	SP	dry
				25					
				30					
30B00406		13/22/22/23	20/24			SAND, fine, light brown - nwhite, well sorted, dense.	0	SP	dry

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B004** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 2 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
				40					
30B00407		14/11/11/15	24/24			SAND, clayey, light gray, stiff.	0	SC	dry
				45					
				50					
30B00408		18/17/18/15	24/24			SAND, clayey, light gray, same as above. TD - 52'	0	SC	dry
				55					
				60					
				65					
				70					

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B005** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

Site: 30 - Southfield Hanger	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	6/4/96	1105
Drill Method: HSA	**Finished**	6/4/96	1300

Borehole Diameter: 6 in. | **Total Depth:** 52 ft. BGS | **Logged By:** R. Pratzman | **Entered By:** Tetra Tech NUS

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
30B00501		12/14/16/11				CLAY, light brown, some sand, very stiff, odor.	300	CL	dry
30B00502		8/22/36/41		5		SAND, clayey, some silt, yellowish orange and light brown, very dense well sorted, very fine.	30	SC	dry
				10		CLAY, dark brown, stiff.		CL	
30B00503		12/11/11/12				SAND, laminations, light brown, yellowish orange, fine, well sorted, medium dense.	20	SP	dry
30B00504		10/12/23/26		15		SAND, some silt, very fine, well sorted, moderate pink, med. dense.	5	SP	dry
30B00505		12/16/25/32		20		SAND, silty, very fine, well sorted, grayish orange.	2	SM	dry
				25					
30B00506		21/16/18/15		30		SAND, fine to very fine, white, well sorted, medium dense.	0	SP	dry

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B005** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 2 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
30B00507		4/8/10/18		40		SAND, clayey to sandy CLAY, moderate gray, very stiff.	2	SC/CL	dry
				45					
30B00508		13/19/18/28		50		CLAY, sandy as above w/ odor.	0	CL	dry
						SAND, fine, moderate gray, dense, no odor, well sorted.		SP	
						TD - 52'			
				55					
				60					
				65					
				70					

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B006** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

	Drilling	**Date**	**Time**
Site: 30 - Southfield Hanger			
Contractor: Groundwater Protection, Inc.	**Started**	6/5/96	0956
Drill Method: HSA	**Finished**	6/5/96	1135

Borehole Diameter: 6 in.	**Total Depth:** 52 ft. BGS	**Logged By:** R. Pratzman	**Entered By:** Tetra Tech NUS

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
30B00601		18/24/26/30	20/24			CLAY, silty, moderate reddish brown, low plasticity, very stiff	4	ML	
30B00602		7/10/10/18	24/24	5		Same as above.	2	ML	
30B00603		6/10/11/11	24/24	10		Same as above, trace sand.	2	ML	
30B00604		8/13/12/2	24/24	15		SAND, silty, light brown, well sorted, medium dense.	1	SM	dry
30B00605		11/12/17/17	24/24	20		Same as above.	0	SM	dry
				25					
30B00606		20/16/25/31	20/24	30		Same as above.	0	SM	dry

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 30B006** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 2 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
30B00607		22/24/13/16	24/24	40		SAND, fine, well sorted, yellowish orange.	0	SP	dry
						SAND, clayey, moderate gray, stiff.		SC	
				45					
30B00608		18/22	24/24	50		SAND, fine, well sorted, grayish orange.	0	SP	
						TD - 52'			
				55					
				60					
				65					
				70					

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B61

BORING NUMBER: W30SB08
DATE: 3-22-98
GEOLOGIST: M. Hamsher
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0	NA					concrete						
	[illegible]					Red	Silty, slight sand	ML					
	[illegible]				to	Gold							
	[illegible]												
S-1	4		6-6		dense								
840	6		6-6					ML		0			
S-2	4		6-6					ML		0			
845	8		6-6										
S-3	8		6-6		med dense	ORG	SAND, fine Silty	SM		0			
858	10		6-4			+Gold							
S-4	10		6-6		med dense	ORG	SAND, fine, Silty	SM	last 4"	0.4		0	0
902	12		6-4			+GOLD	MOIST spoon Silty w/ sand	ML		0			
S-5	12		6-6		loose	ORG	SAND Medium grain	SW	well sorted	0.3		0	0
905	14		6-4				slight silt stain						
S-6	14		6-6		loose	WHT	SAND, medium grain	SW	well sorted	0			
915	16		6-4				Clean						
S-7	16		[illegible]-6		loose	WHT	SAND, Med-Coarse	SM	silt stain increase w/ depth	0.2		0	0
922	18		6-4			+ RED	last ½ spoon red + coarser						
S-8	18		6-6		loose	ORG	sand f-med	SM		0.3		0	0
940	20		2-2				slight silt stain						
S-9	20		6-6		loose	ORG		SW		0.3		0	0
947	22		6-4										
S-10	22		6-6		loose	ORG	sand, f-vfg	SW	trace silt stain	0.4		0	0
953	24		6-4			WHT	last 2" white						
S-11	24		6-6		loose	WHT	sand, f-vfg	SW	~~[illegible]~~	0.6			
1007	26		6-2			~~[illegible]~~							

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0.8

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

R4708989

CTO 0028

BORING LOG

PROJECT NAME: Whiting Field NAS
BORING NUMBER: W30SB08
PROJECT NUMBER: 7541
DATE: 3-22-98
DRILLING COMPANY: Gulf Atlantic
GEOLOGIST: M. Hamsher
DRILLING RIG: Mobile B61
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
		NA											
S12	26				loose	wht	Sand, f-vfg		trace phos	0.6		0	0
	28												
S13	28				loose				Collected lab sample	0.9		0	0
	30												
							EOB @ 30'						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0.8

Converted to Well: Yes ____ No ✓ Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 30SB09
DATE: 3/23/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-01	0	NA				black	SAND, fine, ~~red~~ silty		Lab sample W30SB00901				
@ 01						red							
2	2												
Post-Hole	NA		NA										
SS-02	4		6/6		loose	brown	SAND, fine, silty	SM	Sl. moist	0.2			
@ 1552	6		6/2	6.0									
SS-03	6		6/6		loose		SAND, fine grained	SP	Sl. moist	0.1			
@ 1554	8		6/1				little silt						
SS-04	8		6/6		loose		Same as above	SP		0.1			
@ 1556	10		6/3										
SS-05	10		6/6		loose		Same as ab	SP		0.3			
@ 1610	12		6/2										
SS-06	12		6/6				SAND, med-fine ~~grained~~ grained	SP	moist,	1.1			
@ 1615	14		6/5			maroon			Lab Sample W30SB00902				
SS-07	14		6/6				Same as above	SP		0.8			
@ 1624	16		6/4										
SS-08	16		6/6			yellow	Same as above	SP		0.1			
@ 1628	18		6/3			white							
SS-09	18		6/6				Same as above	SP		0.3			
@ 1634	20		6/2										
SS-10	20		6/6				Same as above	SP	moist, phosph.	0.7			
@ 1637	22		6/5										
SS-11	22		6/6				Same as above	SP	phos. moist-	0.3			
@ 1644	24		6/4						sl. moist				
SS-12	24		6/6		loose	white	SAND, fine grained	SP	phos. moist	0.3			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: SS-01 advanced adjacent to post-hole

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X

Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 30SB09
DATE: 3/23/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
1648	26	NA	6/3		loose	Wh	SAND, fine grained	SP	phos. Sl. moist	-	0	0
SS-13	26		6/6							0.6		
1655	28		6/1									
SS-14	28		6/6				SAND, fine-med	SP		0.8		
1658	30		6/2									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B61

BORING NUMBER: W30SB10
DATE: 3-21-98
GEOLOGIST: M. Hamsher
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0	NA					concrete						
						RED	sandy silt fine						
	2												
S-1	4		6-6		dense	RED	slightly sandy silt	ML		0			
148	4		6-6										
	6		6-6										
S-2	6		6-6		dense	Red	sandy silt	SM		0			
150	8		6-6		to	Grd							
S-3	8		6-6		dense					0.4			
155	10		6-6										
S-4	10		6-6					SM		0			
208	12		6-6										
S-5	12		6-4		loose	ORG	sand, f-m grain	SM		0.1			
210	14		4-0		+	Yel	slight silt staining						
S-6	14		6-6		loose	Pale ORG	sand, f-vfgr	SW	slight phosph.	1.0	0	0.5	
212	16		6-2		+	WHT							
S-7	16		6-6		loose	pink	Sand, f-vfg	SW	~~trace phos~~ lab sample	2.0	0	1.4	
218	18		6-4										
S-8	18		6-6							1.0	0	9	
235	20		6-0										
S-9	20		6-6							0	0	1.4	
240	22		6-5										
S-10	22		6-6		loose	Pink		SW		0	0	0	
245	24		4-0				last 4" f-m sand						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: ______

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

R4708989

CTO 0028

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Diedrich D-50
BORING NUMBER: W30 SB10
DATE: 3-21-98
GEOLOGIST: M. Hamsher
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
		NA										
S-11	24		4-6		loose	Pink	Sand f-vfg	SP	trace phosphate	0.2	0	0
350	26		4-4			WHT						
S12	26		6-6			WHT				1.6	0	0
400	28		6-4									
S13	28		10-6							0		
405	30		6-4									
							EOB @ 30'					

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Drilling Area Background (ppm):

Converted to Well: Yes ____ No ____ Well I.D. #: ____

R4708989

CTO 0028

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W30SB011
DATE: 3-21-98
GEOLOGIST: M. Hamsner
DRILLER: D Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
		NA											
8-0	0						concrete						
	1					Red	sand, silt	SM					
	2												
	3					TAN	sand, silty	SM					
S-1	5		6		red	Red	silt	ML		0			
815	6		6-6		dense								
S-2	7		5			Red	SANDY SILT	SM		0			
819	8		6						collected lab				
S3 825	9		6-6						Samples 8-10'				
S3	10		5		med	RED		SM		0			
S4	10		6-6		dense	RED		SM		0			
828	12		6-6			RED	SILT	ML		0			
S-5	12		6							0			
830	14		6-5										
S-6	14		6-6							0			
834	16		6-5										
S-7	16		6-6							0			
838	18		6-5			Red	SANDY SILT	SM					
S8	18		6 6		loose					0			
840	20		6-5										
S9	20		6-6							0			
906	22		6-5					SM					
S10	22		6-6			ORG	SAND, fine grain	&	phosphate	0			
915	24		6-0			to wht							

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #:

BORING LOG

PROJECT NAME: Whitingfield NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG:
BORING NUMBER: W30SB011
DATE: 3-21-98
GEOLOGIST: M. Hamshe
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
		NA										
S11	24		6-6		loose	pale	sand f-vfg	sc	phosphatic	0		
918	26		6-4		to	wht						
S12	26		6 6							0		
922	28		6-0									
S13	28		6-6							0		
928	30		6-3									
							EOB @ 30'					

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ✓ Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W30SB012
DATE: 3-21-98
GEOLOGIST: M. Hamsher
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
	0	NA					Concrete.						
1005													
1018	2				Dense	Red	Silt & sand	ML					
	2					Red	SILT	ML					
	4												
S-1	4		6-6							0			
1045	6		6-6										
S-2	6		6-6			Red				0			
1047	8		6-6		tr	Gold							
S-3	8		6-6			Red	Silt	ML		0			
1050	10		6-5										
S-4	10		6-6							0			
1055	12		4-2										
S-5	12		6-6		med	Red	Silt 1/2 spoon	ML	lab sample	0			
1105	14		4-4		dense		Sand fine silty	SM	12-14'				
S-6	14		6-6			Red				0			
1108	16		6-4										
S-7	16		6-6		loose	Red	Sand, mg slight	SM		0			
1122	18		4-4				silt						
S-8	18		6-6			Red	Sand fine		slight phosphatic	0			
1125	20		4-4		tr	Wht	Slight silt stain						
S-9	20		6-6				Sand, fine to med	SM		0			
1133	22		4-4				Slight silt stain						
S10	22		6-6					SM		0			
1137	24		4-4										

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W30SB12
DATE: 3-21-98
GEOLOGIST: M. Hamsher
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (p: Sample	Sampler BZ	Borehole**
		NA										
S11	24		6-6		loose	ORG	Sand f-med	SW		0		
1148	26		2.0			WHT	silt stain					
S12	26		6-6				Sand - fine	SC	slight phos	0		
1152	28		2.0									
S13	28									0		
1158	30											
							EOB @ 30'					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ______ No ✓ Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 30SB13
DATE: 3/23/98
GEOLOGIST: J Hoter
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-01 ST-01	0 1	NA	6/6			black	SAND, silty, clay, fine	SC	Lab sample W30SB01301	0	0	0	0
@1127	1 2		6/2			red			Geotech Sample W30SB01302				
NA	2		NA										
	4												
SS-02	4		6/6		stiff	red	SILT, sandy, ~~vfg~~ sand	ML	sl. moist	0.3			
@1133	6		6/6										
SS-03	6		6/6				Same as above			2.3	0	0	0
@1138	8		6/5										
SS-04	8		6/6	8.5	med dense	red	SAND, silty, med grained	SM	Sl. moist	0.4			
@1154	10		3/0	9.1	loose	yel red	SAND, fine grained, some silt						
SS-05	10		6/6						Lab Sample W30SB01303	2.6			
@1157	12		2/0										
ST-02	12		6/6						Geotech Sample W30SB01304		0	0	0
@1207	14		6/6										
SS-06	14		6/6		loose	pink white	SAND, silty, fine	SM	phosph.	0.2			
@1215	16		6/5	15.0	med dense	maroon	SAND, clayey, med grain	SC					
SS-07	16		4/4	16.0	loose	maroon	SAND, fine-med grained	SW		0.2			
@1221	18		4/0										
SS-08	18		6/6							0.1	0	0	0
@1235	20		6/0	18.8	loose	white orange	SAND, vfg	SP	phosphatic				
SS-09	20		6/6		loose	White							
@1240	22		6/4							1.1			
ST-03	22		6/6						Geotech Sample W30SB01305				
@1250	24		6/6										
SS-10	24									0	0	0	

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Background reading due to Helicopter exhaust

Drilling Area Background (ppm): 1.0

Converted to Well: Yes ______ No X

Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 30SB18
DATE: 3/23/98
GEOLOGIST: J Hafer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	U S C S *	Remarks	PID/FID Reading: Sample	PID/FID Reading: Sampler BZ	PID/FID Reading: Borehole**
@	26	NA	0/0		loose	pale yellow	SAND, fine	SP	moist, phosphatic	0.9	0	0
SS-11	26		6/6			w/ orange/tan						
@ 1305	28		6/0									
SS-12	28		6/6		loose	Pink-yellow	SAND, med grained	SP	moist	1.6		
@ 1310	30		6/0									
							TD - 30 ft					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area
Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

R4708989

CTO 0028

ABB Environmental Services
2590 Executive Center Circle, East
Tallahassee, FL 32301-5001

Log of Boring WRSB01
SOUTHNAVFACENGCOM
NAVAL AIR STATION WHITING FIELD
MILTON, FL

Sheet 1 of 1
Job Number: RI PHASE IIA
Elevation: NA

Site: 32 - Northfield Hanger Wash Rack	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	7/30/93	1340
Drill Method: HSA	**Finished**	7/30/93	1430

Borehole Diameter: 6 in. **Total Depth:** 22 ft. BGS **Logged By:** G. Walker **Entered By:** Tetra Tech NUS

LAB. SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Materials Description	OVA (ppm)	SOIL CLASS	MOISTURE
					Concrete and gravel subgrade			
(5-7')		7/7/9/8	2.0	5	SAND and clay, vf - fine, dark grayish orange and pale olive.	>1000	SP	
(10-12')		2/2/7/9	1.8	10	SAA, medium stiff.	500	SP	moist
(15-17')		3/3/8/8	1.9	15	Sand as above - 4", then CLAY and sand, vf - fine, moderate reddish orange, tight.	650	CL	dry
(20-22')		5/5/6/7	1.8	20	SAND, vf - fine, moderate reddish orange, poorly graded	>1000	SP	moist
					TD - 22'			
				25				
				30				

ABB Environmental Services
2590 Executive Center Circle, East
Tallahassee, FL 32301-5001

Log of Boring WRSB02

SOUTHNAVFACENGCOM
NAVAL AIR STATION WHITING FIELD
MILTON, FL

Sheet 1 of 1

Job Number: RI PHASE IIA

Elevation: NA

Site: 32 - Northfield Hanger Wash Rack	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	7/30/93	1440
Drill Method: HSA	**Finished**	7/30/93	1515

Borehole Diameter: 6 in. | **Total Depth:** 22 ft. BGS | **Logged By:** G. Walker | **Entered By:** Tetra Tech NUS

LAB. SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	OVA (ppm)	SOIL CLASS	MOISTURE
						Concrete and gravel subgrade			
(5-7')		7/7/6/8	1.9	5		SAND, vf - fine, pale yellowish brown, poorly graded, increased organics toward bottom.	>1000	SP	dry
(10-12')		6/5/4/7	2.0	10		SAA	300	SP	moist
						SAND and clay, vf - fine, mottled dark yellowish orange and pale olive		SC	
(15-17')		3/3/7/10	1.8	15		Sand as above	60	SC	
						CLAY, med. light gray, trace vf to fine sand, poorly sorted		CL	
(20-22')		7/7/7/9	2.0	20		SAND, vf - fine, very pale orange mottled moderate pink, poorly graded.	100	SP	dry
						TD - 22'			
				25					
				30					

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring WRSB03** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 1** **Job Number:** RI PHASE IIA **Elevation:** NA

Site: 32 – Northfield Hanger Wash Rack	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	7/30/93	1530
Drill Method: HSA	**Finished**	7/30/93	1610

Borehole Diameter: 6 in. | **Total Depth:** 22 ft. BGS | **Logged By:** G. Walker | **Entered By:** Tetra Tech NUS

LAB. SAMPLE ID	BLOWS/6-in.	RECOVERY	Depth (feet)	Materials Description	OVA (ppm)	SOIL CLASS	MOISTURE
			0	Concrete and gravel subgrade			
(5-7')	5/6/7/7	1.8	5	SAND, vf – fine, pale yellowish brown, well sorted, increased organics and trace clay lower 6".	460	SP	moist
(10-12')	10/9/9/11	1.8	10	SAA	300	SP	moist
(15-17')	4/5/7/9	1.9	15	CLAY, very pale orange mottled light brown, trace vf – fine sand well sorted.	200	CL	moist
			20	SAA		CL	
(20-22')	0/11/13/14	1.9		SAND, vf – fine, trace clay TD – 22'	20	SP	moist
			25				
			30				

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W32SB09
DATE: 3/9/98
GEOLOGIST: J. Hoter
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
post-hole/ hand auger	0	NA	NA				Asphalt						
	4												
SS-01	4	10/14	6/6			red-	SILT, sandy, clayey		FILL, wet	65	0	0.5	0
0825	6	17/20	6/6			red	w/ fine sand						
SS-02	6	6/10	6/6	6.0	med dense		SAND, silty		wet	32			
0834	8	11/14	3/0										
SS-03	8	9/13	4/6				SAND, silty	SM		2.0	0	0.4	0
0838	10	16/16	6/6		med stiff-	yel-red	SILT, sandy, vfg	ML	sl. moist				
SS-04	10	15/23	6/6		stiff					2.8	0		
0910	12	30/34	4/0										
SS-05	12	NA	6/6	12.0	med dense	red	SAND, silty, clayey fine-vfg	SC	sl. moist - moist	63			
0920	14		4/4	13.0	stiff	reddish gray	SILT, sandy, vfg	ML	moist, plastic				
SS-06	14		6/6		vy stiff	pink	SILT, w/ vfg sand		sl. moist	0.7			
0933	16		2/0						low plast.				
SS-07	16		6/6							2.	0	0	0
0943	18		6/3	17.0	dense		SAND, silty, vfg	SM	phos, sl. moist				
SS-08	18		6/6		med dense					19.0			
1000	20		6/2										
SS-09	20		6/6	20.3	soft-med stiff	pink	SILT, sandy, vfg	ML	phos., sl. moist	3.0			
1007	22		6/0	21.4	loose	white	SAND, silty, vfg	SM	lab sample W32SB00901				
SS-10	22		6/6		med dense	lt purple	SAND, silty, fine gr	SM		34.9			
1015	24		6/1				w/ trace med sand						
SS-11	24		6/6		loose	purple	SAND, fine-med, silty	SM	phos, sl. moist	0			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm):

Converted to Well: Yes ______ No X Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W32SB09
DATE: 3/9/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
3 1023	26	WH / 4	4 / 4	26.0	loose	Purple	SAND, fine-med w/silt	SM		0	0	0	0
SS-12	26		6 / 6		loose	lt	SAND, fine-vfg, trace	SW	Phos. sl. moist	12.4			
4 1035	28		4 / 1			Purple	med sand						
SS-13	28		6 / 6		loose	white pink	SAND, as above	SW		27.1			
5 1043	30		4 / 3			Yellow							
SS-14	30		6 / 6		loose		SAND fine-med w/	SW		40.4			
6 1055	32		6 / 4				trace gravel						
							TD-32'						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 32SB10
DATE: 3/10/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ
Concrete cutter	0	NA	NA				Concrete						
post-hole						reddish brown	SAND, fine		FILL				
hand auger													
	4												
SS-01	4		6/6			reddish brown	SAND, clayey, fine	SC		0	0	0	0
@ 1353	6		6/3										
SS-02	6		6/6	7.0						0			
@ 1358	8		5/0		hard	brownish red	CLAY, silty, vfg sand	CL	Sl. moist-dry				
SS-03	8		6/6							0			
@ 1410	10		0/0	9.5									
SS-04	10		6/6		v/ dense	brown red	SAND med grained w/silt	SW	angular, dry	0			
@ 1419	12		5/0										
SS-05	12		6/6	13.0						0			
@ 1427	14		6/0		v/ stiff	Red	SILT, sandy, fine-vfg	ML	sl. moist				
SS-06	14		6/0	14.5	stiff	grayish pink	CLAY, silty, sandy, vfg	CL	Plastic, sl. moist	1.7	0	0	0
@ 1434	16		3/0	15.5			SILT, sandy, w/vfg	ML					
SS-07	16		6/6				sand.			20.6			
@ 1440	18		6/1			Pink	Same as above		moist				
SS-08	18		6/6	18.0	med dense	Pink	SAND, silty, vfg.	SM	lab sample	84.0			
@ 1448	20		6/3				~~Same~~		W32SB01001				
SS-09	20		6/6	20.0	med stiff		SILT, sandy w/ vfg sand	ML		22.1	0	0	0
@ 1454	22		4/0										
SS-10	22		6/6							21.6			
@ 1500	24		6/2	23.0	loose	white	SAND, fine-vfg	SW	Phos. qtz w/ trace mica				
SS-11	24		6/6	24.0	dense	Pink	SAND, fine-med, silty	SM		60.4			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): ______

Converted to Well: Yes ______ No X

Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 32SB10
DATE: 3/10/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
⊙ 1520	26	NA	5/0								0	0	0
SS-12	26		4/6		med dense	lt pink	SAND, vf-fine w/ trace coarse sand	SW	sl. moist, phos, qtz, trace mica	1.2			
⊙ 1540	28		6/1										
SS-13	28		6/6		loose	white pink yellow	SAND, fine-med	SW	sl. moist	0			
⊙ 1550	30		1/0										
SS-14	30		4/6				Same as above		lab sample W32SB01002	0.2			
⊙ 1554	32		6/4										
SS-15	35	NA	6/6			Pink	SAND, silty, vfg	SM	sl. moist, phos	0	0	0	0
⊙ 1600	37		6/5	36.2		White	SAND, fine-vfg	SW					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W32SB11
DATE: 3/9/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
Post-hole/ hand auger	0	NA	NA										
	4												
SS-01	4		6/6			dk brown	SAND, fine-vfg, silty	SM		0.9			
1352	6		0/0			black							
SS-02	6		6/6	7.0						2.1			
1355	8		6/4	8.0		brown	SAND, silty, some clay	SM/SC					
SS-03	8		6/6		med stiff	brown	SILT, sandy, fine	ML	wood fragments	6.4			
1358	10		6/5										
SS-04	10		6/6		stiff		SILT as above	ML		0			
1408	12		1/0										
SS-05	12		6/6			brownish grayish brown	SILT, clayey w/ vfg sand			0			
1410	14		0/0										
SS-06	14		6/1							3.5			
1440	16		0/0										
SS-07	16		4/6	17.0	hard	Pink			lab sample W32SB01101	51.6			
1445	18		2/0			gray	CLAY, sand,	CL	low plast.				
SS-08	18		6/6							79.2			
1452	20		3/0	20									
SS-09	20		4/6		dense	lt purple gray	SAND, clayey, fine w/ trace med. sand	SC	phos.	41.0			
1500	22		1/0										
SS-10	22		6/6	22.5	med dense	purple pink yell.	SAND, fine-med.	SW	phos. sl. moist	3.5			
1507	24		6/3										
SS-11	24		No Recovery							—			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X

Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB11
DATE: 3/9/98
GEOLOGIST: J. Hoster
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Sample	Sampler BZ	Borehole**	Driller BZ**
1510	26	NA	No recovery							—			
SS-12	26		6/6		loose	yel, red, pink	SAND, fine-med	SW	phos. sl. moist subang - sub rounded	0.0			
1516	28		6/2										
SS-13	28		6/6						phos., sl. moist	250			
1520	30		5/0				SAND, as above	SW	lab sample W32SB01102				
SS-14	30		6/6				SAND as above	SW		8.1			
1528	32		5/0				SA						
SS-15	35	NA	6/6		med dense	white	SAND, fine-med w/ some coarse sand + fine gravel	SW	phos. dry	0.0			
1543	37		0/0										
SS-16	40	NA	6/6		med dense	white	SAND, fine-vfg	SP	phos. dry	0.0			
1550	42		1/0										
							TD-42 ft						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB12
DATE: 3/6/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
Post hole/ hand auger	0	NA	NA				SAND, fine, silty		FILL				
	4												
SS-01	4	9/17	6/6			gray-brown-							
@1553	6	20/14	6/4			black				37.5			
SS-02	6	9/14	6/6				SAND, clayey, silty	SC		43			
@1558	8	12/16	6/4			dk brown red				10.3			
SS-03	8	5/8	6/6				SAND, fine, silty	SM	wet	10.4			
@1610	10	6/13	6/0							13.9			
SS-04	10	4/7	6/6				SAND, fine-	SM	~~wet~~ moist	[illegible]			
@1615	12	11/8	6/6							639.			
SS-05	12	16/8	6/4						lab sample W32SB01201	6.0			
@1618	14	6/4	6/3	13.2		black	SILT, sandy w/clay	ML	moist	2			
SS-06	14	1/2	6/6			brown-				8			
@1622	16	4/6	6/4			olive gray				3.0			
SS-07	16	37/25	6/6		hard				wet	8			
@1627	18	21/21	6/6	17.4		red-brown	CLAY, silty	CL	sl. moist	3			
SS-08	18	4/9	6/6			gray			mod plasticity	4			
@1640	20	13/20	6/0		Hard					.6			
SS-09	20	6/16	6/6	20.6		yel-red	SAND fine-vfg	SW	sl. moist	4			
@1652	22	20/19	6/3				some-trace silt		trace phosph.	10			
SS-10	22	6/16	6/6	22.3 23.0		orange yellow	SILT, sandy SAND, silty, vfg	ML SM		3.2			
@1704	24	24/27	2/0			orange	SILT, sandy	ML			0	3.0	0
SS-11	24	15/15	6/6			yell-orange	SAND, fine-vfg, silty lenses			20.3			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ____________________

Drilling Area Background (ppm): ______

Converted to Well: Yes ______ No X Well I.D. #: ______

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB12
DATE: 3/6/98 - 3/7/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0711	~~24~~ 26	12/13	9/0		med dense								
SS-12	26	4/6	6/6			orange	SAND, fine-vfg	SW	phosph.	21.9	0		0
0723	28	7/8	9/0										
SS-13	28	9/10	4/6			white	SAND, fine-vfg	SW		24.0			
0737	30	12/14	0/6										
SS-14	30	6/10	6/6			white	SAND, fine-vfg	SW		132			
0748	32	9/11	6/1										
3/6/98													
SS-15	35	10/9	6/6		med dense	lt grayish pink	SAND, fine grained	SP	phos. sl. moist	54			
0730	37	10/11	6/2						lab sample W32SB01202				
SS-16	40	6/12	6/4		med dense	white	SAND fine-vfg w/	SW	phos. sl. moist	10	0		0
0748	42	16/16	6/3		denser		some partialy cemented qtz						
3/8/98													
SS-17	45	13/20	6/6		dense	white	SAND, fine-vfg	SW	phos. wet	563			
0719	47	23/26	3/0						(from rain infilt.)				

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Rain - Thunderstorms,

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X

Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W33SB12
DATE: 3/18/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-18	50	13 / 17	6 / 6		dense	white	SAND, fine,	SP	Phosph, qtz	141	0	29	0
@ 0732	52	24 / 24	6 / 2						Sl. moist				
SS-19	55	8 / 14	6 / 6		dense	white	SAND as above	SP	sl. moist	116			
@ 0743	57	17 / 19	6 / 0										
SS-20	60	10 / 10	6 / 6			white	SAND, silty, vfg-	SM	phos qtz	96			
@ 0754	62	14 / 22	6 / 0		dense		fine		Sl. moist				
SS-21	65	10 / 14	6 / 6		med	white	SAND, silty, fine-	SM	Sl. moist	33			
@ 0807	67	14 / 15	6 / 1		dense		vfg,						
SS-22	70	10 / 14	6 / 6		med dense	white-	SAND, fine-vfg	SW	phos,	31.2			
@ 0822	72	17 / 23	6 / 5		dense	Pink							

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Scattered showers, 70°

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X

Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB12
DATE: 3/8/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ
SS-23	75	8 / 14	4/6			white	SAND, fine-vfg	SW	phos	17	0	0	
@0842	77	21 / 27	6/5		dense				Sl. moist				
SS-24	80	8 / 13	6/6			white	SAND as above	SW	lab sample W32SB01203	305			
@0855	82	18 / 22	6/5		dense	lt pink			moist				
SS-25	85	21 / 24	4/6		vy	white pink	SAND, fine	SW	moist	262			
@0913	87	50 / 50	6/5		dense	yell	banded						
SS-26	90	11 / 20	6/6		dense	white	SAND, fine w/ some	SW	moist	30.1	0	0	0
@0937	92	16 / 19	6/4			lt pink	med sand						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: scattered mod-heavy rain wind S 15-20mph

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X
Well I.D. #: ____

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B61
BORING NUMBER: W32SB13
DATE: 3-28-98
GEOLOGIST: M. Hamsher
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0	NA					concrete						
	0					RED	SILTY SAND	SM					
	2								some pine wood				
	2				med	GOLD	SILTY SAND	SM	frags				
S-1	4		6-6		dense	GOLD	SILT, slight SAND	ML		0			
150			6-6										
S-2	6		6-6			Gold	slightly sandy	ML		0			
154	8		6-6		+	Red	SILT						
S-3	8		6-6						~~take sample~~	0			
158	10		6-4										
S-4	10		6-6			Red	sandy silt	SM		0			
108	12		6-4										
S-5	12		6-6							0			
112	14		6-0										
S-6	14		6-6		med soft	Mred	Clay, sandy	CL		0			
122	16		6-4										
S-7	16		6-6			ORG	Clayey sand + silt	SC		16.4			
125	18		6-4			Pale							
S-8	18		6-6		[illegible]	ORG	Sand vfg	SM	151	~~[illegible]~~		0	0
138	20		0-0		Loose		slight silt stain						
S-9	20		6-6		Med	Pink	Sand, fg	SM		14		0	0
140	22		6-4		loose		slight clay						
S10	22		6-6			WHT	sand f-g	SM	top 1/2 white	48		0	0
148	24		6-4			PINK	increase silt w/ depth		bottom 1/2 pink				
S-11	24		6-6			Pink	sand fg	SC	trace phos	67			
158	26		6-4			WHK							

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

R4708989 CTO 0028

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B61

BORING NUMBER: W32SB13
DATE: 3-22-98
GEOLOGIST: M. Hamsher
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
		NA										
S12	26		6-6		loose	Pink	Sand, fine	SW	slight silt stain	380		4300
205	28		6-4			+ Wht	trace phos.		LAB SAMPLE			
S13	28		6-6							313		4300
210	30		6-4									
S14	35		6-6							1163		3000
230	37		6-4									
S15	40		6-6			Wht	Sand fine, some med	SW	trace phos	207		3062
235	42		6-4									
S16	45		6-6							304		2202
245	47		6-4									
S17	50		6-6							3.3		31/20
255	52		6-4									
S18	55		6-6						lab sample	108		1724
258	57		6-4									
S19	60		6-6							0		21/04
303	62		6-4									
S20	65		6-6		loose	Wht	top 1/2 same	SC	WET!	0		20/5
312	67		6-4			to Pink	last 1/2 f-m grain					
							last 1" sandy clay					
S21	70		6-6			Wht	sand, f-vfg	SW	~~trace phos~~ DRY	261		15/21
405	72		6-6									
S22	75								labsample			
420	77							SW	Dry	290		27/02

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ✓ Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: Whiting Field NAS
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B61
BORING NUMBER: W32SB13
DATE: 3-22-98
GEOLOGIST: M. Hamsher
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	PID/FID Reading (ppm): Sampler BZ	PID/FID Reading (ppm): Borehole**	PID/FID Reading (ppm): [illegible]
		NA											
S23	80		6-6		loose	WHT	Sand f-vfg	SW	trace plus	18		320	0
430	82		6-4										
S24	85		6-6							125		295.5	[illegible]
445	87		6-4										
S25	90		6-6		loose	wht							
505	92		6-4		to	pale yel				0		0	[illegible]
S26	95		6-6		loose	pale	Sand fine	SW					
520	97		6-4			yel			wet @ 96'	0		0	[illegible]
							EOB @ 97'						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB14
DATE: 040498
GEOLOGIST: Tom Nicotera
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Sample	PID/FID Sampler BZ	PID/FID Borehole**
Hand Auger	0	NA	2'			Rust/Tan	Sand med Grain		dry	0		0
Hand Auger	4	NA	2'			Rust/Tan	Sand Fine/med Grain			0		0
SS01	4	NA/NA	6"/6"									
1022	6	NA/NA	6"/6"			Rust	Sand fine/med Grain			0		
SS02	6	34/26	6"/6"									
1025	8	24/25	6"/6"			Rust	Sand med Grain			0		
SS03	8	49/55	2"/6"									
1035	10	70/50	6"/6"			Rust	sand med Grain			0		
SS04	10	34/25	6"/6"									
1045	12	32/27	6"/6"			Rust/Tan	sand med Grain + pink clay			0		
SS05	12	9/11	4"/6"									
1050	14	13/16	6"/6"			pink	clay – stiff		stiff clay	0	0	0
SS06	14	9/18	6"/6"									
1055	16	24/25	6"/6"			pink + Rust	clay/some med Grain sand-Rust		very stiff	0		
SS07	16	7/12	6"/6"									
1105	18	14/16	6"/6"			pink/Rusty	sand mainly pink clay		stiff clay	0		
SS08	18	15/19	3"/6"									
1112	20	18/20	6"/6"		Main	pink	clay + Red clay 4/Lt Tan fine Grain sand		stiff clay	0	0	0
SS09	20	8/11	6"/6"				1st 2" Lt Tan fine Grain sand					
1118	22	12/13	6"/6"		Mainly	pink	clay + Ending in Gray clay		very stiff clay	0		
SS10	22	15/17	6"/6"		Mainly	pink	clay + Grey + Tan					
1123	24	17/22	6"/4"				fine Grain sand		stiff clay	0		
SS11	24	13/18	4"/6"				Lt. Grey + Lt. Tan fine Grain					
1128	26	25/27	6"/6"				sand + some Red clay		mostly sand	0		0
SS12	26	13/15	6"/6"			Lt Grey	fine Grain sand			0		

* When rock coring, enter rock brokeness

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: N/A

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB14
DATE: 040498
GEOLOGIST: Tom Nicotera
DRILLER: A. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
5512 11:35	26-28'	18/19	6"/6"			LT	GREY FINE GRAIN SAND		DRY Soil	0 ppm			
5513	28	13/18	6"/6"										
* 11:40	30	24/27	6"/6"			LT	GREY FINE GRAIN SAND		1st Sample collected Here W32SB01401	65 ppm			
5514	35	7/10	3"/6"			LT.	GREY/TAN FINE GRAIN						
1232	37	12/16	6"/1"				SAND			0 ppm			
5515	40	13/12	4"/6"			LT.	GREY/LT TAN FINE GRAIN						
1240	42	14/16	6"/6"				SAND			231 ppm			
5516	45	12/14	4"/6"			LT	GREY FINE GRAIN SAND						
1248	47	19/23	6"/4"							316 ppm			
5518	50	12/14	6"/6"			LT.	GREY FINE GRAIN						
1255	52	15/18	6"/4"				SAND			234 ppm			
[illegible]	55	16/18	6"/6"			LT	GREY FINE GRAIN						
* 13:00	57	24/30	6"/6"				SAND		2nd Sample collected Here W32SB01402	450 ppm		0 ppm	
5521	60	11/12	3"/6"			LT.	GREY FINE SAND						
1310	62	20/26	6"/6"							1600 ppm			
5522	65	20/27	3"/6"			LT	GREY FINE GRAIN						
[illegible]	67	32/38	6"/6"				SAND			4030 ppm		135 ppm	
5523	70	18/18	2"/6"			LT	GREY FINE GRAIN						
1335	72	18/19	6"/2"				SAND			2500 ppm			
5524	75	12/15	6"/6"			LT	GREY FINE GRAIN						
** ~~14:05~~	77	30/30	6"/6"				SAND		3rd Sample + dup collected Here W32SB01403 + W32SB01405	4300 ppm		10	
5525	80	17/28	6"/6"			LT	GREY FINE GRAIN						
1425	82	28/38	6"/6"				SAND			4000 ppm			
5526	85	21/31	6"/6"			LT	GREY FINE GRAIN						
1435	87	30/50	6"/6"				SAND			3026 ppm			

* When rock coring, enter rock brokeness

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: * means Soil sample collected HERE
** means Soil sample collected Here Along with dup. Sample...

Drilling Area Background (ppm): 2

Converted to Well: Yes ______ No ✓ Well I.D. #: N/A

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB14
DATE: 040498
GEOLOGIST: Tom Micotera
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
5527	90	30/37	6"/6"			LT	CREAM/TAN FINE GRAIN		MOIST				
* 1445	92	38/44	6"/6"				SAND	4th	sample collected Here W32SB01404	1450 ppm			
5528	95	15/12	6"/6"			LT	CREAM/TAN FINE		WET				
1500	97	13/15	4"/6"				W.T. @ 97' GRAIN SAND		WATERTABLE	152 ppm			
~~5529~~	TN												
~~5530~~	TN												

* When rock coring, enter rock brokeness

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: WATERTABLE @ 97' BLS
* means Soil Sample collected Here

Drilling Area Background (ppm): 0.1

Converted to Well: Yes ____ No ✓ Well I.D. #: N/A

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 32SB15
DATE: 3/10/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Sample	Sampler BZ	Borehole**	Driller BZ**
post hole/ hand auger	0	NA	NA				Concrete						
				1.0		brown	SAND, fine-vfg		FILL				
	4									~~0~~	0	0	0
SS-01	4		6/6		dense	brown red	SAND, clayey - sandy	SC	crumbly	0			
0848	6		12/6	5.0			CLAY, fine, vfg + med grained sand	CL					
SS-02	6		8/5	6.0	vy stiff	red-brown	SILT, w/ fine-med sand	ML	friable, low plasticity	0			
0835	8		0/0										
SS-03	8		6/6		stiff		Same as above		sl. more plastic moist - sl. moist	0			
0903	10		3/0										
SS-04	10		6/6		med stiff	red-gray	SILT, sandy, fine-vfg Trace med sand	ML		0	0		
0920	12		4/0										
ST-01	12		6/6						Shelby tube easy push				
0929	14		6/6	13.0	med dense	red-pink	SAND, silty, fine-vfg	SM	Geotech Sample W32SB01501	~~8~~			
SS-05	14		6/6							5.1			
0945	16		8/6	15.0	med stiff	red-pink	SILT, sandy	ML	sl. moist				
SS-06	16		6/6	16.0	med dense	gray	SAND, silty, fine-vfg	SM	lab sample W32SB01502	63.0			
0952	18		2/0										
SS-07	18		6/6				Same as above		moist	13.9	0	0	0
1000	20		2/0										
SS-08	20		6/6	20.0	loose-med dense	white	SAND, fine-vfg, little silt	SW	sl. moist	20.1			
1005	22		1/0										
SS-09	22		6/6	22.0	vy stiff	lt pinkish	SILT, sandy, fine-med sand, some clay	ML	sl. moist	20.1			
1100	24		5/0			pink							
SS-10	24		6/6	24.0	dense	red-dk red	SAND, silty, vf-med	SM	sl. moist, phos.	9.1			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 32SB15
DATE: 3/10/98
GEOLOGIST: J. Hoter
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
9/ 1106	24	WH / 5	6/5	25.4	med dense	yellow	SAND, vf-med.	SW	little-no silt	9.1	0	0	0
SS-02	26		6/6						shelby Tube				
9 1121	28		6/6			whitish yellow			Geotech sample W32SB01503				
SS-17	28		6/6			red-	SAND, fine-med	SW	phos., subang-subrounded,	0			
9 1135	30		6/5			yellow			sl. moist				
							TD-30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB16
DATE: 3/5/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
Post hole	0	NA	NA				Asphalt 0-2"						
hand						brown	SAND, fine grained	SM	FILL				
auger							silty						
	4												
SS-01	4	12/16	6/6		med dense	red	SAND, silty, clayey	SC	FILL, moist	0	0	0	0
1138	6	20/18	6/6										
SS-02	6	11/11	6/6			red	Same as above	SC		0			
1142	8	13/20	3/0										
SS-03	8	7/8	6/6			brownish red	SAND as above	SC		0			
1146	10	8/7	4/0										
SS-04	10	4/7	6/6			yel-red	SAND, silty, fine w/	SM	moist	0	0		
1148	12	9/12	6/0	12.0			some med. sand						
SS-05	12	10/11	4/6			brown	SAND, fine-vfg		sl. moist	0			
1208	14	14/18	6/4	13.5		red	SAND, clayey, silty, w/	SC					
SS-06	14	5/5	6/6				small gravel, fine grained Grading to			0			
1215	16	8/8	6/5	15.0	st. ff	yel-red	SILT, sandy (vfg)	ML	moist				
SS-07	16	7/10	4/6							0	0	0	0
1225	18	11/12	6/1	17.1		gray-red	SILT, clayey w/ vfg	ML					
SS-08	18	8/8	6/2			yel. Pink	~~Sand, silty~~ SILT, sandy (fine-vfg)	ML	~~tab sample~~ ~~W32SB016~~ ~~W32DP0016~~	82.3			
1232	20	7/9	0/0	19.5									
SS-09	20	5/6	6/6			lgt pink	SAND, silty, fine	SM	phos., sl. moist	25.3			
1236	22	4/7	4/0										
SS-10	22	3/7	6/6				SAND, fine, silty	SM	phos. sl. moist	37.8	0	0	0
1241	24	9/9	4/0			red-Pink	CLAY, silty, sandy w/ trace gravel	CL					
SS-11	24	7/7	4/6			lgt Purple	CLAY, sandy w/ fin-med			54.4			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X

Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB016
DATE: 3/5/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
1244	26	7 / 8	6 / 2	25.5	stiff		CLAY, sand (fine-med)	CL	Sl. moist				
SS-12	24	NA	6 / 6			lgt pink	SAND, fine grained	SP	Phosphatic qtz	20.4	0	0	0
1250	28		6 / 1				trace silt						
SS-13	28	5 / 5	6 / 6		med dense	lgt pink	SAND, fine grained	SP	Sl. moist	8			
1300	30	12 / 13	6 / 3	30.0		Yellow			lab sample W32SB01601	16 / 3			
SS-14	30	6 / 7	6 / 6				SAND, fine-med grain	SW	W32DP00.00	1	0	0	0
1305	32	8 / 9	6 / 6				w/ some vfg			17			
SS-15	35	10 / 13	6 / 6		med dense	yellow pink	SAND, fine-med	SW	faint odor	24 / 8	0	0	0
1430	37	18 / 22	6 / 6			white red			phosphatic qtz, trace mica	28			

SS-16	40	5 / 8	6 / 6		med dense	white	SAND, fine grained	SP	Phos, Sl. moist	4			
1440	42	10 / 13	6 / 6							212			
SS-17	45	8 / 11	6 / 6		med dense	white	Same as above	SP	lab sample	9	0	0	0
1448	47	17 / 24	6 / 6		dense				W32SB01602	10 / 9			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB16
DATE: 3/5/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-18	50	8/13	4/6		med dense	White	SAND, fine, w/	SP	abundant phos,		0	0	0
@ 1500	52	17/20	6/6		dense		partialy cemented sand nodules			2512			

SS-19	55-	8/13			med dense	White	SAND, ~~as above~~	SP	phosphatic lenses				
1515	57	19/21			dense		fine - vfg,	SW	sl. moist	226			
SS-20	60	13/17	4/6	60.4	dense	white	SAND as above	SW	phos.	163			
				60.7		Pink	SILT, sand	ML					
@ 1528	62	18/22	4/0		↓	white	SAND, silty vfg	SM	sl. moist				
									>3500 ppm on cuttings		0	170	0
SS-21	65	10/18	4/6		dense	White	SAND, fine-vfg	SW	phos., sl. moist	324	0	100	0
@ 1608	67	21/27	6/2						lab sample W32SB01603				
SS-22	70	15/21	4/6		dense	White	SAND as above	SW	phos. sl. moist	192			
@ 1620	72	24/31	6/1										

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X   Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB16
DATE: 3/5/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
SS-23	75	17/26	6/6	75.5	vy dense	white	SAND, fine-vfg	SW	Sl. moist-moist	1.0		
@1635	77	31/34	6/4	76.0	↓		SAND, fine-med SAND, vfg		Pnos.	1.7		
SS-24	80	12/15	6/6		dense	White yellow	SAND fine grained,	SW	Sl. moist	6		
@1650	82	19/21	6/5		↓	orange red	banded coloring			10		
							yellow					
SS-25	85	6/8	6/6	85.6	med dense	pink	SAND, med grained SILT, sandy, some	SW ML	SATURATED Sl. moist -	22	0	100
@1708	87	17/20	6/4		vy stiff	gray	clay		moist Lab sample			
							TD-87'		W32SB01604			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W32 SB17
DATE: 3/3/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
post hole	0	NA	NA	0.25 ~~1.0~~	NA	red	Asphalt - 0-0.25 FILL, sand, silty						
hand auger						brown	SAND, fine grained						
	4												
SS-01	4	7/8	4/6		med dense	brown	SAND, silty, fine	SM	dry	0	0	0	0
1418	6	10/12	4/0			red + brown							
SS-02	6	10/21	6/6	6-9					Sl. moist	0			
1443	8	14/17	5/0		hard	gray mott	SILT, sandy, some clay	ML	low plasticity				
SS-03	8	8/14	6/6							0			
1448	10	15/18	4/0				SILT, less sand, vfg	ML	low plast.				
SS-04	10	17/14	6/6			pink	some clay		dry - Sl. moist	0	0		0
~~1508~~ 1503	12	15/22	0/0										
SS-05	12	8/10	6/6	12.5		Pink w/ gray mottling	CLAY, some silt	CL	Sl. moist, low Plast.	0			
1503	14	15/15	6/3										
SS-06	14	11/12	4/4				CLAY, silty - clayey SILT	CL/ML	vy low plast. Sl. moist	0			
1508	16	16/20	0/0				w/ some vfg sand						
SS-07	16	8/11	6/6				same as above			0	0	0	0
1518	18	14/16	6/2	18.0									
SS-08	18	5/10	6/6		vy stiff	gray	CLAY, sandy, fine sand	CL	mod. plast. moist	17			
1530	20	13/15	4/4			pink							
SS-09	20	10/10	6/6	20.7	dense	lgt gray	SAND, clayey, fine grained	SC	phosphatic, qtz + mica	*150			
1539	22	11/13	6/4	21.8		pink	SAND, silty, fine-vfg	SM	moist, Sl. solvent odor				
SS-10	22	5/8	6/6		med. dense	yellow	SAND, fine grain w/	SW	subrounded	28			
1550	24	8/8	4/1			pink gray	trace coarse-med sand banded coloring 23-24'						
SS-11	24	4/8	6/6			white yel	SAND, fine - vfg	SW		35			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile 15-61

BORING NUMBER: W32SB17
DATE: 3/3/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (pp: Sample	Sampler BZ	Borehole**	Driller BZ**
~~26~~	26	9 / 10	6 / 1		med dense								
SS-12	26	5 / 7	6 / 6			white yel	SAND, fine-vfg	SW	phosphatic	0			
@1600	28	9 / 8	6 / 2			w/ Pink	bands						
SS-13	28	9 / 10	6 / 6				SAND, vf-med grained	SW	phosphatic w/ qtz + mica	0			
@1607	30	12 / 13	6 / 0										
SS-14	30	6 / 6	6 / 6				Same as above	SW	lab sample W32SB01702	0			
@1610	32	6 / 7	6 / 6						sl. moist	5			
SS-15	35	9 / 10	6 / 6		med dense	white	SAND, vf-med w/ trace gravel	SW		120			
@1640	37	9 / 11	6 / 3										
SS-16	40	6 / 9	6 / 6		med dense	white	SAND as above	SW		360			
@1648	42	13 / 14	6 / 1										
SS17	45	6 / 13	6 / 6		med dense	white	SAND as above	SW		480			
@1655	47	15 / 16	6 / 2										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W32SB17
DATE: 3/3/98-3/4/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
SS-18	50	8/13	6/6		med. dense	white	SAND, fine-med ~~wt~~	SW	petrol. Hydrocarb odor	0			
@ 1708	52	15/18	6/2		dense								
3/4/98													
SS-19	55	12/15	6/6		dense	white	SAND, fine-vfg	SW	Sl. petro odor	0	FID		
@ 0758	57	17/20	5/2		↓					2.1	PID		
SS-20	60	9/15	6/6		dense	white	SAND, fine vfg	SW	Sl. odor	0	FID		
@ 0812	62	17/20	6/1		↓					2.3	PID		
SS-21	65	9/17	4/6		dense	white	SAND, fine-vfg	SW	Sl. odor	9.8	PID		
0835	67	17/19	4/4		↓					0	FID		
SS-22	70	8/15	6/6		dens	white	Same as above	SW		75	PID		
@ 0920	72	17/20	6/3		↓								

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB17
DATE: 3/4/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (p…: Sample	Sampler BZ	Borehole**
SS-23	75	10/13	6/6		dense	lt gray,	SAND, fine grained	SW	saturated @75.4	1100		
@0940	77	17/19	6/6		↓	yellow, white			lab sample W32SB01703	2500		
SS-24	77	5/5	6/6	78.1	med dense	white	SAND, fine ~~SAND~~	SW	saturated	800		
@1010	79	36/30	6/5	78.4 78.8	vy dense	~~lt~~ yel-brown	SAND, med-coarse GRAVEL, sandy SAND, fine-med	SP GP SW	subrounded angular			
SS-25	79	4/5	6/6	79.1	Stiff	yel brown	CLAY, trace silt	CH	high plasticity	11		
@1035	81	7/7	6/4		↓		w/gray mottling		moist lab sample W32SB01704			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB18
DATE: 040598
GEOLOGIST: Tom Nicotera
DRILLER: P. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
Hand	0	NA/NA	6"/6"			Tan/black	Fine Grain						
Auger	2	NA/NA	6"/6"				Sand mix			40 ppm	ON	7 ppm	
Hand	2	NA/NA	6"/6"			Tan/black	Fine Grain						
Auger	4	NA/NA	6"/6"				Sand mix			99 ppm	ON	5 ppm	
SS01	4	50/50	6"/6"			Tan/black	Fine Grain						
0822	6	50/50	6"/6"				Sand mix			193 ppm			
* SS02	6	30/39	6"/6"			Tan/black	Fine Grain		Soil sample collected Here W32SB01801				
0830	8	28/28	6"/6"				Sand mix		Dry	770 ppm			
SS03	8	13/7	6"/6"			Tan/black	mix of Fine Grain		Moist				
0835	10	6/6	6"/6"				Silty sand			225 ppm			
SS04	10	20/30	6"/6"			Tan	with slight Greenish Tint		Moist				
0843	12	35/40	6"/6"				~~Tint~~ clay			16 ppm			
SS05	12	14/18	6"/6"			Tan + Gray	mix clay		Moist				
0905	14	24/28	6"/6"				Stiff			35.7 ppm			
SS06	14	72/160	6"/6"			Lt. Tan + pink	very		Moist				
0910	16	140/175	6"/6"				Stiff clay			0 ppm			
SS07	16	22/27	6"/6"			Orange	Silty sand with		Moist				
0930	18	24/28	6"/6"				Some reddish clay			64 ppm			
SS08	18	30/35	6"/6"			Orange	Silty sand		Moist				
0935	20	35/30	6"/6"				Fine Grain			24 ppm			0
SS09	20	25/29	6"/6"			Lt. Orange + White	Fine		dry				
0950	22	33/34	6"/6"				Grain sand with some Rusty sand			11 ppm			
SS10	22	46/35	6"/6"			Lt. Tan + Lt orange	with some		dry				
0955	24	45/40	6"/6"				Rusty Fine Grain sand			16.5 ppm			
SS11	24	55/50	6/6			Lt Tan	Fine Grain sand			0 ppm			

* When rock coring, enter rock brokeness

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Oven

Drilling Area Background (ppm):

Remarks: * means Soil sample (W32SB01801) collected Here

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 2541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB18
DATE: 040598
GEOLOGIST: Tom Mcwters
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
SS11	24											
1010	26	56/58	6/6				LT. Tan Fine Grain Sand		dry.	0 ppm		
SS12	26	14/18	0/6									
1022	28	21/26	6/6				LT. Tan/Orange Fine Grain Sand			1.5 ppm		
SS13	28	14/14	6/6				LT Tan Sand Fine					
1028	30	17/19	6/6				Grain			6.5 ppm		

* When rock coring, enter rock brokeness
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Terminate borehole @ 30' BLS

Drilling Area Background (ppm): 0.1

Converted to Well: Yes ______ No ✓ Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: W32SB19
DATE: 040598
GEOLOGIST: Tom Miceteria
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	
Post Hole	0	NA/NA	6/6				Rusty med. Grain		dry				
Hand Auger	2	NA/NA	6/6				Sand			0 ppm		0/	
Post Hole	2	NA/NA	6/6			LT	Brown med Grain		moist				
Hand Auger	4	NA/NA	6/6				Sand			500	ppm		
SS01	4	10/40	6/6			LT	Brown Fine & med		moist sand				
1411	6	30/30	6/6				Grain sand		moist	968	ppm		
* SS02	6	25/15	6/6			LT	Tan & LT Brown Fine		1st soil sample collected here W32SB01901				
1415	8	15/34	6/6				Grain sand		moist	3200	ppm		
SS03	8	28/29	6/6			LT	Brown Fine Grain						
1420	10	33/35	6/6				Sand		moist	2355	ppm		
SS04	10	10/7	6/6			LT	Brown & Black Fine						
1435	12	6/4	6/6				Grain sand		moist	169	ppm		
SS05	12	3/2	6/6				Tan & Black & LT Brown						
1438	14	1/5	6/6		Clay		with mix with Fine Grain sand.		moist	313	ppm	1.8	
SS06	14	8/8	4/4			LT.	Tan & Rusty Red Clay &		clay-stiff				
1450 ~~1445~~	16	10/12	6/6				Brown Fine Grain Sand.		moist	457	ppm	20	
SS07	16	27/29	6/6			LT	Tan & Brown Fine		mostly clay-stiff				
1455	18	33/38	6/6				Grain silty sand & clay		moist	86	ppm		
SS08	18	60/90	4/6				Brown Fine Grain Sand &						
1507	20	130/170	6/6				Reddish orange Fine Grain Sand		moist	650	ppm		
SS09	20	23/52	6/6				Reddish orange Fine Grain						
1520	22	48/70	6/6				Sand		dry.	201	ppm		
SS10	22	72/98	6"/6"				Reddish orange Fine/med						
1530	24	100/98	6"/6"				Grain Sand with gravel size rock fragments		dry	815	ppm		
SS11	24	66/77	6/6				Lt. Tan & Reddish orange Fine/med Grain Sand		dry	989	ppm		

* When rock coring, enter rock brokeness

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read

(Over)

Drilling Area Background (ppm):

Remarks: * means soil sample collected here.

Converted to Well: Yes ______ No ______ Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: W325B19
DATE: 040598
GEOLOGIST: Tom Nicters
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
SS11	24											39pc
1545	26	116/160	6/6				LT. Tan/Reddish Orange Fine Grain Sand		dry	1891		
SS12	26	12/12	6/6			LT	Tan/Cream + Reddish Orange					
1555	28	14/16	6/6				Fine Grain Sand		dry	1809 ppm		
SS13	28	18/18	6/6			LT	Cream Fine Grain					
1605	30	16/17	6/6				Sand		dry	2950 ppm		
SS14	35	18/20	6/6			LT	Tan + LT Cream Fine					
1742	37	28/34	6/6				Grain Sand		dry	804 ppm		~~[illegible]~~
* SS15	40	6/9	6/6			LT	Tan + LT Cream Fine	2nd	Soil Sample collected Here W325B01902			
1720	42	19/19	6/6				Grain Sand		dry	3555 ppm		200
SS16	45	13/16	6/6			LT	Cream Fine					
1725	47	17/22	6/6				Grain Sand		dry	3100 ppm		
SS17	50	13/17	6/6			LT	Grey Fine					
1730	52	21/24	6/6				Grain Sand		dry	3050 ppm		
SS18	55	17/24	6/6				LT Grey Fine					
1735	57	31/43	6/6				Grain Sand		dry	3450 ppm		
* SS19	60	13/19	4/6				LT Grey Fine	3rd	Soil Sample collected Here W325B01903			
1755	62	27/36	6/6				Grain Sand		dry	391 ppm		
SS20	65	24/32	3/5				LT Pinkish/Grey					
1800	67	28/34	6/6				Fine Grain Sand		dry	3700 ppm		
SS21	70	26/24	4/6				LT Pinkish/Grey Fine					
1825	72	30/28	6/6				Grain Sand with Some Grey Clay		dry	391 ppm		
SS22	75	20/23	4/6				LT Pinkish Tan Fine					
1835	77	27/31	6/6"				Grain Sand.		dry	3899 ppm		475
~~SS24~~	~~80~~											
	~~82~~											

* When rock coring, enter rock brokeness

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Terminate Boring @ 77'BLS
* means Soil Sample collected Here   W.T. not encountered.

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 33B001** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

Site: 33 – Midfield Hanger	**Drilling**	**Date**	**Time**
Contractor: Groundwater Protection, Inc.	**Started**	6/6/96	1540
Drill Method: HSA	**Finished**	6/6/96	1700

Borehole Diameter: 6 in.	**Total Depth:** 52 ft. BGS	**Logged By:** R. Pratzman	**Entered By:** Tetra Tech NUS

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
33B00101			20/24			SAND, silty, very fine, light brown, well sorted.	0	CL	dry
33B00102		7/7/9/9	24/24	5		CLAY, moderate brown, stiff.	0	CL	
33B00103		15/17/18/22	24/24	10		Same as above, w/ some fine sand.	0	CL	
33B00104		12/5/5/7	24/24	15		Same as above.	0	CL	
33B00105		14/12/11/11	24/24	20		Same as above.	0	CL	
				25					
33B00106		20/17/14/14	24/24	30		Same as above.	0	CL	
						SAND, laminations, white and moderate redish brown, fine, well sorted.		SP	

ABB Environmental Services
2590 Executive Center Circle, East
Tallahassee, FL 32301-5001

Log of Boring 33B001
SOUTHNAVFACENGCOM
NAVAL AIR STATION WHITING FIELD
MILTON, FL

Job Number: RI PHASE IIA

Elevation: NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
33B00107		25/28/33/41	20/24	40		SAND, little clay, moderate reddish orange, fine, well sorted.	4	SP	dry
				45					
33B00108		27/21/15/17	16/17	50		SAND, fine, well sorted, pinkish gray and yellowish orange. TD - 52'	2	SP	
				55					
				60					
				65					
				70					

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 33B002** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

	Drilling	**Date**	**Time**
Site: 33 - Midfield Hanger			
Contractor: Groundwater Protection, Inc.	**Started**	6/6/96	1200
Drill Method: HSA	**Finished**	6/6/96	1310

Borehole Diameter: 6 in. | **Total Depth:** 52 ft. BGS | **Logged By:** R. Pratzman | **Entered By:** Tetra Tech NUS

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
33B00201			18/24			CLAY, stiff, moderate reddish brown, no odor.	0	CL	dry
				5					
33B00202		10/5/6/7	22/24			Same as above.	0	CL	
				10					
33B00203		5/4/3/4	24/24			Same as above, w/ some fine sand.	0	CL	
				15					
33B00204		6/5/6/8	24/24			Same as above.	0	CL	
				20		Same as above, no sand.			
33B00205		7/7/8/13	24/24				6	CL	
				25					
				30					
33B00206		7/14/20/18	24/24			Same as above, some sand.	0	CL	

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 33B002** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 2 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
				40		Same as above		CL	
33B00207		13/22/24/22	20/24			SAND, very fine, well sorted, medium dense, yellowish orange.	15	SP	dry
				45					
				50					
33B00208		16/16/16/16	16/17			SAND, very fine, well sorted, grayish white, dense.	10	SP	
						TD - 52'			
				55					
				60					
				65					
				70					

ABB Environmental Services 2590 Executive Center Circle, East Tallahassee, FL 32301-5001	**Log of Boring 33B003** SOUTHNAVFACENGCOM NAVAL AIR STATION WHITING FIELD MILTON, FL	**Sheet 1 of 2** **Job Number:** RI PHASE IIA **Elevation:** NA

	Drilling	Date	Time
Site: 33 - Midfield Hanger			
Contractor: Groundwater Protection, Inc.	Started	6/6/96	0930
Drill Method: HSA	Finished	6/6/96	1110

Borehole Diameter: 6 in. | **Total Depth:** 52 ft. BGS | **Logged By:** R. Pratzman | **Entered By:** Tetra Tech NUS

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
33B00301		5/11/12/14	24/24			CLAY, stiff, moderate reddish brown, dry.	3	CL	dry
33B00302		2/16/17/14	24/24	5		Same as above.	2	CL	
33B00303		4/14/17/26	24/24	10		Same as above, yellow orange and moderate reddish brown, odor.	16	CL	
33B00304		5/8/12/13	24/24	15		SAND, clayey, fine, well sorted, moderate reddish brown, odor.	60	SC	dry
33B00305		7/9/12/18	24/24	20		Same as above. SAND, very fine, well sorted, dense, grayish red.	4	SC SP	dry
				25					
33B00306		5/18/17/18	24/24	30		Same as above, light pink	3	SP	dry

ABB Environmental Services
2590 Executive Center Circle, East
Tallahassee, FL 32301-5001

Log of Boring 33B003
SOUTHNAVFACENGCOM
NAVAL AIR STATION WHITING FIELD
MILTON, FL

Job Number: RI PHASE IIA

Elevation: NA

SAMPLE ID		BLOWS/6-in.	RECOVERY	Depth (feet)	Graphic Log	Materials Description	FID (ppm)	SOIL CLASS	MOISTURE
33B00307		17/30/29/34	20/24	40		SAND, very fine, trace silt, well sorted, pinkish gray.	1	SP	dry
				45					
33B00308		31/32/49/RF	16/17	50		SAND, very fine, well sorted, grayish white, very dense. TD - 52'	0	SP	dry
				55					
				60					
				65					
				70					

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB06
DATE: 3/18/98
GEOLOGIST: J. Nofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
SS-01 ST-01	0	NA	6/6		loose	BRN	Sand, fine, silty	SM	lab sample W33SB00601				
0915	1 2		6/4						Geotech sample W33SB00602				
HA	2		NA										
	4												
SS-02	4		6/6	5.0	loose	red-brown	SAND, silty, vfg	SM		0			
0920	6		0/0		med dense		SILT, sandy	ML	moist				
SS-03	6		6/6			RED	SAND, VFG, SILTY	SM	Moist	0			
0925	8		6/6										
SS-04	8		6/6			RED		SM		0			
0930	10		6/6										
SS05	10		3/0					SM		0			
0945	12		0/0										
SS-06	12		6/6		med dense		Same as above		moist	0	0	0	0
0950	14		6/5										
SS-07	14		6/6		dense	red	SAND, fine-vfg, some silty	SM	Sl. moist	0			
1000	16		4/6										
SS-08	16		6/6			red	SAND, fine, little silt	SW	Sl. moist	0			
1010	18		6/6										
SS-09	18	No RECOVERY			vy loose				driller report vy loose soil				
1020	20												
SS-10	20		4/6		loose-med dense	red	SAND, silty, fine-vfg	SM	Sl. moist	0	0	0	0
1025	22		4/6										
SS-11	22		6/6	23.0	dense		SAND, fine-vfg	SW	Sl. Moist	0			
1033	24		6/4		loose	yel-red	SAND, silty, vfg,	SM	phosphatic				
SS-12	24		6/6				Interbedded silty vfg SAND + med gr. SAND	SM/SW	sl. moist-dry	0			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: 0-2 ft Shelby tube + 02- split-spoon pushed beside hand-dug hole

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 33SB06
DATE: 3/18/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
@ 1037	1 / 26	NA	6/5					SM/SW	Sl. moist-dry	0	0	0
SS-13	26		6/6		loose	orange &	SAND, fine-vfg	SW	Phos. - dry	0		
@ 1045	28		6/1			white	marbled					
SS-14	28		6/6		loose	orange &	SAND, fine-vfg	SW	phos, dry,	0		
@ 1052	30		6/0			white	laminated		lab Sample W33SB00603			
							TD-30'					

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
BORING NUMBER: 33SB07
PROJECT NUMBER: 7541
DATE: 3/19/98
DRILLING COMPANY: Gulf Atlantic
GEOLOGIST: J. Hofer
DRILLING RIG: Mobile B-61
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
Conc cutter	0 / 1	NA					Concrete						
post hole	1			1.0									
hand auger				3.0		brown	SAND		FILL				
	4												
SS-01	4		4/6		loose	red	SAND, silty, fine-vfg	SM	Sl. moist	0	0	0	0
@ 0912	6		6/6										
SS-02	6		6/6				Same as above	SM	Sl. moist	0			
@ 0914	8		4/3										
SS-03	8		4/6				Same as above	SM	Sl. moist	0			
@ 0918	10		6/6										
SS-04	10		6/6				Same as above	SM	3" Sl. moist	0	0	0	0
@ 0928	12		3/0										
SS-05	12		6/6				Same as above	SM	Sl. moist	0			
@ 0935	14		6/6										
SS-06	14		6/6				Same as above	SM	Sl. moist	0			
@ 0937	16		6/6	16.0									
SS-07	16		6/6		hard	red	SILT, sandy, vfg	ML	3" dry, friable	0	0	0	0
@ 0945	18		6/0		~~dense~~								
SS-08	18		6/6		stiff	red	same as above	ML	dry, friable	0			
@ 1000	20		6/6										
SS-09	20		6/6		soft	red	Same as above	ML	dry, friable	0			
@ 1005	22		4/4										
SS-10	22		6/6		med stiff		Same, w/ more SAND	ML	3" dry				
@ 1015	24		2/0						lab sample W33SB00701	0	0	0	0
SS-11	24		6/6	24.7		red orange	S		W33MS00701				

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB07
DATE: 3/19/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
@1018	26	NA	6/3		loose	orange	SAND, vfg, silty	SM	phosphatic	0	0	0	0
SS-12	26		6/6				same		dry	0			
@1022	28		6/2										
SS-13	28		6/6			Orange → white	SAND, fine-vfg	SW	dry-sl.moist	0			
@1038	30		6/3										
							TD-30'						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ______ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 33SB08
DATE: 3/20/98
GEOLOGIST: J Hofer
DRILLER: D Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
Conc. cutter	0 / 1	NA	NA	1.0			Concrete						
Post hole				2.0		brown	SAND, fine, silty	SM	FILL				
hand Auger						red	SAND, fine, vf silty						
↓	4		↓	4.0									
SS-01 @	4		6/6		med stiff	red	SILT, sandy, vfg	ML	sl. moist	0	0	0	0
1002	6		6/0										
SS-02 @	6		6/6		med stiff	red	Same	ML	sl. moist	0			
1004	8		6/3	8.0									
SS-03 @	8		6/6		med dense	red	SAND, silty, fine	SM	sl. moist	0			
1006	10		6/4						lab sample W33SB00801				
SS-04 @	10		6/6		med dense	red	Same as above	SM	sl. moist	0	0	0	0
1015	12		6/6										
SS-05 @	12		NA						Auger stuff	NA			
1017	14		↓										
SS-06 @	14		6/6		med dense	red	SAND, as above	SM	sl. moist	0			
1021	16		6/6										
ST-01 @	16		6/6						Shelby Tube Geotech Sample W33SB00802		0	0	0
1037	18		6/6										
SS-07 @	18		6/6		med dense	red	SAND, fine, silty	SM	sl. moist	0			
1058	20		0/0										
SS-08 @	20		6/6	20.0	med dens	red	SAND, vfg, silty	SM	sl. moist-dry	0			
1104	22		6/6										
SS-09	22		6/6				Same as above	SM		0	0	0	0
1107	24		6/6										
SS-10	24		6/6	25.0	med dense	red	SAND, fine-vfg, silty grading to	SM	sl. moist-dry	0			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X   Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB08
DATE: 3/20/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
1116	24	NA	6/6	25.0	loose	orange	SAND, fine-vfg	SW	sl. moist-dry	0		
SS-11	26		6/6	26.0	loose	reddish	SAND, vfg, little to	SP	sl. moist-dry	0		
1124	28		6/6			yellow-white	no silt	~~SP~~				
ST-02	28		6/6						Shelby Tube			
1132	30		0/0						Geotech Sample W33SB00803			
SS-12	30		6/6		med dense	white	SAND, fine	SP	dry, phosph.	0		
	32		6/0									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB09
DATE: 3/18/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
Concrete cutter	0	NA	NA				Concrete						
Post-hole hand auger					hard	brown	SAND,		FILL, compacted				
	4												
SS-01 @ 1348	4 / 6		6/6 6/6		loose	red	SAND, fine, silty	SM	moist	2.5	0	0	0
SS-02 @ 1350	6 / 8		6/6 6/0							0			
SS-03 @ 1400	8 / 10		6/6 6/0							2.0			
SS-04 @ 1445	10 / 12		6/6 0/0		dense	red	SAND, vfg, silty	SM		0.4	0	0	0
SS-05 @ 1447	12 / 14		6/6 6/3				same as above	SM		0.8			
SS-06 @ 1452	14 / 16		6/6 4/2		dense	red	Same as above	SA	Sl. moist-dry	3.0			
SS-07 @ 1500	14 / 18		6/6 6/1		Vy dense	red	SAND, clayey, fine	SC	dry	1.0	0	0	0
SS-08 @ 1505	18 / 20		6/6 1/0		med dense		SAND, vfg, silty	SM	Sl. moist	1.4			
SS-09 @ 1523	20 / 22		6/6 6/1			red				2.6			
SS-10 @ 1530	22 / 24		6/6 6/3		loose	Orange / lt orange	SAND, fine-vfg	SW	Sl. moist, phosph	2.2	0	0	0
SS-11	24		6/6			white				0			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB09
DATE: 3/18/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	PID/FID Reading (ppm): Sampler BZ	PID/FID Reading (ppm): Borehole**	PID/FID Reading (ppm): Driller BZ**
1535	26	NA	6/0		loose	1st 6" wh.	SAND, fine-vfg	SW	Phos. Sl. moist	0	0	0	
SS-12	26		6/4							0			
1610	28		0/0										
SS-13	28		6/4		loose	white w/	SAND, fine-vfg	SW	phos, sl. moist	0			
1619	30		6/6			brang lam							
							TD-30'						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB10
DATE: 3/19/98
GEOLOGIST: J Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
Conc. cut	0	NA	NA				Concrete						
post hole	1			1.0									
hand auger						red	SAND, fine, silty	SM	Sl. moist				
	4												
SS-01	4		6/6		med dense	red	SAND, fine, silty	SM	Sl. moist	0	0	0	0
1514	6		6/4										
SS-02	6		6/6			red	Same as above	SM		0.3			
1516	8		6/4			yell-brown			moist				
SS-03	8		6/6				SAND, fine-vfg, silty	SM		0			
1518	10		6/6				Fe concretions		Vy moist,				
SS-04	10		6/6					SM		0	0		0
1532	12		1/0										
SS-05	12		6/6	12.0	hard	red	SILT, sandy, vfg	ML	Dry	0			
1538	14		6/3										
SS-06	14		6/6	14.0	vy dense	red	SAND, fine, silty	SM	Sl. moist	0			
1548	16		5/0										
SS-07	16		6/6		dense	red	SAND, fine-vfg, silty	SM	Sl. moist	1.3	0	0	0
1555	18		6/5										
SS-08	18		6/4					SM	Sl. moist	1.0			
1610	20		4/4	19.0	loose	red yel-red	SAND, fine-vfg, little silt	SW	dry				
SS-09	20		6/6							0			
1625	22		6/2		loose	yel-red	SAND, fine						
SS-10	22		6/6							0	0	0	0
1627	24		6/5										
SS-11	24		6/6	24.2	med stiff	lt purp	SILT, w/ vfg sand	ML	Sl. moist	1.2			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No ____ Well I.D. #:

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB10
DATE: 3/19/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
1632	26	NA	6/3		med stiff	lt purple	SILT, w/ vfg sand	ML				
SS-12	26		4/6							0.6	0	0
1640	28		6/2	28.0								
SS-13	28		4/6		loose	white	SAND, vfg, silty	SM	phosph.	1.2		
1644	30		6/2									
							TD - 30'					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME:	NAS Whiting Field	BORING NUMBER:	33SB11
PROJECT NUMBER:	7541	DATE:	3/20/98
DRILLING COMPANY:	Gulf Atlantic	GEOLOGIST:	J. Hofer
DRILLING RIG:	Mobile B-61	DRILLER:	D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
Conc cutter	0-1	NA	NA	1.0			Concrete						
Post hole	1			2.0		brown	SAND, fine, silty	SM					
hand auger													
	4												
SS 01	4		6/6		stiff	red	SILT, w/ vfg sand	ML	low plast.	0.4	0	0	0
@1250	6		4/4						Sl. moist				
SS-02	6		6/6		Stiff	red	SILT, w/ vfg sand grading	ML	Sl. moist	0.8			
@1252	8		6/5		med dense		to SAND, silty, fine-vfg	SM	lab sample W33SB01101				
SS-03	8		6/6							0.6			
@1254	10		6/4										
SS-04	10		NA						Auger slough		0		0
@1306	12												
SS-05	12		6/6		med dense	red	SAND, silty fine grained	SM	Sl. moist	0.8			
@1308	14		4/4							~~0.8~~			
SS-06	14		6/6							0.4			
@1310	16		6/5	15.3	loose	yellowish red	SAND, fine-vfg,	SP	Sl. moist-dry				
SS-07	16		6/6	16.0	vy dense	red w/ yellow mottling	SAND, silty, fine grained	SM	Sl. moist	0.3	0	0	0
@1324	18		6/5										
SS-08	18		6/6		vy dense	red	SAND, silty, clayey, fine	SM/SC	Sl. moist	0.4			
@1329	20		6/4						hard drilling				
SS-09	20		6/6		vy dense	red	Same as above	SM/SC		0.6			
@1334	22		6/2										
SS-10	22		6/6	22.5	vy dense	red	SAND, silty, clayey	SC	Sl. moist -	0.1	0	0	0
				23.0	med dense	pink	SAND, silty	SM					
@1338	24		6/6		loose	White	SAND, fine-vfg	SW	phosphatic	0.1			
SS-11	24		6/6		loose	White	SAND, fine-vfg	SW		0			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ____________________ Drilling Area Background (ppm): 0

Converted to Well: Yes ______ No X Well I.D. #: ______

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB11
DATE: 3/20/98
GEOLOGIST: J. Hofer
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading: Sample	Sampler BZ	Borehole**
@ 1406	26	NA	6/3	26.0	loose	white	SAND, fine-vfg	SW	phosph., dry	0	0	0
SS-12	26		6/6		med dense	white	SAND, fine	SP	phosph, Qtz wy	0		
@ 1414	28		6/4						trace mica			
SS-13	28		6/6		dense	white	SAND, fine	SP	phos, dry.	0		
@ 1430	30		6/5									

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #:

BORING LOG

PROJECT NAME: Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61

BORING NUMBER: 33SB12
DATE: 3/19/98
GEOLOGIST: ~~J Hofer~~ M. Hao
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
Concr. Cut	0	NA		1.0			Concrete						
Post hole	1					brown	SAND, fine, silty	SM					
Hand auger				2.5'		red							
	4												
SS-01	4		6/6		stiff	Yel	sandy silt fine	SM	moist	0	0	0	0
1202	6		6/6			BRN							
SS-02	6		6/6		v stiff	Red		SM	dry	0			
1204	8		0/0			to yel							
SS-03	8		6/3		dense	Red		SM	moister	0			
1208	10		0/0			to yel							
SS-04	10		6/6		dense	Red		SM		0.2	0	0	0
1220	12		6/2			to Yel							
SS-05	12		6/6		dense	Red	Silty sand	SM		1.0			
1226	14		6/6			Red	Sand f-m, silty	SM	m				
SS-06	14		0/0		loose					0			
1229	16		6/6										
SS-07	16		6/6		med	Red				0.3	0	0	0
1238	18		6/0		dense								
SS-08	18		6/6		med	ORG	sand, silty fine, clay		5" @ 19'	0.1			
1245	20		6/3		dense to	wht	sand, fg phosphates						
SS-09	20		6/6	21	stiff	Pale	fine sand + silt	SM	phosphates	4.0			
1248	22		3/6			ORG			1d6 sample W33SB01201				
SS-10	22		6/6		dense	to White				1.6			
1257	24		6/2				Sand, very fine	SM			0	0	0
SS-11	24		6/6		loose	white pink	grading to fine			1.4			

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X

Well I.D. #:

R4708989

CTO 0028

BORING LOG

PROJECT NAME: NAS Whiting Field
PROJECT NUMBER: 7541
DRILLING COMPANY: Gulf Atlantic
DRILLING RIG: Mobile B-61
BORING NUMBER: 33SB12
DATE: 3/19/98
GEOLOGIST: M. Hamsh
DRILLER: D. Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ
1310	26	NA	6/0										
SS-12	26		6/6		med	wht	sand, vfg	S	phosphate, dry	3.9			
1320	28		6/4		dense to	pink							
SS-13	28		6/6						dry	0.7			
1330	30		6/0										
							TD-30'						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No X Well I.D. #:

R4708989

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CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	1
SITE:	03	**SAMPLE NO.:**	W03SB01304
		DATE:	8-14-98

DEPTH:	0 - 2 ft
SPECIFIC GRAVITY:	2.63
DRY BULK DENSITY:	1.57 g/cm^3
PERMEABILITY:	2.94×10^{-4} CM/S
WATER CONTENT:	8.7%
ATTERBERG LIMITS:	NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	97.6
No. 10	97.1
No. 40	85.2
No. 60	61.7
No. 100	37.1
No. 200	21.5

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0481	15.7
0.0242	14.7
0.0109	12.8
0.0045	11.8

By: RCW 8/14/98
R.C. Wohlfarth, P.E. #50858

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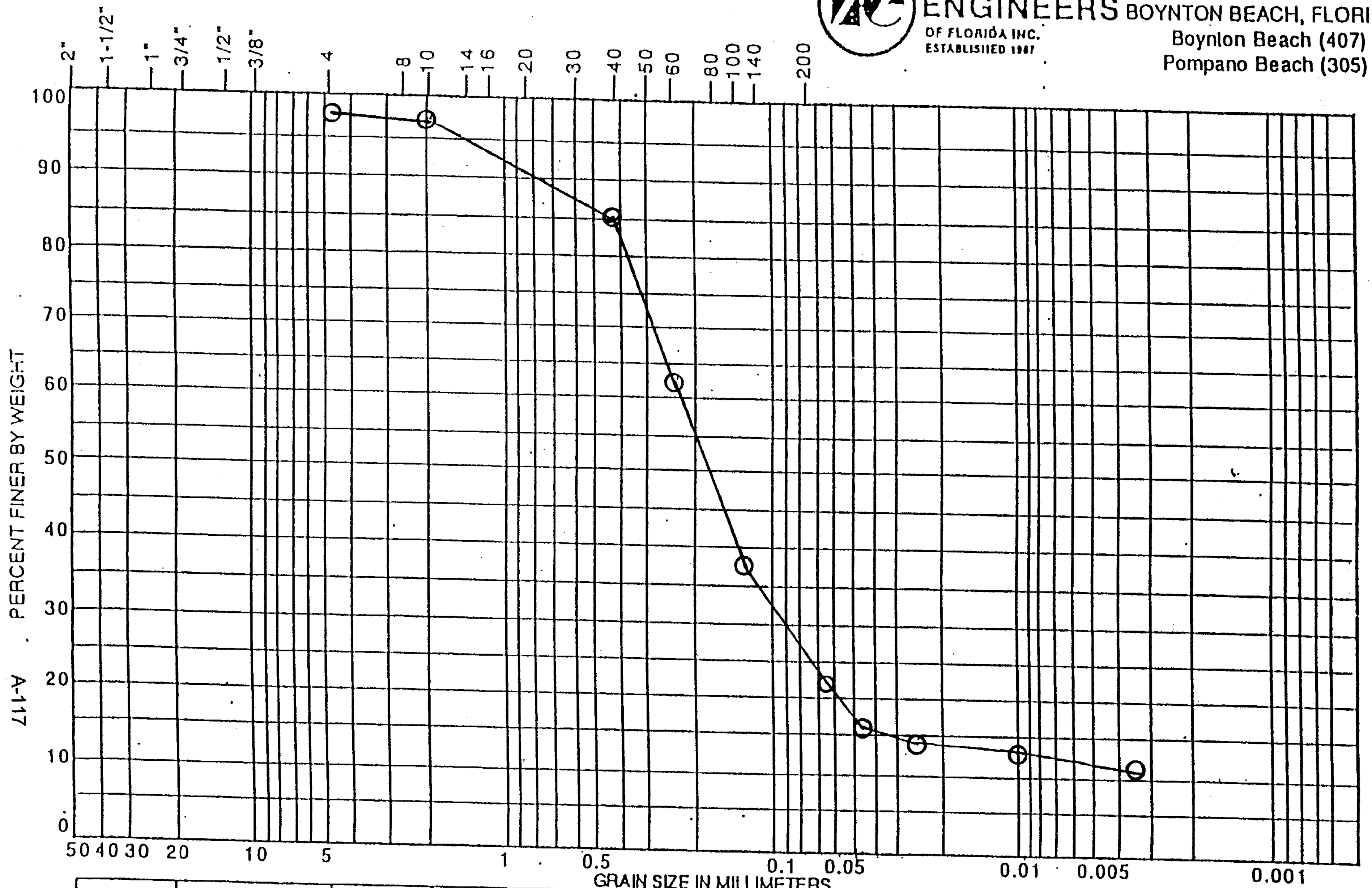

COARSE GRAVEL	FINE GRAVEL	COARSE SAND	MEDIUM SAND.	FINE SAND	SILT	CLAY

UNIFIED SOIL CLASSIFICATION

PROJ W03SB1304 BO[illegible] NO. OR LOCATION SITE 03

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CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	2
SITE:	03	**SAMPLE NO.:**	W03SB01401
		DATE:	8-14-98

DEPTH:	14 - 16 ft
SPECIFIC GRAVITY:	2.65
DRY BULK DENSITY:	1.72 g/cm^3
PERMEABILITY:	1.15×10^{-6} CM/S
WATER CONTENT:	16.5%
ATTERBERG LIMITS:	PL 21.8 LL 26.2 PI 5.6

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	100
No. 60	89.1
No. 100	59.0
No. 200	30.7

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0446	27.0
0.0224	25.0
0.0101	23.5
0.0048	23.0

By: Rcw 8/14/98
R.C. Wohlfarth, P.E. #50858

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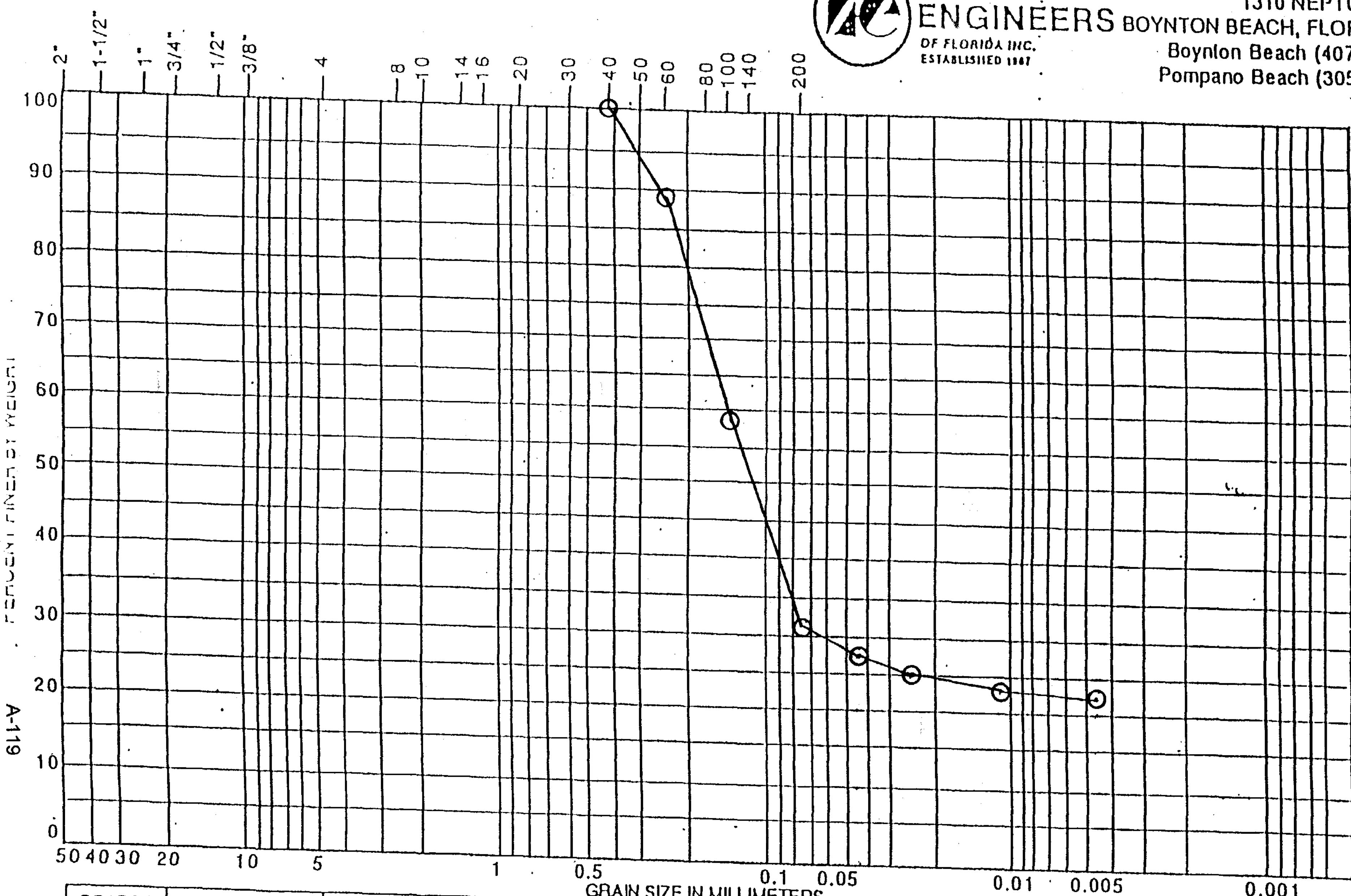

COARSE GRAVEL	FINE GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	SILT	CLAY

UNIFIED SOIL CLASSIFICATION

PROJECT W03SB1401 BORING NO. OR LOCATION SITE 03

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CLIENT: Tetra Tech Nus
PROJECT: Nas, Whiting Field, Milton, FL
SITE: 03

ORDER NO.: 11487.1
REPORT NO.: 3
SAMPLE NO.: W03SB01403
DATE: 8-14-98

DEPTH: 24 - 26 ft
SPECIFIC GRAVITY: 2.66
DRY BULK DENSITY: 1.42 g/cm^3
PERMEABILITY: 1.14×10^{-3} CM/S
WATER CONTENT: 3.4%
ATTERBERG LIMITS: NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	95.2
No. 60	69.1
No. 100	27.9
No. 200	12.1

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0522	2.0
0.0303	1.0
0.0150	0.5

By: RCW 8/14/98
R.C. Wohlfarth, P.E. #50858

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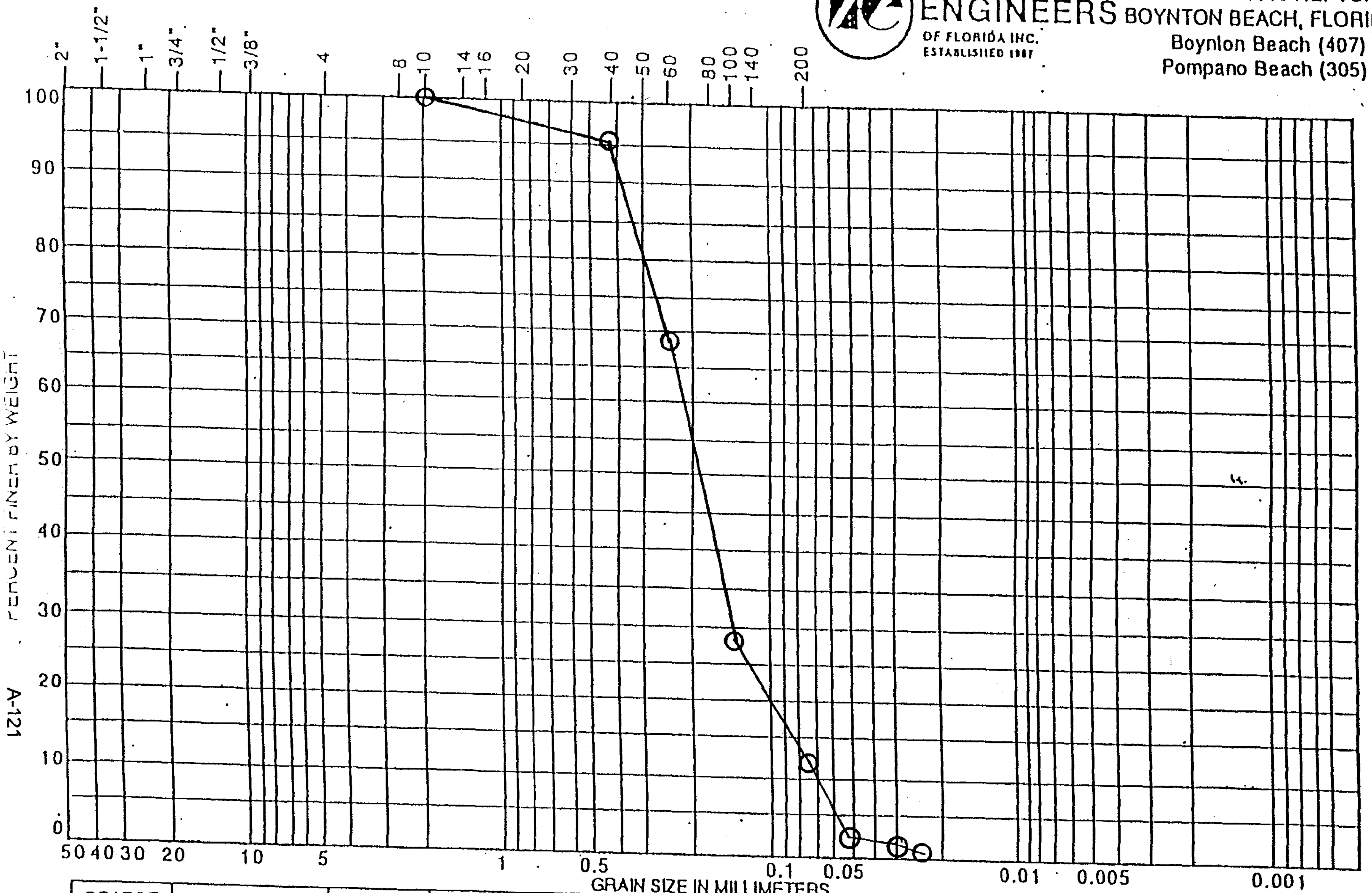

A-121

COARSE GRAVEL	FINE GRAVEL	COARSE SAND	MEDIUM SAND.	FINE SAND	SILT	CLAY

UNIFIED SOIL CLASSIFICATION

PROJE W03SB1403 BOF NO. OR LOCATION SITE 03

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CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	4
SITE:	30	**SAMPLE NO.:**	W03SB01302
		DATE:	8-14-98

DEPTH:	0 - 2 ft
SPECIFIC GRAVITY:	2.63
DRY BULK DENSITY:	1.71 g/cm^3
PERMEABILITY:	2.82 x 10^{-7} CM/S
WATER CONTENT:	18.8%
ATTERBERG LIMITS:	PL 17.3 LL 29.5 PI 12.2

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	90.0
No. 60	74.2
No. 100	56.2
No. 200	44.3

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0399	38.3
0.0203	36.3
0.0054	33.3
0.0038	32.2

By: RC 8/14/98
R.C. Wohlfarth, P.E. #50858

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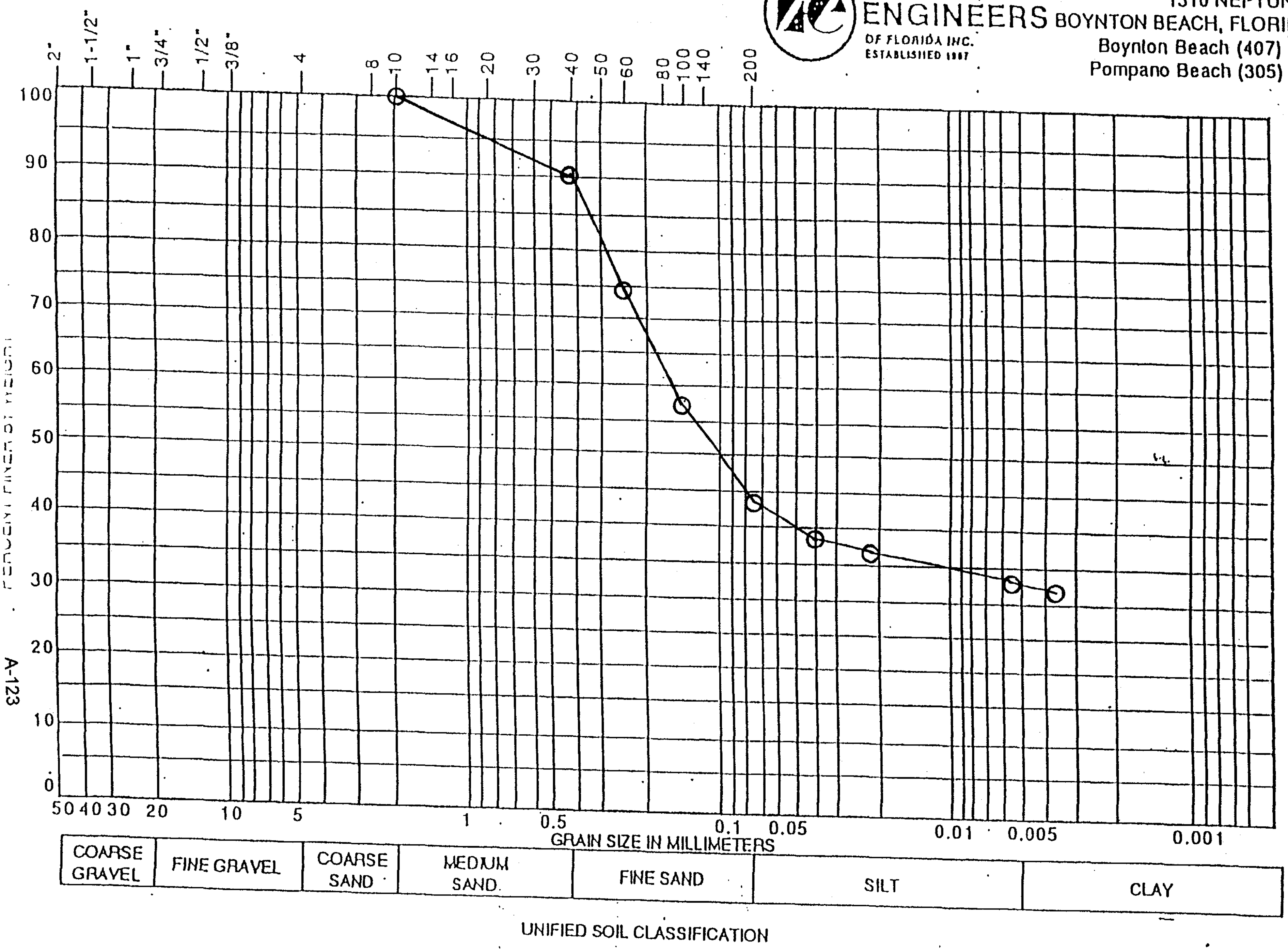

A-123

PROJECT W30SB01302 BORING NO. OR LOCATION SITE 30

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CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	5
SITE:	30	**SAMPLE NO.:**	W30SB01304
		DATE:	8-14-98

DEPTH:	12 - 14 ft
SPECIFIC GRAVITY:	2.63
DRY BULK DENSITY:	1.57 g/cm^3
PERMEABILITY:	3.78 x 10^{-5} CM/S
WATER CONTENT:	14.4%
ATTERBERG LIMITS:	NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	98.2
No. 60	95.2
No. 100	81.0
No. 200	28.3

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0468	16.4
0.0237	14.6
0.0123	13.7
0.0044	12.8

By: RW 8/14/98
R.C. Wohlfarth, P.E. #50858

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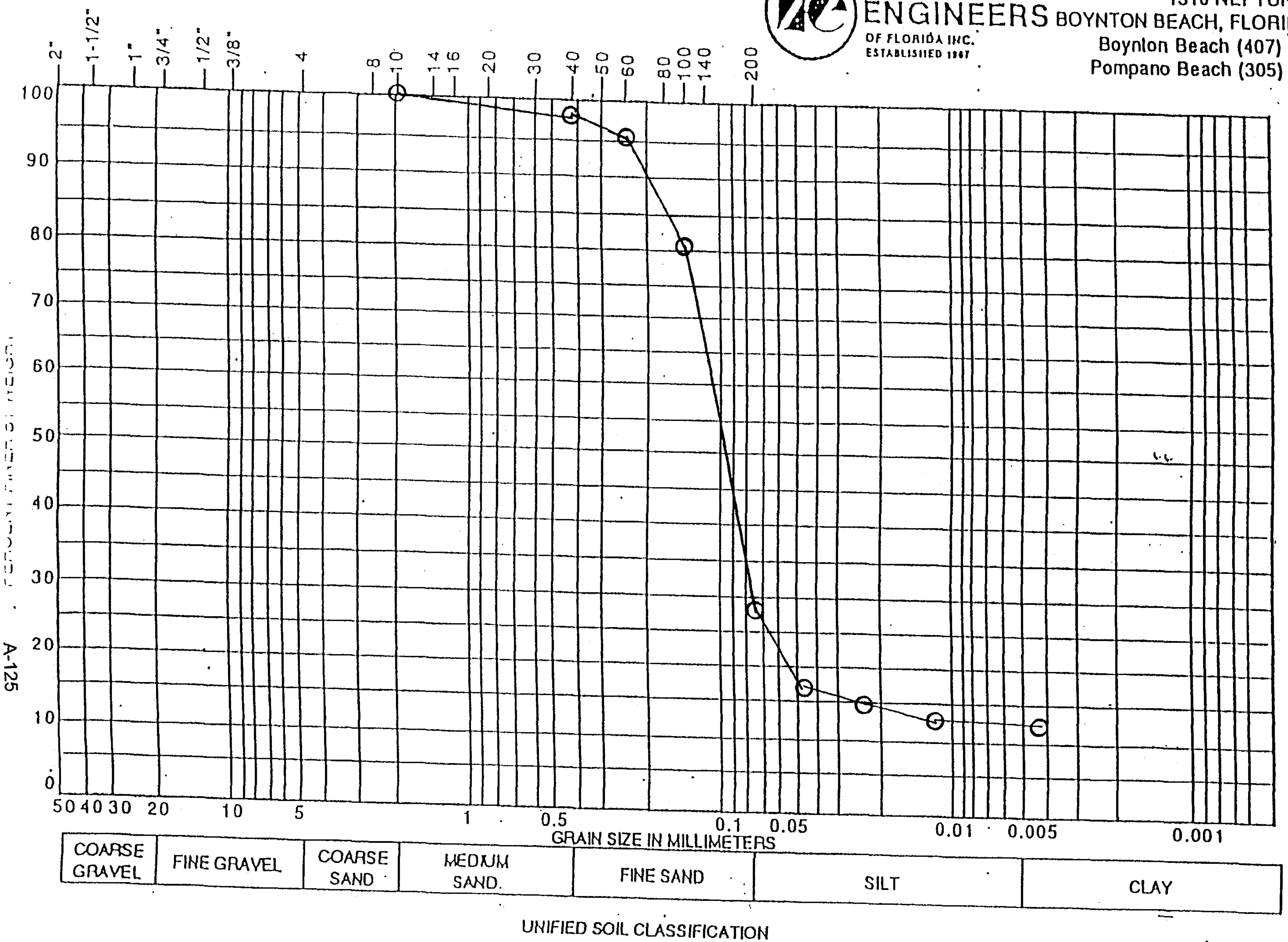

A-125

PROJE(W30SB01304 BORI... NO. OR LOCATION SITE 30

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CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	6
SITE:	30	**SAMPLE NO.:**	W305SB01305
		DATE:	8-14-98

DEPTH:	22 - 24 ft
SPECIFIC GRAVITY:	2.65
DRY BULK DENSITY:	1.51 g/cm^3
PERMEABILITY:	2.67 x 10^{-4} CM/S
WATER CONTENT:	7.7
ATTERBERG LIMITS:	NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	**SIEVE ANALYSIS PASSING %**
No. 4	100
No. 10	100
No. 40	99.9
No. 60	73.2
No. 100	5.5
No. 200	1.0

HYDROMETER ANALYSIS

SIEVE ANALYSIS	**% FINER**
0.0539	0.5

By: Rcw 8/14/98
R.C. Wohlfarth, P.E. #50858

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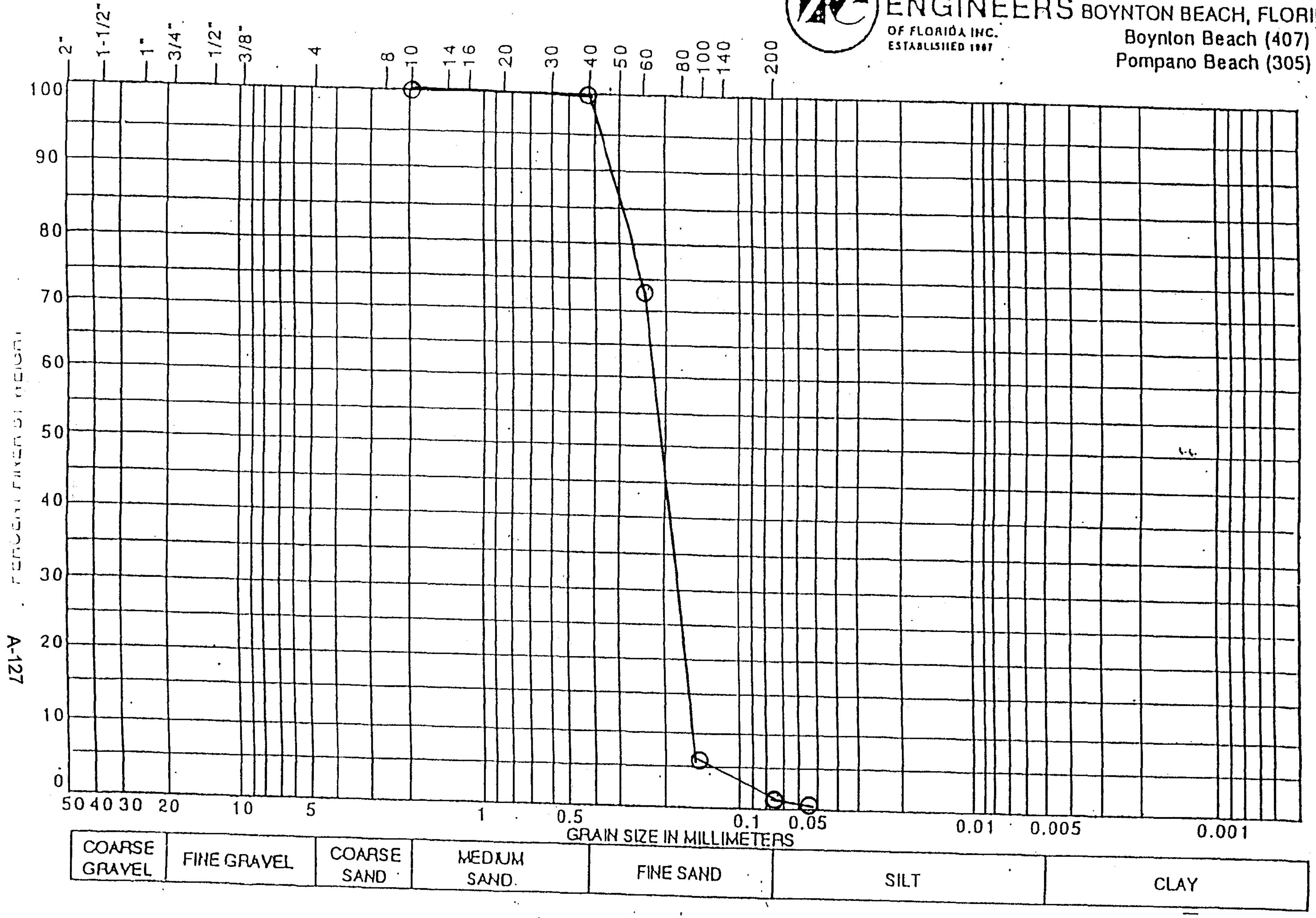

UNIFIED SOIL CLASSIFICATION

A-127

PROJECT W30SB01305 BOR NO. OR LOCATION SITE 30

DEPTH 22-24' MATERIAL DESCRIPTION

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CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	7
SITE:	33	**SAMPLE NO.:**	W33SB00602
		DATE:	8-14-98

DEPTH:	0 - 2 ft
SPECIFIC GRAVITY:	2.64
DRY BULK DENSITY:	1.53 g/cm^3
PERMEABILITY:	6.94×10^{-4} CM/S
WATER CONTENT:	9.3%
ATTERBERG LIMITS:	NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	98.7
No. 40	84.2
No. 60	55.2
No. 100	29.8
No. 200	15.9

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0586	10.3
0.0412	6.1
0.0201	5.5
0.0071	4.8

By: Ruf 8/14/98
R.C. Wohlfarth, P.E. #50858

R4708989

CTO 0028

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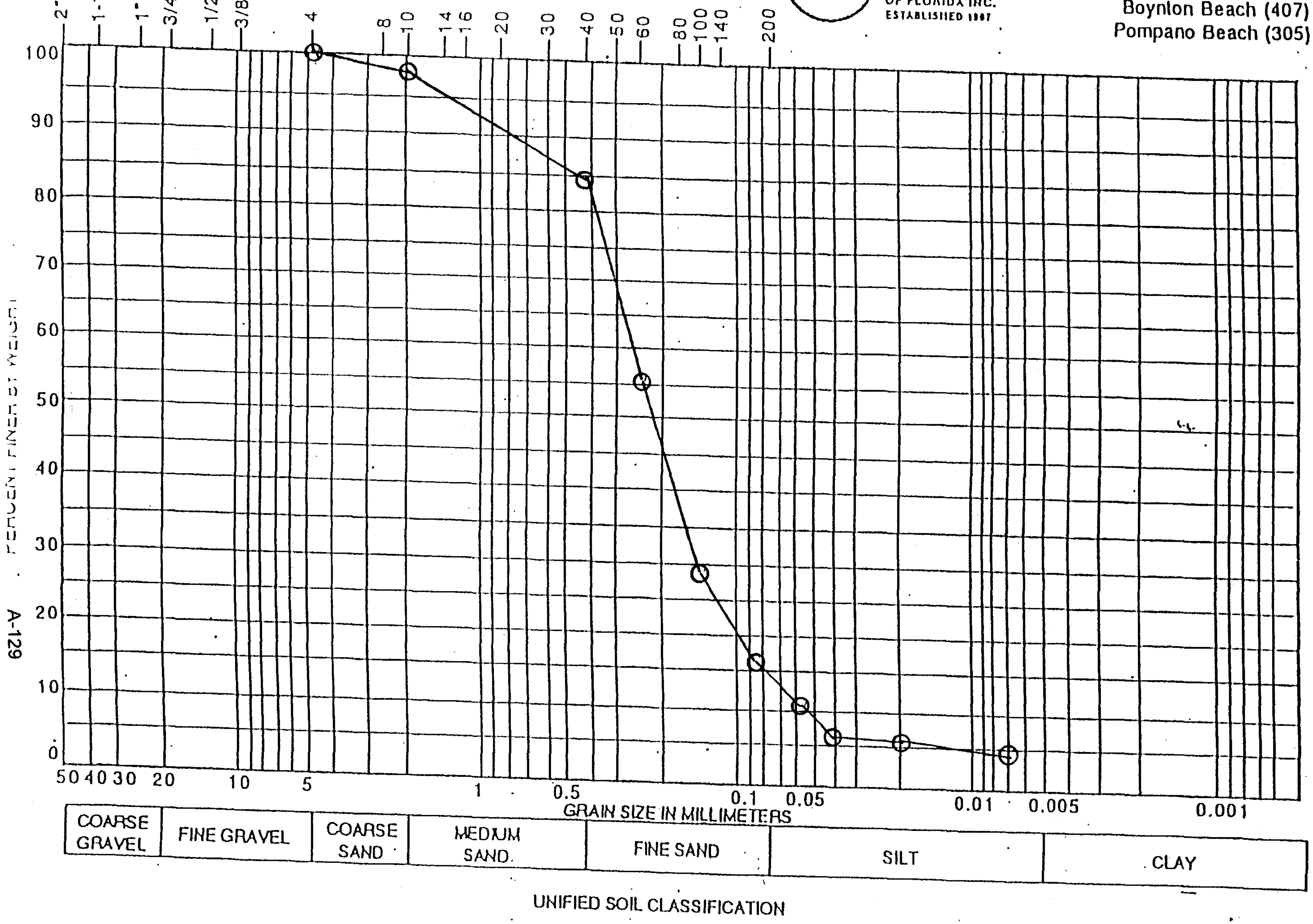

PROJEC W33SB00602 BORI NO. OR LOCATION SITE 33

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CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	8
SITE:	33	**SAMPLE NO.:**	W33SB00802
		DATE:	8-14-98

DEPTH:	16 - 18 ft
SPECIFIC GRAVITY:	2.66
DRY BULK DENSITY:	1.59 g/cm^3
PERMEABILITY:	1.02×10^{-5} CM/S
WATER CONTENT:	8.1%
ATTERBERG LIMITS:	NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	91.2
No. 60	69.2
No. 100	34.6
No. 200	9.7

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0487	7.8
0.0216	6.0
0.0069	3.2

By: Ruf 8/14/98
R.C. Wohlfarth, P.E. #50858

R4708989

CTO 0028

NUTTING
ENGINEERS
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1310 NEPTUNE DRIVE
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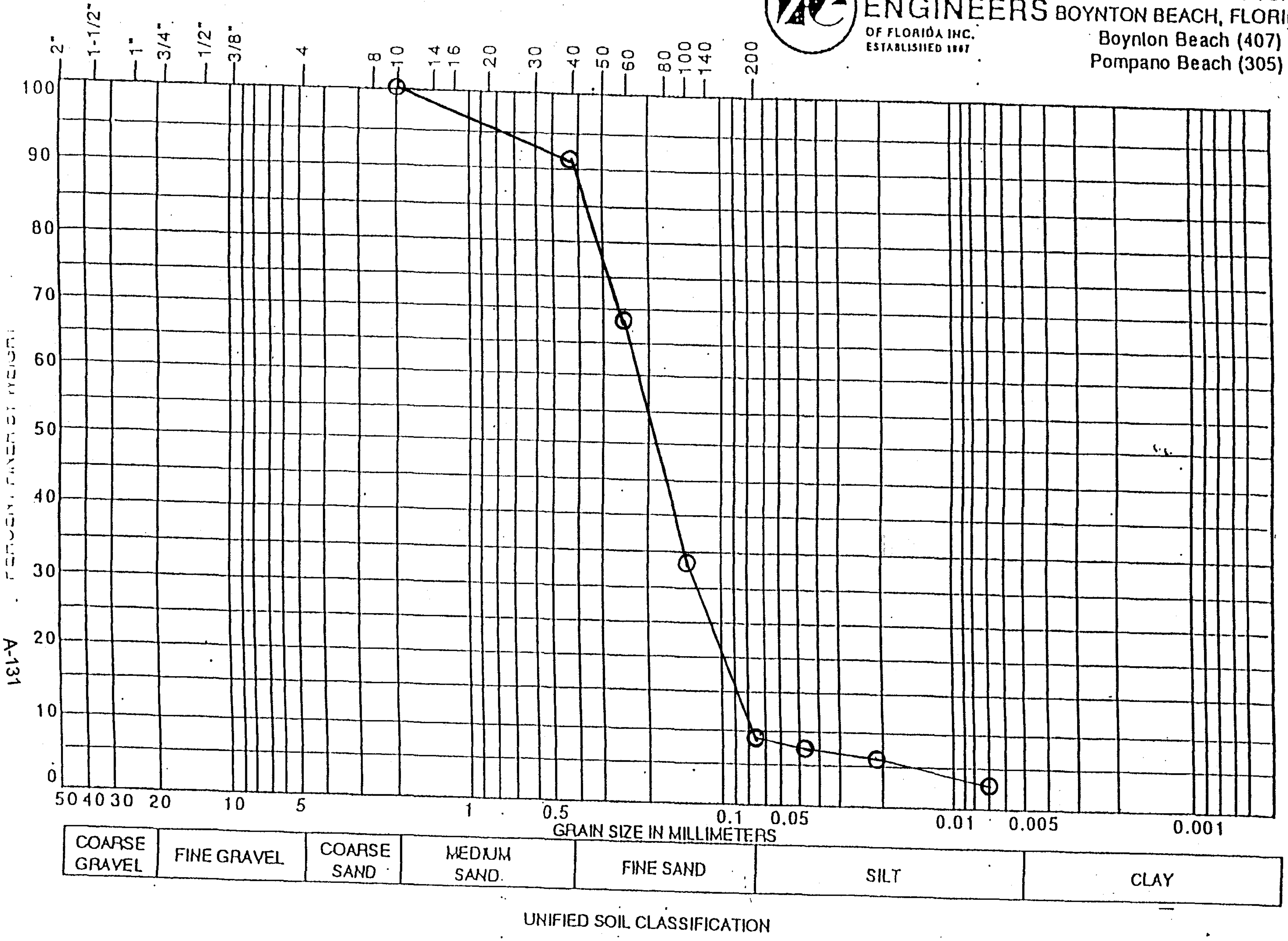
Pompano Beach (305) 941-8700



A-131

PROJECT W33SB00802 BORING NO. OR LOCATION SITE 33

Rev. 1
5/4/99

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CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	9
SITE:	33	**SAMPLE NO.:**	W33SB00803
		DATE:	8-14-98

DEPTH:	28 - 30^{ft}
SPECIFIC GRAVITY:	2.65
DRY BULK DENSITY:	1.63 g/cm^3
PERMEABILITY:	7.82×10^{-4} CM/S
WATER CONTENT:	8.9%
ATTERBERG LIMITS:	NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	83.8
No. 60	53.3
No. 100	24.7
No. 200	9.7

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0428	7.5
0.0117	5.0
0.0043	4.6

By: Rw 8/14/98
R.C. Wohlfarth, P.E. #50858

R4708989

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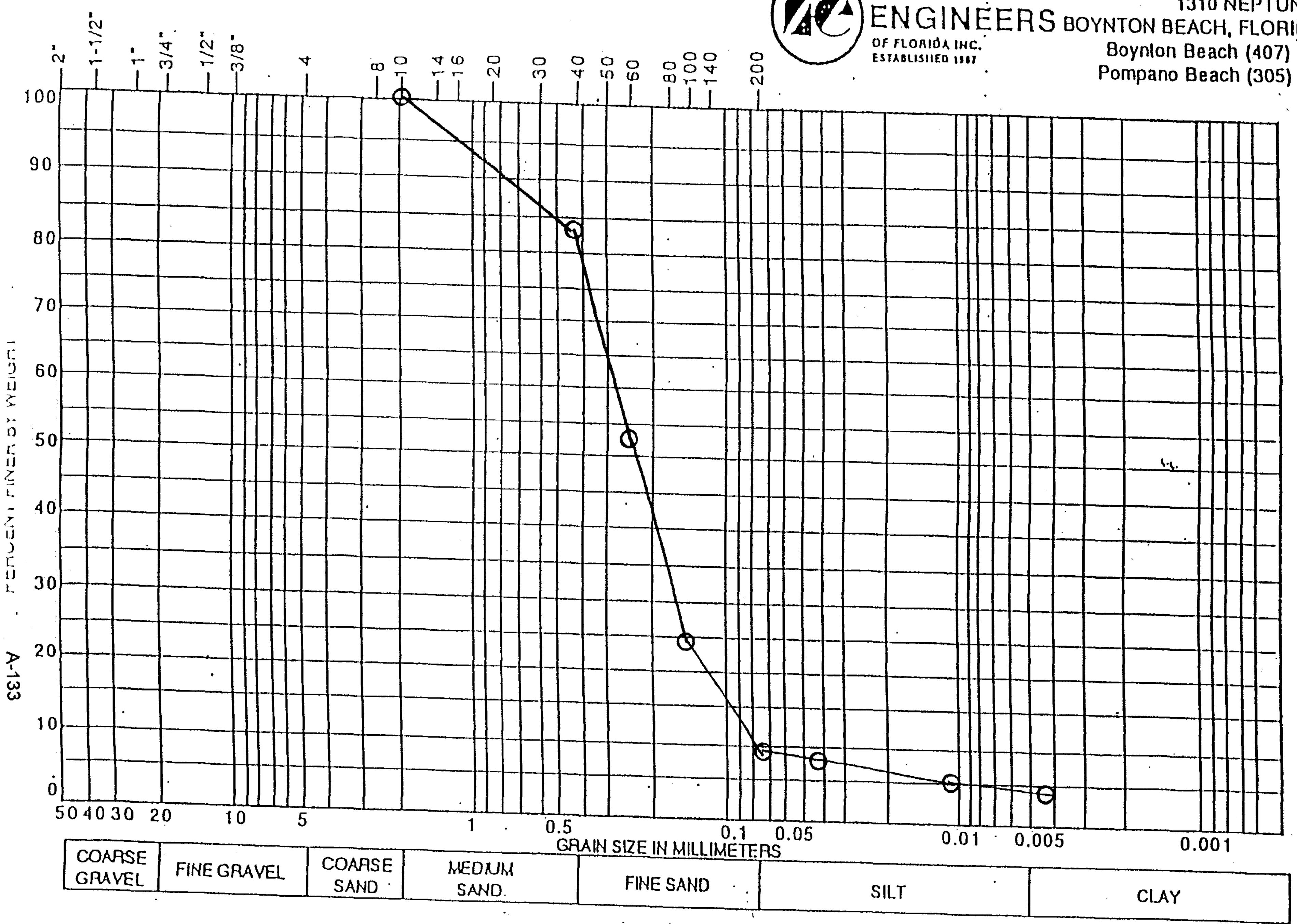

UNIFIED SOIL CLASSIFICATION

A-133

PROJECT W33SB00803 BORING NO. OR LOCATION SITE 33

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CLIENT: Tetra Tech Nus
PROJECT: Nas, Whiting Field, Milton, FL
SITE: 04

ORDER NO.: 11487.1
REPORT NO.: 10
SAMPLE NO.: W04SB01002
DATE: 8-14-98

DEPTH: 18 - 20^{ft}
SPECIFIC GRAVITY: 2.62
DRY BULK DENSITY: 1.69 g/cm^3
PERMEABILITY: 3.93×10^{-7} CM/S
WATER CONTENT: 29.4%
ATTERBERG LIMITS: PL 26.4 LL 41.2 PI 14.8

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	96.7
No. 60	90.4
No. 100	64.2
No. 200	48.1

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0483	44.9
0.0321	40.7
0.0130	39.8
0.0033	35.9

By: RCW 8/14/98
R.C. Wohlfarth, P.E. #50858

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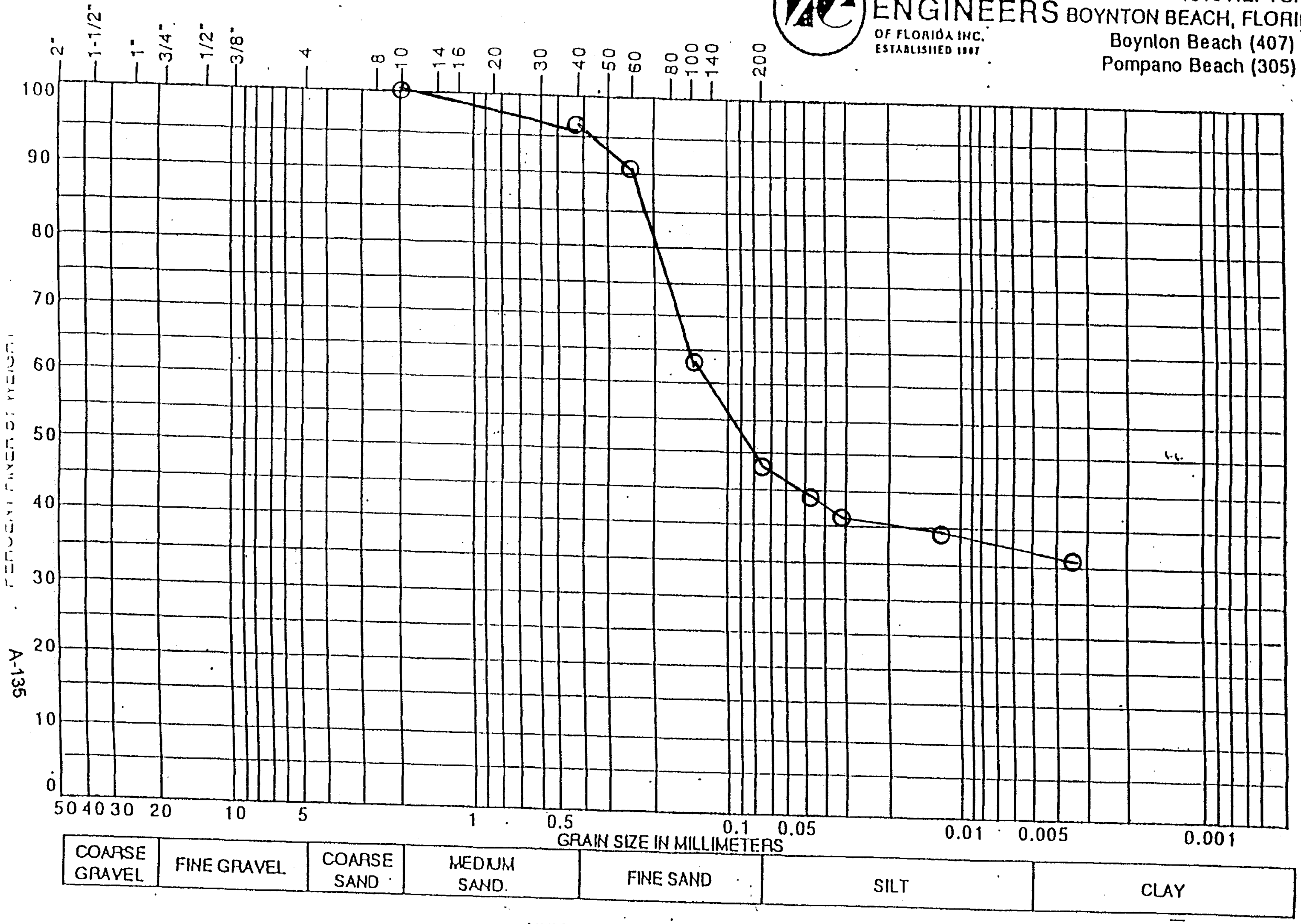

A-135

UNIFIED SOIL CLASSIFICATION

PROJECT W04SB01002 BORING NO. OR LOCATION SITE 04

NUTTING ENGINEERS
OF FLORIDA INC.
ESTABLISHED 1967

Geotechnical & Construction Materials
Hydrogeology & Monitoring Wells
Engineering • Inspection • Testing

CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	11
SITE:	04	**SAMPLE NO.:**	W04SB09003
		DATE:	8-14-98

DEPTH:	28 - 30^{ft}
SPECIFIC GRAVITY:	2.64
DRY BULK DENSITY:	1.56 g/cm^3
PERMEABILITY:	4.29×10^{-3} CM/S
WATER CONTENT:	8.8%
ATTERBERG LIMITS:	NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	**SIEVE ANALYSIS PASSING %**
No. 4	100
No. 10	98.8
No. 40	54.8
No. 60	20.1
No. 100	8.3
No. 200	3.1

HYDROMETER ANALYSIS

SIEVE ANALYSIS	**% FINER**
0.0333	1.8
0.0075	1.0

By: Rcw 8/14/98
R.C. Wohlfarth, P.E. #50858

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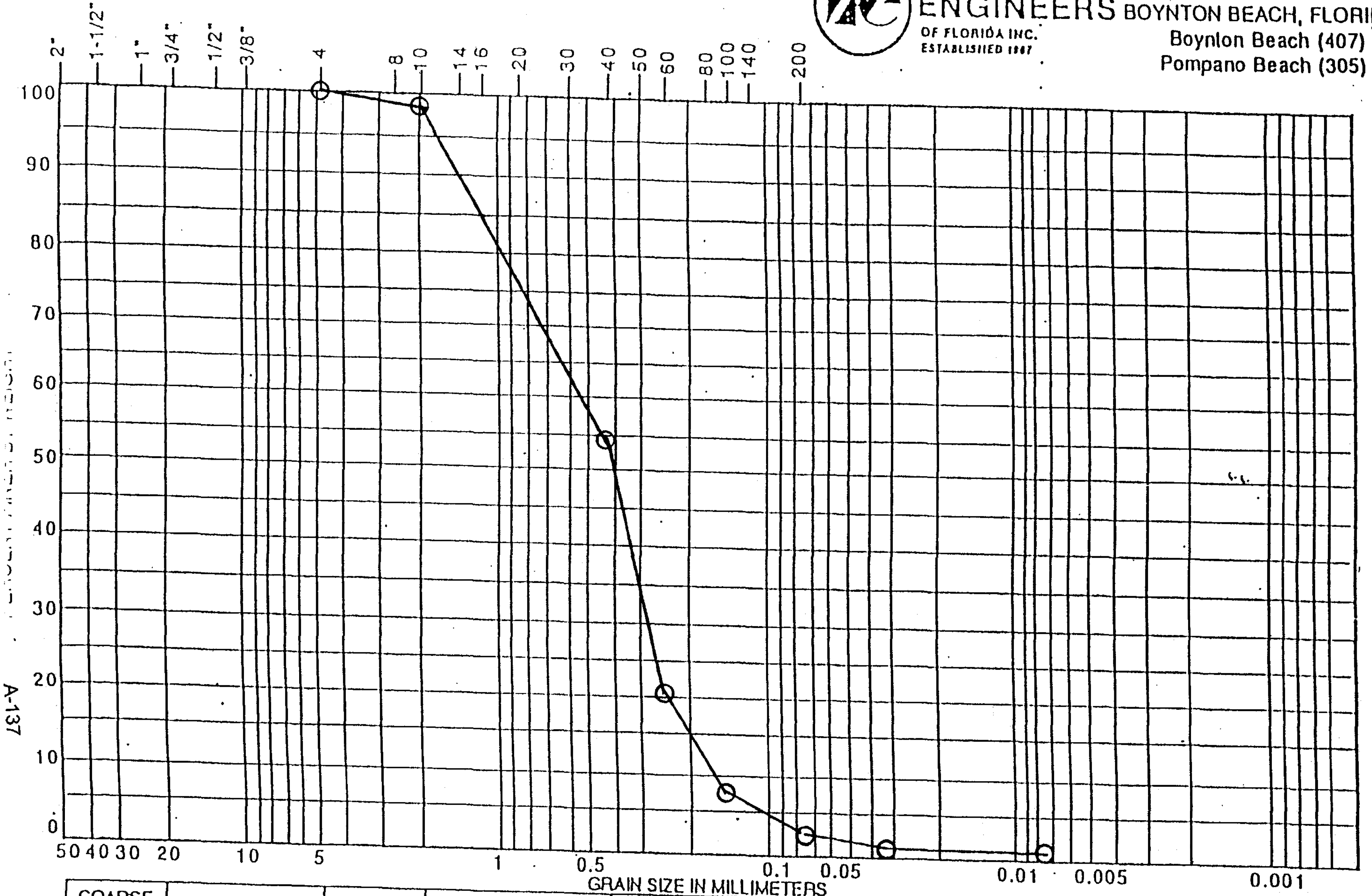

COARSE GRAVEL	FINE GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	SILT	CLAY

UNIFIED SOIL CLASSIFICATION

PROJEC W04SB09003 BORI .O. OR LOCATION SITE 04

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CLIENT: Tetra Tech Nus
PROJECT: Nas, Whiting Field, Milton, FL
SITE: 04

ORDER NO.: 11487.1
REPORT NO.: 12
SAMPLE NO.: W04SB01005
DATE: 8-14-98

DEPTH: 45 - 47 ft
SPECIFIC GRAVITY: 2.65
DRY BULK DENSITY: 1.58 g/cm^3
PERMEABILITY: 1.12×10^{-4} CM/S
WATER CONTENT: 7.4%
ATTERBERG LIMITS: NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	75.9
No. 60	24.7
No. 100	10.6
No. 200	6.3

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0478	5.6
0.0134	5.3
0.0040	3.9

By: RCW 8/14/98
R.C. Wohlfarth, P.E. #50858

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CTO 0028

1310 NEPTUNE DRIVE • BOYNTON BEACH, FLORIDA 33426
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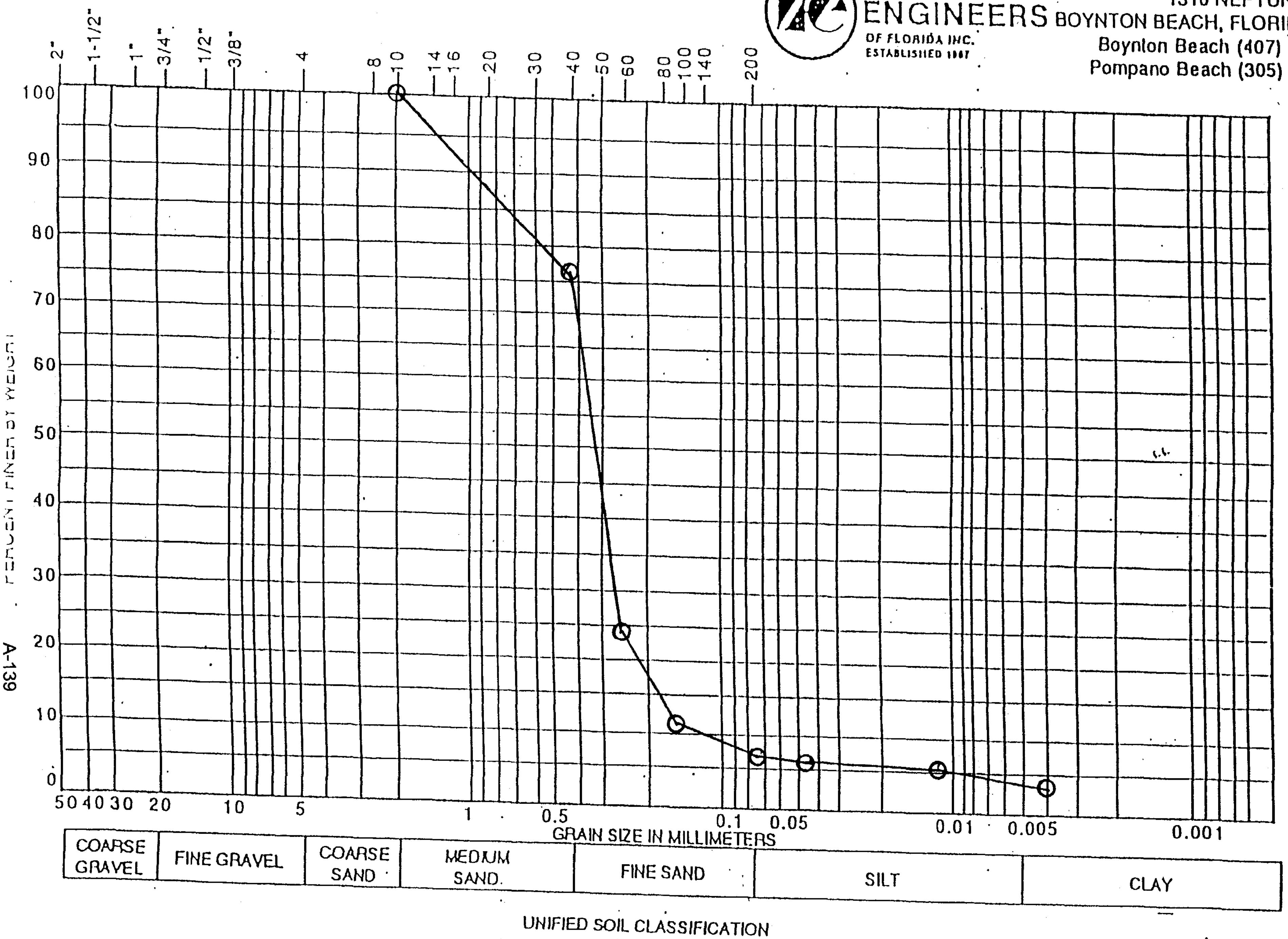

A-139

PROJEC W045B1005 BORI NO. OR LOCATION SITE 04

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CLIENT:	Tetra Tech Nus	ORDER NO.:	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	REPORT NO.:	13
SITE:	32	SAMPLE NO.:	W32SB01501
		DATE:	8-14-98

DEPTH:	12 - 14^{ft}
SPECIFIC GRAVITY:	2.63
DRY BULK DENSITY:	1.69 g/cm^3
PERMEABILITY:	$5.76x\ 10^{-7}$ $^{CM}/S$
WATER CONTENT:	19.9%
ATTERBERG LIMITS:	PL 14.0 LL 32.4 PI 18.4

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	100
No. 40	91.9
No. 60	81.1
No. 100	58.1
No. 200	35.7

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0055	32.7
0.0292	30.8
0.0072	30.0
0.0049	29.7

By: RCW 8/14/98
R.C. Wohlfarth, P.E. #50858

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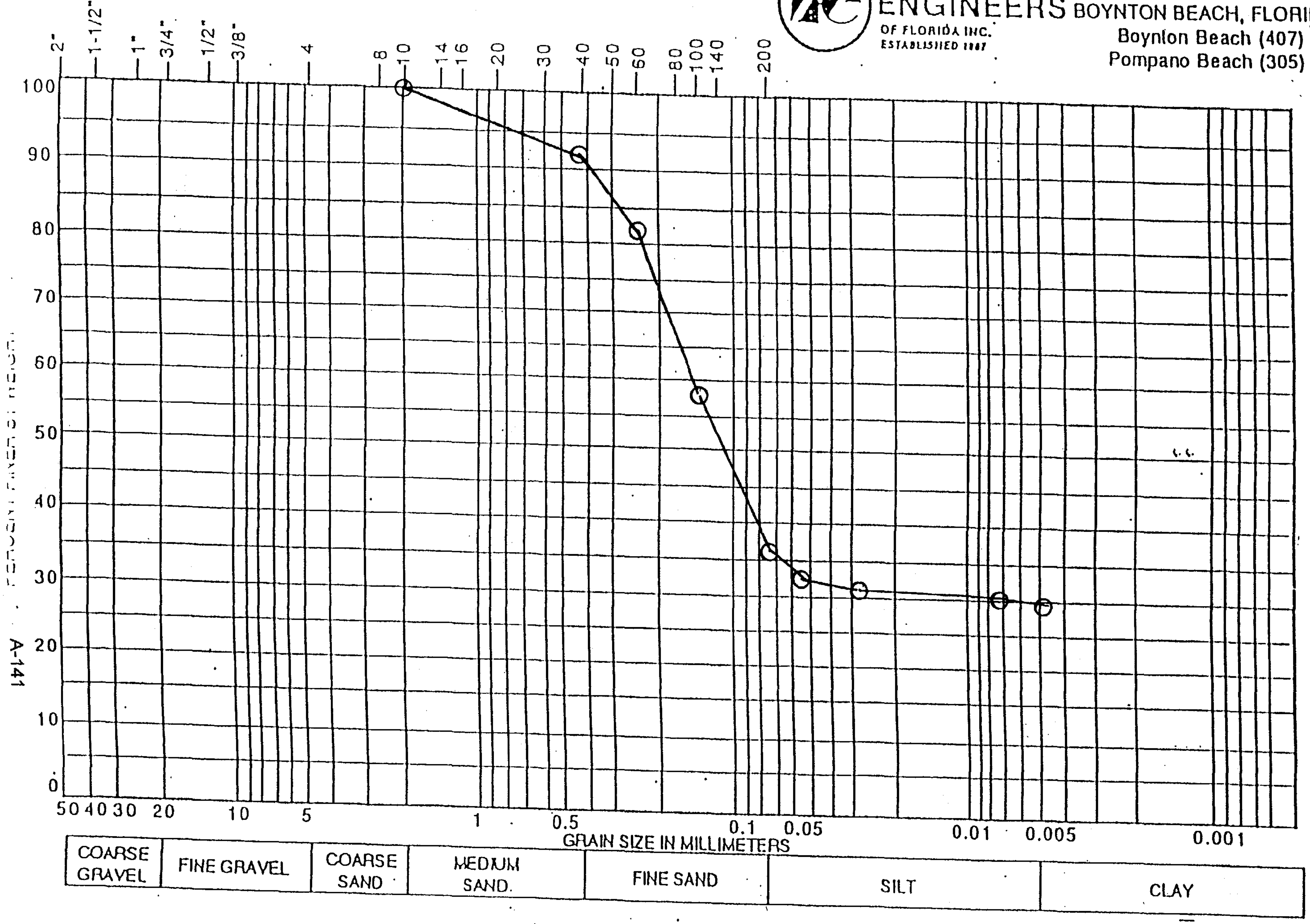

UNIFIED SOIL CLASSIFICATION

PROJEC W32SB01501 BORI. IO. OR LOCATION SITE 32

NUTTING ENGINEERS
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ESTABLISHED 1967

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Hydrogeology & Monitoring Wells
Engineering • Inspection • Testing

CLIENT:	Tetra Tech Nus	**ORDER NO.:**	11487.1
PROJECT:	Nas, Whiting Field, Milton, FL	**REPORT NO.:**	14
SITE:	32	**SAMPLE NO.:**	W32SB01503
		DATE:	8-14-98

DEPTH:	26 - 28^{ft}
SPECIFIC GRAVITY:	2.61
DRY BULK DENSITY:	1.64 g/cm^3
PERMEABILITY:	3.98x 10^{-6} CM/S
WATER CONTENT:	14.6%
ATTERBERG LIMITS:	NP

PARTICLE SIZE ANALYSIS

SIEVE ANALYSIS	SIEVE ANALYSIS PASSING %
No. 4	100
No. 10	97.5
No. 40	68.6
No. 60	35.4
No. 100	19.7
No. 200	15.9

HYDROMETER ANALYSIS

SIEVE ANALYSIS	% FINER
0.0464	15.6
0.0146	14.3
0.0043	13.8

By: Rcw 8/14/98
R.C. Wohlfarth, P.E. #50858

R4708989

CTO 0028

NUTTING ENGINEERS OF FLORIDA INC.
ESTABLISHED 1967

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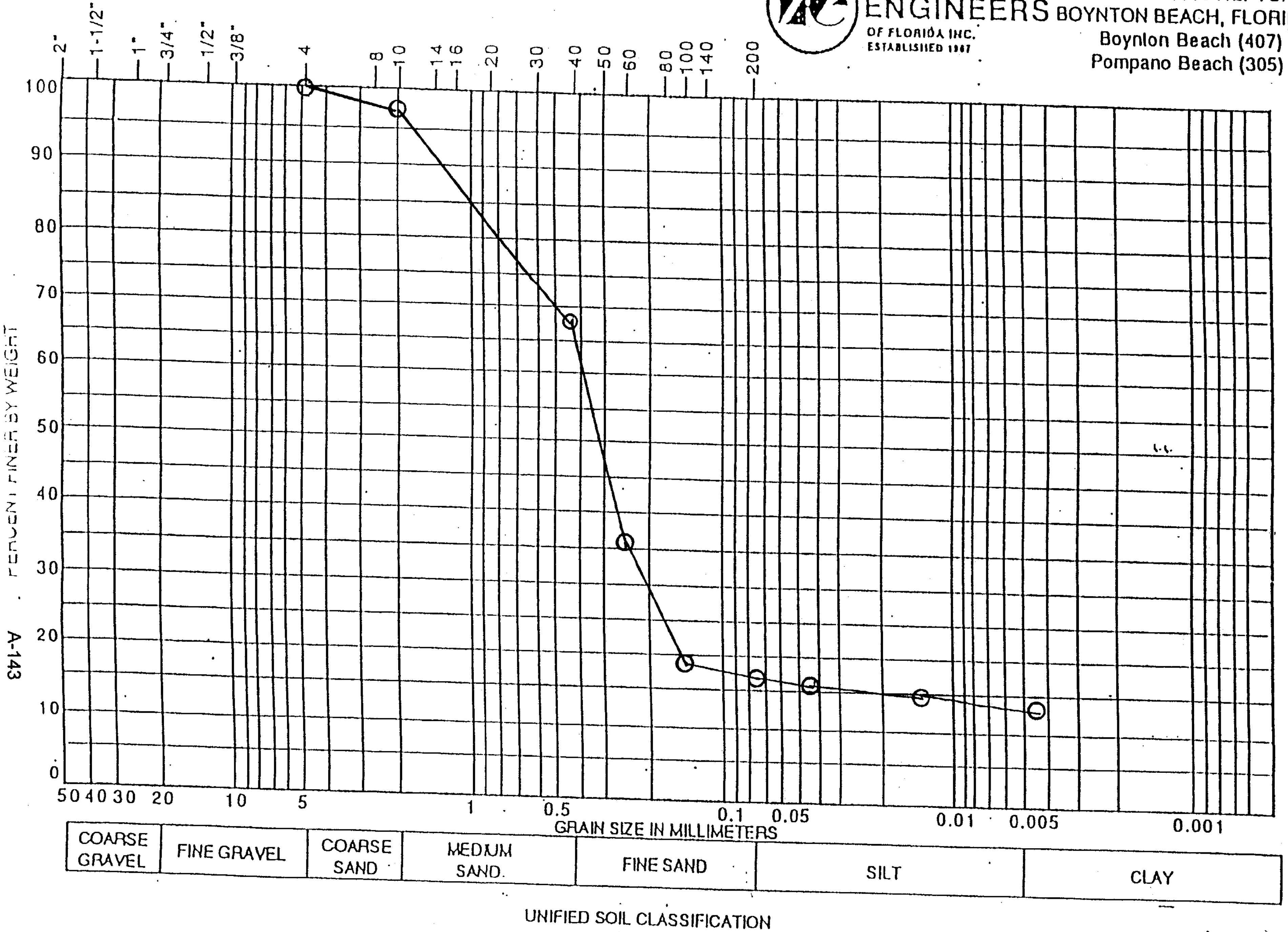

A-143

PROJECT W32SB01503 BORING NO. OR LOCATION SITE 32

APPENDIX B

QUALITY CONTROL DATA

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W03TB00100	W03TB00200	03SBFB01	03SBTB01	W04FB00200	W04RB00200	W04TB00101
SITE	3	3	3	3	4	4	4
DATE SAMPLED	3/2/98	3/398	1/18/93	1/18/93	2/25/98	2/25/98	2/18/98
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES							
1,1,1-TRICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,1,2,2-TETRACHLOROETHANE	0.2 U UG/L	0.2 U UG/L	10 U ug/l	10 U ug/l	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L
1,1,2-TRICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,1-DICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,1-DICHLOROETHENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROETHENE (TOTAL)	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROPROPANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
2-BUTANONE	1.0 UR UG/L	1.0 UR UG/L	10 U ug/l	10 U ug/l	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L
2-HEXANONE	1.0 U UG/L	1.0 UJ UG/L	10 U ug/l	10 U ug/l	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
4-METHYL-2-PENTANONE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
ACETONE	1.0 UR UG/L	1.0 UR UG/L	10 U ug/l	10 U ug/l	4.0 J UG/L	5.0 J UG/L	1.0 UR UG/L
BENZENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
BROMODICHLOROMETHANE	0.6 U UG/L	0.6 U UG/L	10 U ug/l	10 U ug/l	0.8 UG/L	0.6 U UG/L	0.6 U UG/L
BROMOFORM	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
BROMOMETHANE	1.0 UJ UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L
CARBON DISULFIDE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	0.3 J UG/L	1.0 U UG/L
CARBON TETRACHLORIDE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROBENZENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 UJ ug/l	10 UJ ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROFORM	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 ug/l	0.8 J UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROMETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CIS-1,3-DICHLOROPROPENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
DIBROMOCHLOROMETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	0.8 J UG/L	1.0 U UG/L	1.0 U UG/L
ETHYLBENZENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
METHYL TERT-BUTYL ETHER	1.0 U UG/L	1.0 U UG/L			1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
METHYLENE CHLORIDE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	4 J ug/l	1.0 U UG/L	1.0 U UG/L	2.0 U UG/L
STYRENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
TETRACHLOROETHENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
TOLUENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
TRANS-1,3-DICHLOROPROPENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
TRICHLOROETHENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	0.2 J UG/L	1.0 U UG/L	1.0 U UG/L

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W03TB00100 3 3/2/98	W03TB00200 3 3/398	03SBFB01 3 1/18/93	03SBTB01 3 1/18/93	W04FB00200 4 2/25/98	W04RB00200 4 2/25/98	W04TB00101 4 2/18/98
VINYL CHLORIDE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
XYLENES, TOTAL	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
SEMIVOLATILES							
1,2,4-TRICHLOROBENZENE						10 U UG/L	10 U UG/L
1,2-DICHLOROBENZENE						3 J UG/L	10 U UG/L
1,3-DICHLOROBENZENE						10 U UG/L	10 U UG/L
1,4-DICHLOROBENZENE						10 U UG/L	10 U UG/L
2,2'-OXYBIS(1-CHLOROPROPANE)						10 U UG/L	10 U UG/L
2,4,5-TRICHLOROPHENOL						8 U UG/L	8 U UG/L
2,4,6-TRICHLOROPHENOL						10 U UG/L	10 U UG/L
2,4-DICHLOROPHENOL						8 U UG/L	8 U UG/L
2,4-DIMETHYLPHENOL						10 U UG/L	10 U UG/L
2,4-DINITROPHENOL						10 U UG/L	10 U UG/L
2,4-DINITROTOLUENE						0.4 U UG/L	0.4 U UG/L
2,6-DINITROTOLUENE						0.4 U UG/L	0.4 U UG/L
2-CHLORONAPHTHALENE						10 U UG/L	10 U UG/L
2-CHLOROPHENOL						10 U UG/L	10 U UG/L
2-METHYLNAPHTHALENE						10 U UG/L	10 U UG/L
2-METHYLPHENOL						10 U UG/L	10 U UG/L
2-NITROANILINE						10 U UG/L	10 U UG/L
2-NITROPHENOL						10 U UG/L	10 U UG/L
3,3'-DICHLOROBENZIDINE						10 U UG/L	10 U UG/L
3-NITROANILINE						10 U UG/L	10 U UG/L
4,6-DINITRO-2-METHYLPHENOL						10 U UG/L	10 U UG/L
4-BROMOPHENYL PHENYL ETHER						10 U UG/L	10 U UG/L
4-CHLORO-3-METHYLPHENOL						10 U UG/L	10 U UG/L
4-CHLOROANILINE						10 U UG/L	10 U UG/L
4-CHLOROPHENYL PHENYL ETHER						10 U UG/L	10 U UG/L
4-METHYLPHENOL						10 U UG/L	10 U UG/L
4-NITROANILINE						10 U UG/L	10 U UG/L
4-NITROPHENOL						10 U UG/L	10 U UG/L
ACENAPHTHENE						10 U UG/L	10 U UG/L
ACENAPHTHYLENE						10 U UG/L	10 U UG/L
ANTHRACENE						10 U UG/L	10 U UG/L

Blanl :e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W03TB00100	W03TB00200	03SBFB01	03SBTB01	W04FB00200	W04RB00200	W04TB00101
SITE	3	3	3	3	4	4	4
DATE SAMPLED	3/2/98	3/398	1/18/93	1/18/93	2/25/98	2/25/98	2/18/98
BENZO(A)ANTHRACENE						8 U UG/L	8 U UG/L
BENZO(A)PYRENE						0.4 U UG/L	0.4 U UG/L
BENZO(B)FLUORANTHENE						8 U UG/L	8 U UG/L
BENZO(G,H,I)PERYLENE						10 U UG/L	10 U UG/L
BENZO(K)FLUORANTHENE						8 U UG/L	8 U UG/L
BIS(2-CHLOROETHOXY)METHANE						10 U UG/L	10 U UG/L
BIS(2-CHLOROETHYL)ETHER						2 U UG/L	2 U UG/L
BIS(2-ETHYLHEXYL)PHTHALATE						4 J UG/L	2 J UG/L
BUTYLBENZYL PHTHALATE						10 U UG/L	10 U UG/L
CARBAZOLE						10 U UG/L	10 U UG/L
CHRYSENE						10 U UG/L	10 U UG/L
DI-N-BUTYL PHTHALATE						2 J UG/L	1 J UG/L
DI-N-OCTYL PHTHALATE						10 U UG/L	10 U UG/L
DIBENZO(A,H)ANTHRACENE						10 U UG/L	10 U UG/L
DIBENZOFURAN						10 U UG/L	10 U UG/L
DIETHYL PHTHALATE						10 U UG/L	10 U UG/L
DIMETHYL PHTHALATE						10 U UG/L	10 U UG/L
FLUORANTHENE						10 U UG/L	10 U UG/L
FLUORENE						10 U UG/L	10 U UG/L
HEXACHLOROBENZENE						2 U UG/L	2 U UG/L
HEXACHLOROBUTADIENE						10 U UG/L	10 U UG/L
HEXACHLOROCYCLOPENTADIENE						10 UJ UG/L	10 UJ UG/L
HEXACHLOROETHANE						10 U UG/L	10 U UG/L
INDENO(1,2,3-CD)PYRENE						10 U UG/L	10 U UG/L
ISOPHORONE						10 U UG/L	10 U UG/L
N-NITROSO-DI-N-PROPYLAMINE						8 U UG/L	8 U UG/L
N-NITROSODIPHENYLAMINE						10 U UG/L	10 U UG/L
NAPHTHALENE						10 U UG/L	10 U UG/L
NITROBENZENE						10 U UG/L	10 U UG/L
PENTACHLOROPHENOL						2 U UG/L	2 U UG/L
PHENANTHRENE						10 U UG/L	10 U UG/L
PHENOL						10 U UG/L	10 U UG/L
PYRENE						10 U UG/L	10 U UG/L
PESTICIDES/PCBs							

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W03TB00100 3 3/2/98	W03TB00200 3 3/398	03SBFB01 3 1/18/93	03SBTB01 3 1/18/93	W04FB00200 4 2/25/98	W04RB00200 4 2/25/98	W04TB00101 4 2/18/98
4,4'-DDD						0.20 U UG/L	0.21 U UG/L
4,4'-DDE						0.20 U UG/L	0.21 U UG/L
4,4'-DDT						0.20 U UG/L	0.21 U UG/L
ALDRIN						0.10 U UG/L	0.10 U UG/L
ALPHA-BHC						0.10 U UG/L	0.10 U UG/L
ALPHA-CHLORDANE						0.10 U UG/L	0.10 U UG/L
AROCLOR-1016						2.0 U UG/L	2.1 U UG/L
AROCLOR-1221						4.1 U UG/L	4.2 U UG/L
AROCLOR-1232						2.0 U UG/L	2.1 U UG/L
AROCLOR-1242						2.0 U UG/L	2.1 U UG/L
AROCLOR-1248						2.0 U UG/L	2.1 U UG/L
AROCLOR-1254						2.0 U UG/L	2.1 U UG/L
AROCLOR-1260						2.0 U UG/L	2.1 U UG/L
BETA-BHC						0.10 U UG/L	0.10 U UG/L
DELTA-BHC						0.10 U UG/L	0.10 U UG/L
DIELDRIN						0.20 U UG/L	0.21 U UG/L
ENDOSULFAN I						0.10 U UG/L	0.10 U UG/L
ENDOSULFAN II						0.20 U UG/L	0.21 U UG/L
ENDOSULFAN SULFATE						0.20 U UG/L	0.21 U UG/L
ENDRIN						0.20 U UG/L	0.21 U UG/L
ENDRIN ALDEHYDE						0.20 U UG/L	0.21 U UG/L
ENDRIN KETONE						0.20 U UG/L	0.21 U UG/L
GAMMA-BHC (LINDANE)						0.10 U UG/L	0.10 U UG/L
GAMMA-CHLORDANE						0.10 U UG/L	0.10 U UG/L
HEPTACHLOR						0.10 U UG/L	0.10 U UG/L
HEPTACHLOR EPOXIDE						0.10 U UG/L	0.10 U UG/L
METHOXYCHLOR						1.0 U UG/L	1.0 U UG/L
TOXAPHENE						10 U UG/L	10 U UG/L
PETROLEUM HYDROCARBONS							
TOTAL PETROLEUM HYDROCARBONS						0.5 U MG/L	0.5 U MG/L
TPH (C8-C40)							
INORGANICS							
ALUMINUM						260 UG/L	200 U UG/L
ANTIMONY						5.0 U UG/L	5.0 U UG/L

Blan[illegible]e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W03TB00100 3 3/2/98	W03TB00200 3 3/398	03SBFB01 3 1/18/93	03SBTB01 3 1/18/93	W04FB00200 4 2/25/98	W04RB00200 4 2/25/98	W04TB00101 4 2/18/98
ARSENIC						10.0 U UG/L	10.0 U UG/L
BARIUM						18.2 UG/L	10.0 U UG/L
BERYLLIUM						3.0 U UG/L	3.0 U UG/L
CADMIUM						3.0 U UG/L	3.0 U UG/L
CALCIUM						4980 UG/L	1000 U UG/L
CHROMIUM						5.0 U UG/L	5.0 U UG/L
COBALT						5.0 U UG/L	5.0 U UG/L
COPPER						5.6 UG/L	5.0 U UG/L
CYANIDE							
IRON						238 UG/L	100 U UG/L
LEAD						4.7 UG/L	3.0 U UG/L
MAGNESIUM						673 UG/L	64.2 U UG/L
MANGANESE						8.3 UG/L	5.0 U UG/L
MERCURY						0.20 U UG/L	0.20 U UG/L
NICKEL						5.0 U UG/L	5.0 U UG/L
POTASSIUM						309 UG/L	65.7 UG/L
SELENIUM						5.0 U UG/L	5.0 U UG/L
SILVER						3.0 U UG/L	3.0 U UG/L
SODIUM						31900 UG/L	500 U UG/L
THALLIUM						10.0 U UG/L	10.0 U UG/L
VANADIUM						5.0 U UG/L	5.0 U UG/L
ZINC						139 UG/L	10.0 U UG/L

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04TB00101 4 2/20/98	W04TB00200 4 2/21/98	W04TB00300 4 2/23/98	W04TB00400 4 2/25/98	W04TB00500 4 3/11/98	W04TB00500 4 3/24/98
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES						
1,1,1-TRICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
1,1,2,2-TETRACHLOROETHANE	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L
1,1,2-TRICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
1,1-DICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
1,1-DICHLOROETHENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
1,2-DICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
1,2-DICHLOROETHENE (TOTAL)	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
1,2-DICHLOROPROPANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
2-BUTANONE	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1 UR UG/L
2-HEXANONE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 UJ UG/L	1 UJ UG/L
4-METHYL-2-PENTANONE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
ACETONE	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1 UR UG/L
BENZENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
BROMODICHLOROMETHANE	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L
BROMOFORM	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
BROMOMETHANE	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1 U UG/L
CARBON DISULFIDE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
CARBON TETRACHLORIDE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 UJ UG/L	1 U UG/L
CHLOROBENZENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
CHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
CHLOROFORM	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
CHLOROMETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
CIS-1,3-DICHLOROPROPENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
DIBROMOCHLOROMETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
ETHYLBENZENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
METHYL TERT-BUTYL ETHER	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 UJ UG/L
METHYLENE CHLORIDE	2.0 U UG/L	2.0 U UG/L	2.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
STYRENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
TETRACHLOROETHENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
TOLUENE	1.0 U UG/L	0.3 J UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
TRANS-1,3-DICHLOROPROPENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 UJ UG/L
TRICHLOROETHENE	0.2 J UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L

Blan' ;e indicates chemical not analyzed.

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APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04TB00101 4 2/20/98	W04TB00200 4 2/21/98	W04TB00300 4 2/23/98	W04TB00400 4 2/25/98	W04TB00500 4 3/11/98	W04TB00500 4 3/24/98
VINYL CHLORIDE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
XYLENES, TOTAL	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1 U UG/L
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE						
1,2-DICHLOROBENZENE						
1,3-DICHLOROBENZENE						
1,4-DICHLOROBENZENE						
2,2'-OXYBIS(1-CHLOROPROPANE)						
2,4,5-TRICHLOROPHENOL						
2,4,6-TRICHLOROPHENOL						
2,4-DICHLOROPHENOL						
2,4-DIMETHYLPHENOL						
2,4-DINITROPHENOL						
2,4-DINITROTOLUENE						
2,6-DINITROTOLUENE						
2-CHLORONAPHTHALENE						
2-CHLOROPHENOL						
2-METHYLNAPHTHALENE						
2-METHYLPHENOL						
2-NITROANILINE						
2-NITROPHENOL						
3,3'-DICHLOROBENZIDINE						
3-NITROANILINE						
4,6-DINITRO-2-METHYLPHENOL						
4-BROMOPHENYL PHENYL ETHER						
4-CHLORO-3-METHYLPHENOL						
4-CHLOROANILINE						
4-CHLOROPHENYL PHENYL ETHER						
4-METHYLPHENOL						
4-NITROANILINE						
4-NITROPHENOL						
ACENAPHTHENE						
ACENAPHTHYLENE						
ANTHRACENE						

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04TB00101 4 2/20/98	W04TB00200 4 2/21/98	W04TB00300 4 2/23/98	W04TB00400 4 2/25/98	W04TB00500 4 3/11/98	W04TB00500 4 3/24/98
BENZO(A)ANTHRACENE						
BENZO(A)PYRENE						
BENZO(B)FLUORANTHENE						
BENZO(G,H,I)PERYLENE						
BENZO(K)FLUORANTHENE						
BIS(2-CHLOROETHOXY)METHANE						
BIS(2-CHLOROETHYL)ETHER						
BIS(2-ETHYLHEXYL)PHTHALATE						
BUTYLBENZYL PHTHALATE						
CARBAZOLE						
CHRYSENE						
DI-N-BUTYL PHTHALATE						
DI-N-OCTYL PHTHALATE						
DIBENZO(A,H)ANTHRACENE						
DIBENZOFURAN						
DIETHYL PHTHALATE						
DIMETHYL PHTHALATE						
FLUORANTHENE						
FLUORENE						
HEXACHLOROBENZENE						
HEXACHLOROBUTADIENE						
HEXACHLOROCYCLOPENTADIENE						
HEXACHLOROETHANE						
INDENO(1,2,3-CD)PYRENE						
ISOPHORONE						
N-NITROSO-DI-N-PROPYLAMINE						
N-NITROSODIPHENYLAMINE						
NAPHTHALENE						
NITROBENZENE						
PENTACHLOROPHENOL						
PHENANTHRENE						
PHENOL						
PYRENE						
PESTICIDES/PCBs						

Blan ce indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04TB00101 4 2/20/98	W04TB00200 4 2/21/98	W04TB00300 4 2/23/98	W04TB00400 4 2/25/98	W04TB00500 4 3/11/98	W04TB00500 4 3/24/98
4,4'-DDD						
4,4'-DDE						
4,4'-DDT						
ALDRIN						
ALPHA-BHC						
ALPHA-CHLORDANE						
AROCLOR-1016						
AROCLOR-1221						
AROCLOR-1232						
AROCLOR-1242						
AROCLOR-1248						
AROCLOR-1254						
AROCLOR-1260						
BETA-BHC						
DELTA-BHC						
DIELDRIN						
ENDOSULFAN I						
ENDOSULFAN II						
ENDOSULFAN SULFATE						
ENDRIN						
ENDRIN ALDEHYDE						
ENDRIN KETONE						
GAMMA-BHC (LINDANE)						
GAMMA-CHLORDANE						
HEPTACHLOR						
HEPTACHLOR EPOXIDE						
METHOXYCHLOR						
TOXAPHENE						
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS						
TPH (C8-C40)						
INORGANICS						
ALUMINUM						
ANTIMONY						

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04TB00101 4 2/20/98	W04TB00200 4 2/21/98	W04TB00300 4 2/23/98	W04TB00400 4 2/25/98	W04TB00500 4 3/11/98	W04TB00500 4 3/24/98
ARSENIC						
BARIUM						
BERYLLIUM						
CADMIUM						
CALCIUM						
CHROMIUM						
COBALT						
COPPER						
CYANIDE						
IRON						
LEAD						
MAGNESIUM						
MANGANESE						
MERCURY						
NICKEL						
POTASSIUM						
SELENIUM						
SILVER						
SODIUM						
THALLIUM						
VANADIUM						
ZINC						

Blan ce indicates chemical not analyzed.

R4708989

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04TB00600 4 3/25/98	6SBRB04 6 12/4/92	6SBRB5 6 12/5/92	6SBTB4 6 12/4/92	6SBTB5 6 12/5/92	30SBFB01 30 1/4/93
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES						
1,1,1-TRICHLOROETHANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1,2,2-TETRACHLOROETHANE	0.2 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1,2-TRICHLOROETHANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1-DICHLOROETHANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1-DICHLOROETHENE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,2-DICHLOROETHANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
1,2-DICHLOROETHENE (TOTAL)	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
1,2-DICHLOROPROPANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2-BUTANONE	1.0 UR UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2-HEXANONE	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
4-METHYL-2-PENTANONE	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
ACETONE	1.0 UR UG/L	10 U ug/l	3 J ug/l	4 J ug/l	10 U ug/l	
BENZENE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BROMODICHLOROMETHANE	0.6 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BROMOFORM	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BROMOMETHANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CARBON DISULFIDE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CARBON TETRACHLORIDE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CHLOROBENZENE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CHLOROETHANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CHLOROFORM	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CHLOROMETHANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CIS-1,3-DICHLOROPROPENE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
DIBROMOCHLOROMETHANE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
ETHYLBENZENE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
METHYL TERT-BUTYL ETHER	1.0 UJ UG/L					
METHYLENE CHLORIDE	0.2 J UG/L	2 J ug/l	3 J ug/l	10 U ug/l	2 J ug/l	
STYRENE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
TETRACHLOROETHENE	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
TOLUENE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
TRANS-1,3-DICHLOROPROPENE	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
TRICHLOROETHENE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04TB00600 4 3/25/98	6SBRB04 6 12/4/92	6SBRB5 6 12/5/92	6SBTB4 6 12/4/92	6SBTB5 6 12/5/92	30SBFB01 30 1/4/93
VINYL CHLORIDE	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
XYLENES, TOTAL	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE		10 U ug/l	10 U ug/l			
1,2-DICHLOROBENZENE		10 U ug/l	10 U ug/l			
1,3-DICHLOROBENZENE		10 U ug/l	10 U ug/l			
1,4-DICHLOROBENZENE		10 U ug/l	10 U ug/l			
2,2'-OXYBIS(1-CHLOROPROPANE)						
2,4,5-TRICHLOROPHENOL		25 U ug/l	25 U ug/l			
2,4,6-TRICHLOROPHENOL		10 U ug/l	10 U ug/l			
2,4-DICHLOROPHENOL		10 U ug/l	10 U ug/l			
2,4-DIMETHYLPHENOL		10 U ug/l	10 U ug/l			
2,4-DINITROPHENOL		25 U ug/l	25 U ug/l			
2,4-DINITROTOLUENE		10 U ug/l	10 U ug/l			
2,6-DINITROTOLUENE		10 U ug/l	10 U ug/l			
2-CHLORONAPHTHALENE		10 U ug/l	10 U ug/l			
2-CHLOROPHENOL		10 U ug/l	10 U ug/l			
2-METHYLNAPHTHALENE		10 U ug/l	10 U ug/l			
2-METHYLPHENOL		10 U ug/l	10 U ug/l			
2-NITROANILINE		25 U ug/l	25 U ug/l			
2-NITROPHENOL		10 U ug/l	10 U ug/l			
3,3'-DICHLOROBENZIDINE		10 U ug/l	10 U ug/l			
3-NITROANILINE		25 U ug/l	25 U ug/l			
4,6-DINITRO-2-METHYLPHENOL		25 U ug/l	25 U ug/l			
4-BROMOPHENYL PHENYL ETHER		10 U ug/l	10 U ug/l			
4-CHLORO-3-METHYLPHENOL		10 U ug/l	10 U ug/l			
4-CHLOROANILINE		10 U ug/l	10 U ug/l			
4-CHLOROPHENYL PHENYL ETHER		10 U ug/l	10 U ug/l			
4-METHYLPHENOL		10 U ug/l	10 U ug/l			
4-NITROANILINE		25 U ug/l	25 U ug/l			
4-NITROPHENOL		25 U ug/l	25 U ug/l			
ACENAPHTHENE		10 U ug/l	10 U ug/l			
ACENAPHTHYLENE		10 U ug/l	10 U ug/l			
ANTHRACENE		10 U ug/l	10 U ug/l			

Blank e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

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SAMPLE NUMBER SITE DATE SAMPLED	W04TB00600 4 3/25/98	6SBRB04 6 12/4/92	6SBRB5 6 12/5/92	6SBTB4 6 12/4/92	6SBTB5 6 12/5/92	30SBFB01 30 1/4/93
BENZO(A)ANTHRACENE		10 U ug/l	10 U ug/l			
BENZO(A)PYRENE		10 U ug/l	10 U ug/l			
BENZO(B)FLUORANTHENE		10 U ug/l	10 U ug/l			
BENZO(G,H,I)PERYLENE		10 U ug/l	10 U ug/l			
BENZO(K)FLUORANTHENE		10 U ug/l	10 U ug/l			
BIS(2-CHLOROETHOXY)METHANE		10 U ug/l	10 U ug/l			
BIS(2-CHLOROETHYL)ETHER		10 U ug/l	10 U ug/l			
BIS(2-ETHYLHEXYL)PHTHALATE		10 U ug/l	10 U ug/l			
BUTYLBENZYL PHTHALATE		10 U ug/l	10 U ug/l			
CARBAZOLE						
CHRYSENE		10 U ug/l	10 U ug/l			
DI-N-BUTYL PHTHALATE		10 ug/l	7 J ug/l			
DI-N-OCTYL PHTHALATE		10 U ug/l	10 U ug/l			
DIBENZO(A,H)ANTHRACENE		10 U ug/l	10 U ug/l			
DIBENZOFURAN		10 U ug/l	10 U ug/l			
DIETHYL PHTHALATE		10 U ug/l	10 U ug/l			
DIMETHYL PHTHALATE		10 U ug/l	10 U ug/l			
FLUORANTHENE		10 U ug/l	10 U ug/l			
FLUORENE		10 U ug/l	10 U ug/l			
HEXACHLOROBENZENE		10 U ug/l	10 U ug/l			
HEXACHLOROBUTADIENE		10 U ug/l	10 U ug/l			
HEXACHLOROCYCLOPENTADIENE		10 U ug/l	10 U ug/l			
HEXACHLOROETHANE		10 U ug/l	10 U ug/l			
INDENO(1,2,3-CD)PYRENE		10 U ug/l	10 U ug/l			
ISOPHORONE		10 U ug/l	10 U ug/l			
N-NITROSO-DI-N-PROPYLAMINE		10 U ug/l	10 U ug/l			
N-NITROSODIPHENYLAMINE		10 U ug/l	10 U ug/l			
NAPHTHALENE		10 U ug/l	10 U ug/l			
NITROBENZENE		10 U ug/l	10 U ug/l			
PENTACHLOROPHENOL		25 U ug/l	25 U ug/l			
PHENANTHRENE		10 U ug/l	10 U ug/l			
PHENOL		10 U ug/l	10 U ug/l			
PYRENE		10 U ug/l	10 U ug/l			
PESTICIDES/PCBs						

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04TB00600 4 3/25/98	6SBRB04 6 12/4/92	6SBRB5 6 12/5/92	6SBTB4 6 12/4/92	6SBTB5 6 12/5/92	30SBFB01 30 1/4/93
4,4'-DDD		0.1 UJ ug/l	0.1 UJ ug/l			
4,4'-DDE		0.1 UJ ug/l	0.1 UJ ug/l			
4,4'-DDT		0.1 UJ ug/l	0.1 UJ ug/l			
ALDRIN		0.05 UJ ug/l	0.05 UJ ug/l			
ALPHA-BHC		0.05 UJ ug/l	0.05 UJ ug/l			
ALPHA-CHLORDANE		0.05 UJ ug/l	0.05 UJ ug/l			
AROCLOR-1016		1 UJ ug/l	1 UJ ug/l			
AROCLOR-1221		2 UJ ug/l	2 UJ ug/l			
AROCLOR-1232		1 UJ ug/l	1 UJ ug/l			
AROCLOR-1242		1 UJ ug/l	1 UJ ug/l			
AROCLOR-1248		1 UJ ug/l	1 UJ ug/l			
AROCLOR-1254		1 UJ ug/l	1 UJ ug/l			
AROCLOR-1260		1 UJ ug/l	1 UJ ug/l			
BETA-BHC		0.05 UJ ug/l	0.05 UJ ug/l			
DELTA-BHC		0.05 UJ ug/l	0.05 UJ ug/l			
DIELDRIN		0.1 UJ ug/l	0.1 UJ ug/l			
ENDOSULFAN I		0.05 UJ ug/l	0.05 UJ ug/l			
ENDOSULFAN II		0.1 UJ ug/l	0.1 UJ ug/l			
ENDOSULFAN SULFATE		0.1 UJ ug/l	0.1 UJ ug/l			
ENDRIN		0.1 UJ ug/l	0.1 UJ ug/l			
ENDRIN ALDEHYDE						
ENDRIN KETONE		0.1 UJ ug/l	0.1 UJ ug/l			
GAMMA-BHC (LINDANE)		0.05 UJ ug/l	0.05 UJ ug/l			
GAMMA-CHLORDANE		0.05 UJ ug/l	0.05 UJ ug/l			
HEPTACHLOR		0.05 UJ ug/l	0.05 UJ ug/l			
HEPTACHLOR EPOXIDE		0.05 UJ ug/l	0.05 UJ ug/l			
METHOXYCHLOR		0.5 UJ ug/l	0.5 UJ ug/l			
TOXAPHENE		5 UJ ug/l	5 UJ ug/l			
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS		0.05 U mg/l				
TPH (C8-C40)						
INORGANICS						
ALUMINUM		31 U ug/l	31 U ug/l			
ANTIMONY		12.1 U ug/l	12.1 U ug/l			

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04TB00600	6SBRB04	6SBRB5	6SBTB4	6SBTB5	30SBFB01
SITE	4	6	6	6	6	30
DATE SAMPLED	3/25/98	12/4/92	12/5/92	12/4/92	12/5/92	1/4/93
ARSENIC		0.7 U ug/l	0.7 U ug/l			
BARIUM		0.1 U ug/l	0.1 U ug/l			
BERYLLIUM		0.5 U ug/l	0.5 U ug/l			
CADMIUM		1.2 UJ ug/l	1.2 UJ ug/l			
CALCIUM		103 U ug/l	120 J ug/l			
CHROMIUM		3.7 U ug/l	3.7 U ug/l			
COBALT		5.8 U ug/l	6.6 J ug/l			
COPPER		0.9 U ug/l	0.9 U ug/l			
CYANIDE		3 U ug/l	3 U ug/l			
IRON		17.1 J ug/l	16.6 J ug/l			
LEAD		0.6 U ug/l	0.6 U ug/l			
MAGNESIUM		14.3 U ug/l	14.3 U ug/l			
MANGANESE		0.8 U ug/l	0.8 U ug/l			
MERCURY		0.1 U ug/l	0.1 U ug/l			
NICKEL		7.7 U ug/l	7.7 U ug/l			
POTASSIUM		191 U ug/l	191 U ug/l			
SELENIUM		0.5 U ug/l	0.5 U ug/l			
SILVER		2.1 U ug/l	2.1 U ug/l			
SODIUM		37.1 J ug/l	32.1 J ug/l			
THALLIUM		0.7 U ug/l	0.7 U ug/l			
VANADIUM		1.9 U ug/l	1.9 U ug/l			
ZINC		3.1 J ug/l	3.1 J ug/l			

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBRB01 30 1/4/93	30SBRB08 30 12/8/92	30SBRB6 30 12/6/92	30SBRB7 30 12/6/92	30SBTB01 30 1/4/93	30SBTB02 30 1/5/93
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES						
1,1,1-TRICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1,2,2-TETRACHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1,2-TRICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1-DICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1-DICHLOROETHENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,2-DICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,2-DICHLOROETHENE (TOTAL)						
1,2-DICHLOROPROPANE						
2-BUTANONE						
2-HEXANONE						
4-METHYL-2-PENTANONE						
ACETONE						
BENZENE						
BROMODICHLOROMETHANE						
BROMOFORM						
BROMOMETHANE						
CARBON DISULFIDE						
CARBON TETRACHLORIDE						
CHLOROBENZENE						
CHLOROETHANE						
CHLOROFORM						
CHLOROMETHANE						
CIS-1,3-DICHLOROPROPENE						
DIBROMOCHLOROMETHANE						
ETHYLBENZENE						
METHYL TERT-BUTYL ETHER						
METHYLENE CHLORIDE						
STYRENE						
TETRACHLOROETHENE						
TOLUENE						
TRANS-1,3-DICHLOROPROPENE						
TRICHLOROETHENE						

Blanl e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SBRB01	30SBRB08	30SBRB6	30SBRB7	30SBTB01	30SBTB02
SITE	30	30	30	30	30	30
DATE SAMPLED	1/4/93	12/8/92	12/6/92	12/6/92	1/4/93	1/5/93
VINYL CHLORIDE						
XYLENES, TOTAL						
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE						
1,2-DICHLOROBENZENE						
1,3-DICHLOROBENZENE						
1,4-DICHLOROBENZENE						
2,2'-OXYBIS(1-CHLOROPROPANE)						
2,4,5-TRICHLOROPHENOL						
2,4,6-TRICHLOROPHENOL						
2,4-DICHLOROPHENOL						
2,4-DIMETHYLPHENOL						
2,4-DINITROPHENOL						
2,4-DINITROTOLUENE						
2,6-DINITROTOLUENE						
2-CHLORONAPHTHALENE						
2-CHLOROPHENOL						
2-METHYLNAPHTHALENE						
2-METHYLPHENOL						
2-NITROANILINE						
2-NITROPHENOL						
3,3'-DICHLOROBENZIDINE						
3-NITROANILINE						
4,6-DINITRO-2-METHYLPHENOL						
4-BROMOPHENYL PHENYL ETHER						
4-CHLORO-3-METHYLPHENOL						
4-CHLOROANILINE						
4-CHLOROPHENYL PHENYL ETHER						
4-METHYLPHENOL						
4-NITROANILINE						
4-NITROPHENOL						
ACENAPHTHENE						
ACENAPHTHYLENE						
ANTHRACENE						

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBRB01 30 1/4/93	30SBRB08 30 12/8/92	30SBRB6 30 12/6/92	30SBRB7 30 12/6/92	30SBTB01 30 1/4/93	30SBTB02 30 1/5/93
BENZO(A)ANTHRACENE						
BENZO(A)PYRENE						
BENZO(B)FLUORANTHENE						
BENZO(G,H,I)PERYLENE						
BENZO(K)FLUORANTHENE						
BIS(2-CHLOROETHOXY)METHANE						
BIS(2-CHLOROETHYL)ETHER						
BIS(2-ETHYLHEXYL)PHTHALATE						
BUTYLBENZYL PHTHALATE						
CARBAZOLE						
CHRYSENE						
DI-N-BUTYL PHTHALATE						
DI-N-OCTYL PHTHALATE						
DIBENZO(A,H)ANTHRACENE						
DIBENZOFURAN						
DIETHYL PHTHALATE						
DIMETHYL PHTHALATE						
FLUORANTHENE						
FLUORENE						
HEXACHLOROBENZENE						
HEXACHLOROBUTADIENE						
HEXACHLOROCYCLOPENTADIENE						
HEXACHLOROETHANE						
INDENO(1,2,3-CD)PYRENE						
ISOPHORONE						
N-NITROSO-DI-N-PROPYLAMINE						
N-NITROSODIPHENYLAMINE						
NAPHTHALENE						
NITROBENZENE						
PENTACHLOROPHENOL						
PHENANTHRENE						
PHENOL						
PYRENE						
PESTICIDES/PCBs						

Blanl e indicates chemical not analyzed.

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Rev. 1
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APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBRB01 30 1/4/93	30SBRB08 30 12/8/92	30SBRB6 30 12/6/92	30SBRB7 30 12/6/92	30SBTB01 30 1/4/93	30SBTB02 30 1/5/93
4,4'-DDD						
4,4'-DDE						
4,4'-DDT						
ALDRIN						
ALPHA-BHC						
ALPHA-CHLORDANE						
AROCLOR-1016						
AROCLOR-1221						
AROCLOR-1232						
AROCLOR-1242						
AROCLOR-1248						
AROCLOR-1254						
AROCLOR-1260						
BETA-BHC						
DELTA-BHC						
DIELDRIN						
ENDOSULFAN I						
ENDOSULFAN II						
ENDOSULFAN SULFATE						
ENDRIN						
ENDRIN ALDEHYDE						
ENDRIN KETONE						
GAMMA-BHC (LINDANE)						
GAMMA-CHLORDANE						
HEPTACHLOR						
HEPTACHLOR EPOXIDE						
METHOXYCHLOR						
TOXAPHENE						
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS						
TPH (C8-C40)						
INORGANICS						
ALUMINUM						
ANTIMONY						

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBRB01 30 1/4/93	30SBRB08 30 12/8/92	30SBRB6 30 12/6/92	30SBRB7 30 12/6/92	30SBTB01 30 1/4/93	30SBTB02 30 1/5/93
ARSENIC						
BARIUM						
BERYLLIUM						
CADMIUM						
CALCIUM						
CHROMIUM						
COBALT						
COPPER						
CYANIDE						
IRON						
LEAD						
MAGNESIUM						
MANGANESE						
MERCURY						
NICKEL						
POTASSIUM						
SELENIUM						
SILVER						
SODIUM						
THALLIUM						
VANADIUM						
ZINC						

Blan' ;e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBTB08 30 12/8/92	30SBTB6 30 12/6/92	30SBTB7 30 12/6/92	W30RB00100 30 3/23/98	W30TB00200 30 3/23/98	W30TB01100 30 3/21/98
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES						
1,1,1-TRICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	1 U UG/L	1 U UG/L	1 U UG/L
1,1,2,2-TETRACHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L
1,1,2-TRICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	1 U UG/L	1 U UG/L	1 U UG/L
1,1-DICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	1 U UG/L	1 U UG/L	1 U UG/L
1,1-DICHLOROETHENE	10 U ug/l	10 U ug/l	10 U ug/l	1 U UG/L	1 U UG/L	1 U UG/L
1,2-DICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	1 U UG/L	1 U UG/L	1 U UG/L
1,2-DICHLOROETHENE (TOTAL)				1 U UG/L	1 U UG/L	1 U UG/L
1,2-DICHLOROPROPANE				1 U UG/L	1 U UG/L	1 U UG/L
2-BUTANONE				1 UR UG/L	1 UR UG/L	1 UR UG/L
2-HEXANONE				1 UJ UG/L	1 UJ UG/L	1 UJ UG/L
4-METHYL-2-PENTANONE				1 U UG/L	1 U UG/L	1 U UG/L
ACETONE				1 UR UG/L	1 UR UG/L	1 UR UG/L
BENZENE				1 U UG/L	1 U UG/L	1 U UG/L
BROMODICHLOROMETHANE				0.6 U UG/L	0.6 U UG/L	0.6 U UG/L
BROMOFORM				1 U UG/L	1 U UG/L	1 U UG/L
BROMOMETHANE				1 U UG/L	1 U UG/L	1 U UG/L
CARBON DISULFIDE				1 U UG/L	1 U UG/L	1 U UG/L
CARBON TETRACHLORIDE				1 U UG/L	1 U UG/L	1 U UG/L
CHLOROBENZENE				1 U UG/L	1 U UG/L	1 U UG/L
CHLOROETHANE				1 U UG/L	1 U UG/L	1 U UG/L
CHLOROFORM				1 U UG/L	1 U UG/L	1 U UG/L
CHLOROMETHANE				1 U UG/L	1 U UG/L	1 U UG/L
CIS-1,3-DICHLOROPROPENE				1 U UG/L	1 U UG/L	1 U UG/L
DIBROMOCHLOROMETHANE				1 U UG/L	1 U UG/L	1 U UG/L
ETHYLBENZENE				1 U UG/L	1 U UG/L	1 U UG/L
METHYL TERT-BUTYL ETHER				1 UJ UG/L	1 UJ UG/L	1 UJ UG/L
METHYLENE CHLORIDE				1 U UG/L	1 U UG/L	1 U UG/L
STYRENE				1 U UG/L	1 U UG/L	1 U UG/L
TETRACHLOROETHENE				1 U UG/L	1 U UG/L	1 U UG/L
TOLUENE				1 U UG/L	1 U UG/L	1 U UG/L
TRANS-1,3-DICHLOROPROPENE				1 UJ UG/L	1 UJ UG/L	1 UJ UG/L
TRICHLOROETHENE				1 U UG/L	1 U UG/L	1 U UG/L

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBTB08 30 12/8/92	30SBTB6 30 12/6/92	30SBTB7 30 12/6/92	W30RB00100 30 3/23/98	W30TB00200 30 3/23/98	W30TB01100 30 3/21/98
VINYL CHLORIDE				1 U UG/L	1 U UG/L	1 U UG/L
XYLENES, TOTAL				1 U UG/L	1 U UG/L	1 U UG/L
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE					5 U UG/L	
1,2-DICHLOROBENZENE					5 U UG/L	
1,3-DICHLOROBENZENE					5 U UG/L	
1,4-DICHLOROBENZENE					5 U UG/L	
2,2'-OXYBIS(1-CHLOROPROPANE)					5 U UG/L	
2,4,5-TRICHLOROPHENOL					4 U UG/L	
2,4,6-TRICHLOROPHENOL					5 U UG/L	
2,4-DICHLOROPHENOL					4 U UG/L	
2,4-DIMETHYLPHENOL					5 U UG/L	
2,4-DINITROPHENOL					5 U UG/L	
2,4-DINITROTOLUENE					0.2 U UG/L	
2,6-DINITROTOLUENE					0.2 J UG/L	
2-CHLORONAPHTHALENE					5 U UG/L	
2-CHLOROPHENOL					5 U UG/L	
2-METHYLNAPHTHALENE					5 U UG/L	
2-METHYLPHENOL					5 U UG/L	
2-NITROANILINE					5 U UG/L	
2-NITROPHENOL					5 U UG/L	
3,3'-DICHLOROBENZIDINE					5 U UG/L	
3-NITROANILINE					5 UJ UG/L	
4,6-DINITRO-2-METHYLPHENOL					5 U UG/L	
4-BROMOPHENYL PHENYL ETHER					5 U UG/L	
4-CHLORO-3-METHYLPHENOL					5 U UG/L	
4-CHLOROANILINE					5 U UG/L	
4-CHLOROPHENYL PHENYL ETHER					5 U UG/L	
4-METHYLPHENOL					5 U UG/L	
4-NITROANILINE					5 U UG/L	
4-NITROPHENOL					5 U UG/L	
ACENAPHTHENE					5 U UG/L	
ACENAPHTHYLENE					5 U UG/L	
ANTHRACENE					5 U UG/L	

Blank indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBTB08 30 12/8/92	30SBTB6 30 12/6/92	30SBTB7 30 12/6/92	W30RB00100 30 3/23/98	W30TB00200 30 3/23/98	W30TB01100 30 3/21/98
BENZO(A)ANTHRACENE					4 U UG/L	
BENZO(A)PYRENE					0.2 U UG/L	
BENZO(B)FLUORANTHENE					4 U UG/L	
BENZO(G,H,I)PERYLENE					5 U UG/L	
BENZO(K)FLUORANTHENE					4 U UG/L	
BIS(2-CHLOROETHOXY)METHANE					5 U UG/L	
BIS(2-CHLOROETHYL)ETHER					1 U UG/L	
BIS(2-ETHYLHEXYL)PHTHALATE					5 U UG/L	
BUTYLBENZYL PHTHALATE					5 U UG/L	
CARBAZOLE					5 U UG/L	
CHRYSENE					5 U UG/L	
DI-N-BUTYL PHTHALATE					5 U UG/L	
DI-N-OCTYL PHTHALATE					5 U UG/L	
DIBENZO(A,H)ANTHRACENE					5 U UG/L	
DIBENZOFURAN					5 U UG/L	
DIETHYL PHTHALATE					5 U UG/L	
DIMETHYL PHTHALATE					5 U UG/L	
FLUORANTHENE					5 U UG/L	
FLUORENE					5 U UG/L	
HEXACHLOROBENZENE					1 UJ UG/L	
HEXACHLOROBUTADIENE					5 U UG/L	
HEXACHLOROCYCLOPENTADIENE					5 U UG/L	
HEXACHLOROETHANE					5 U UG/L	
INDENO(1,2,3-CD)PYRENE					5 U UG/L	
ISOPHORONE					5 U UG/L	
N-NITROSO-DI-N-PROPYLAMINE					4 U UG/L	
N-NITROSODIPHENYLAMINE					5 U UG/L	
NAPHTHALENE					5 U UG/L	
NITROBENZENE					5 U UG/L	
PENTACHLOROPHENOL					1 U UG/L	
PHENANTHRENE					5 U UG/L	
PHENOL					5 U UG/L	
PYRENE					5 U UG/L	
PESTICIDES/PCBs						

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBTB08 30 12/8/92	30SBTB6 30 12/6/92	30SBTB7 30 12/6/92	W30RB00100 30 3/23/98	W30TB00200 30 3/23/98	W30TB01100 30 3/21/98
4,4'-DDD					0.10 U UG/L	
4,4'-DDE					0.10 U UG/L	
4,4'-DDT					0.10 U UG/L	
ALDRIN					0.050 U UG/L	
ALPHA-BHC					0.050 U UG/L	
ALPHA-CHLORDANE					0.050 U UG/L	
AROCLOR-1016					1.0 U UG/L	
AROCLOR-1221					2.0 U UG/L	
AROCLOR-1232					1.0 U UG/L	
AROCLOR-1242					1.0 U UG/L	
AROCLOR-1248					1.0 U UG/L	
AROCLOR-1254					1.0 U UG/L	
AROCLOR-1260					1.0 U UG/L	
BETA-BHC					0.050 U UG/L	
DELTA-BHC					0.050 U UG/L	
DIELDRIN					0.10 U UG/L	
ENDOSULFAN I					0.050 U UG/L	
ENDOSULFAN II					0.10 U UG/L	
ENDOSULFAN SULFATE					0.10 U UG/L	
ENDRIN					0.10 U UG/L	
ENDRIN ALDEHYDE					0.10 U UG/L	
ENDRIN KETONE					0.10 U UG/L	
GAMMA-BHC (LINDANE)					0.050 U UG/L	
GAMMA-CHLORDANE					0.050 U UG/L	
HEPTACHLOR					0.050 U UG/L	
HEPTACHLOR EPOXIDE					0.050 U UG/L	
METHOXYCHLOR					0.50 U UG/L	
TOXAPHENE					5.0 U UG/L	
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS						
TPH (C8-C40)					0.5 U MG/L	
INORGANICS						
ALUMINUM					200 U UG/L	
ANTIMONY					5.0 U UG/L	

Blank ; indicates chemical not analyzed.

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APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30SBTB08 30 12/8/92	30SBTB6 30 12/6/92	30SBTB7 30 12/6/92	W30RB00100 30 3/23/98	W30TB00200 30 3/23/98	W30TB01100 30 3/21/98
ARSENIC					10.0 U UG/L	
BARIUM					10.0 U UG/L	
BERYLLIUM					3.0 U UG/L	
CADMIUM					3.0 U UG/L	
CALCIUM					1000 U UG/L	
CHROMIUM					5.0 U UG/L	
COBALT					5.0 U UG/L	
COPPER					5.0 U UG/L	
CYANIDE						
IRON					100 U UG/L	
LEAD					3.0 U UG/L	
MAGNESIUM					50.0 U UG/L	
MANGANESE					5.0 U UG/L	
MERCURY					0.20 U UG/L	
NICKEL					5.0 U UG/L	
POTASSIUM					50.0 U UG/L	
SELENIUM					5.0 U UG/L	
SILVER					3.0 U UG/L	
SODIUM					500 U UG/L	
THALLIUM					10.0 U UG/L	
VANADIUM					5.0 U UG/L	
ZINC					10.0 U UG/L	

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SBRB2	32SBRB4	32SBTB02	32SBTB4	32SBTB6	32SBTB7	W32FB00100
SITE	32	32	32	32	32	32	32
DATE SAMPLED	1/19/93	1/21/93	1/19/93	1/21/93	1/12/93	1/12/93	3/9/98
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES							
1,1,1-TRICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
1,1,2,2-TETRACHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	0.2 U UG/L
1,1,2-TRICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
1,1-DICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
1,1-DICHLOROETHENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
1,2-DICHLOROETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
1,2-DICHLOROETHENE (TOTAL)	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
1,2-DICHLOROPROPANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
2-BUTANONE	10 U ug/l	10 UJ ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	10 UJ ug/l	1.0 UR UG/L
2-HEXANONE	10 U ug/l	10 UJ ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	10 UJ ug/l	1.0 UJ UG/L
4-METHYL-2-PENTANONE	10 U ug/l	10 UJ ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	10 UJ ug/l	1.0 U UG/L
ACETONE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 UR UG/L
BENZENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
BROMODICHLOROMETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	0.6 J UG/L
BROMOFORM	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	0.7 J UG/L
BROMOMETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 UJ UG/L
CARBON DISULFIDE	11 ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
CARBON TETRACHLORIDE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 UJ UG/L
CHLOROBENZENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
CHLOROETHANE	10 UJ ug/l	10 U ug/l	10 UJ ug/l	10 UJ ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
CHLOROFORM	10 U ug/l	10 U ug/l	18 ug/l	18 ug/l	10 U ug/l	10 U ug/l	0.4 J UG/L
CHLOROMETHANE	10 U ug/l	10 UJ ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	10 UJ ug/l	1.0 U UG/L
CIS-1,3-DICHLOROPROPENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
DIBROMOCHLOROMETHANE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 J UG/L
ETHYLBENZENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
METHYL TERT-BUTYL ETHER	10 U ug/l	10 U ug/l					1.0 U UG/L
METHYLENE CHLORIDE	10 U ug/l	10 U ug/l	1 J ug/l	1 J ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
STYRENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
TETRACHLOROETHENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
TOLUENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
TRANS-1,3-DICHLOROPROPENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
TRICHLOROETHENE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L

Blank [illegible]e indicates chemical not analyzed.

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APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	32SBRB2 32 1/19/93	32SBRB4 32 1/21/93	32SBTB02 32 1/19/93	32SBTB4 32 1/21/93	32SBTB6 32 1/12/93	32SBTB7 32 1/12/93	W32FB00100 32 5/9/98
VINYL CHLORIDE	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
XYLENES, TOTAL	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	1.0 U UG/L
SEMIVOLATILES							
1,2,4-TRICHLOROBENZENE	10 U ug/l	10 U ug/l					
1,2-DICHLOROBENZENE	10 U ug/l	10 U ug/l					
1,3-DICHLOROBENZENE	10 U ug/l	10 U ug/l					
1,4-DICHLOROBENZENE	10 U ug/l	10 U ug/l					
2,2'-OXYBIS(1-CHLOROPROPANE)							
2,4,5-TRICHLOROPHENOL	25 U ug/l	25 U ug/l					
2,4,6-TRICHLOROPHENOL	10 U ug/l	10 U ug/l					
2,4-DICHLOROPHENOL	10 U ug/l	10 U ug/l					
2,4-DIMETHYLPHENOL	10 U ug/l	10 U ug/l					
2,4-DINITROPHENOL	25 UJ ug/l	25 U ug/l					
2,4-DINITROTOLUENE	10 U ug/l	10 U ug/l					
2,6-DINITROTOLUENE	10 U ug/l	10 U ug/l					
2-CHLORONAPHTHALENE	10 U ug/l	10 U ug/l					
2-CHLOROPHENOL	10 U ug/l	10 U ug/l					
2-METHYLNAPHTHALENE	10 U ug/l	10 U ug/l					
2-METHYLPHENOL	10 U ug/l	10 U ug/l					
2-NITROANILINE	25 U ug/l	25 U ug/l					
2-NITROPHENOL	10 U ug/l	10 U ug/l					
3,3'-DICHLOROBENZIDINE	10 U ug/l	10 U ug/l					
3-NITROANILINE	25 U ug/l	25 U ug/l					
4,6-DINITRO-2-METHYLPHENOL	25 U ug/l	25 U ug/l					
4-BROMOPHENYL PHENYL ETHER	10 U ug/l	10 U ug/l					
4-CHLORO-3-METHYLPHENOL	10 U ug/l	10 U ug/l					
4-CHLOROANILINE	10 U ug/l	10 UJ ug/l					
4-CHLOROPHENYL PHENYL ETHER	10 U ug/l	10 U ug/l					
4-METHYLPHENOL	10 U ug/l	10 U ug/l					
4-NITROANILINE	25 U ug/l	25 U ug/l					
4-NITROPHENOL	25 U ug/l	25 U ug/l					
ACENAPHTHENE	10 U ug/l	10 U ug/l					
ACENAPHTHYLENE	10 U ug/l	10 U ug/l					
ANTHRACENE	10 U ug/l	10 U ug/l					

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SBRB2	32SBRB4	32SBTB02	32SBTB4	32SBTB6	32SBTB7	W32FB00100
SITE	32	32	32	32	32	32	32
DATE SAMPLED	1/19/93	1/21/93	1/19/93	1/21/93	1/12/93	1/12/93	3/9/98
BENZO(A)ANTHRACENE	10 U ug/l	10 U ug/l					
BENZO(A)PYRENE	10 U ug/l	10 U ug/l					
BENZO(B)FLUORANTHENE	10 U ug/l	10 U ug/l					
BENZO(G,H,I)PERYLENE	10 U ug/l	10 U ug/l					
BENZO(K)FLUORANTHENE	10 U ug/l	10 U ug/l					
BIS(2-CHLOROETHOXY)METHANE	10 U ug/l	10 U ug/l					
BIS(2-CHLOROETHYL)ETHER	10 U ug/l	10 U ug/l					
BIS(2-ETHYLHEXYL)PHTHALATE	10 UJ ug/l	5 J ug/l					
BUTYLBENZYL PHTHALATE	10 UJ ug/l	10 U ug/l					
CARBAZOLE	11 ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CHRYSENE	10 U ug/l	10 U ug/l					
DI-N-BUTYL PHTHALATE	11 J ug/l	8 J ug/l					
DI-N-OCTYL PHTHALATE	10 UJ ug/l	10 U ug/l					
DIBENZO(A,H)ANTHRACENE	10 U ug/l	10 U ug/l					
DIBENZOFURAN	10 U ug/l	10 U ug/l					
DIETHYL PHTHALATE	10 U ug/l	10 U ug/l					
DIMETHYL PHTHALATE	10 U ug/l	10 U ug/l					
FLUORANTHENE	10 U ug/l	10 U ug/l					
FLUORENE	10 U ug/l	10 U ug/l					
HEXACHLOROBENZENE	10 U ug/l	10 U ug/l					
HEXACHLOROBUTADIENE	10 U ug/l	10 U ug/l					
HEXACHLOROCYCLOPENTADIENE	10 U ug/l	10 U ug/l					
HEXACHLOROETHANE	10 U ug/l	10 U ug/l					
INDENO(1,2,3-CD)PYRENE	10 U ug/l	10 U ug/l					
ISOPHORONE	10 U ug/l	10 U ug/l					
N-NITROSO-DI-N-PROPYLAMINE	10 U ug/l	10 U ug/l					
N-NITROSODIPHENYLAMINE	10 U ug/l	10 U ug/l					
NAPHTHALENE	10 U ug/l	10 U ug/l					
NITROBENZENE	10 U ug/l	10 U ug/l					
PENTACHLOROPHENOL	25 U ug/l	25 U ug/l					
PHENANTHRENE	10 U ug/l	10 U ug/l					
PHENOL	10 U ug/l	10 U ug/l					
PYRENE	10 U ug/l	10 U ug/l					
PESTICIDES/PCBs							

Blank ɘ indicates chemical not analyzed.

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APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SBRB2	32SBRB4	32SBTB02	32SBTB4	32SBTB6	32SBTB7	W32FB00100
SITE	32	32	32	32	32	32	32
DATE SAMPLED	1/19/93	1/21/93	1/19/93	1/21/93	1/12/93	1/12/93	3/9/98
4,4'-DDD	0.1 UJ ug/l	0.1 UJ ug/l					
4,4'-DDE	0.1 UJ ug/l	0.1 UJ ug/l					
4,4'-DDT	0.1 UJ ug/l	0.1 UJ ug/l					
ALDRIN	0.05 UJ ug/l	0.05 UJ ug/l					
ALPHA-BHC	0.05 UJ ug/l	0.05 UJ ug/l					
ALPHA-CHLORDANE	0.05 UJ ug/l	0.05 UJ ug/l					
AROCLOR-1016	1 UJ ug/l	1 UJ ug/l					
AROCLOR-1221	2 UJ ug/l	2 UJ ug/l					
AROCLOR-1232	1 UJ ug/l	1 UJ ug/l					
AROCLOR-1242	1 UJ ug/l	1 UJ ug/l					
AROCLOR-1248	1 UJ ug/l	1 UJ ug/l					
AROCLOR-1254	1 UJ ug/l	1 UJ ug/l					
AROCLOR-1260	1 UJ ug/l	1 UJ ug/l					
BETA-BHC	0.05 UJ ug/l	0.05 UJ ug/l					
DELTA-BHC	0.05 UJ ug/l	0.05 UJ ug/l					
DIELDRIN	0.1 UJ ug/l	0.1 UJ ug/l					
ENDOSULFAN I	0.05 UJ ug/l	0.05 UJ ug/l					
ENDOSULFAN II	0.1 UJ ug/l	0.1 UJ ug/l					
ENDOSULFAN SULFATE	0.1 UJ ug/l	0.1 UJ ug/l					
ENDRIN	0.1 UJ ug/l	0.1 UJ ug/l					
ENDRIN ALDEHYDE							
ENDRIN KETONE	0.1 UJ ug/l	0.1 UJ ug/l					
GAMMA-BHC (LINDANE)	0.05 UJ ug/l	0.05 UJ ug/l					
GAMMA-CHLORDANE	0.05 UJ ug/l	0.05 UJ ug/l					
HEPTACHLOR	0.05 UJ ug/l	0.05 UJ ug/l					
HEPTACHLOR EPOXIDE	0.05 UJ ug/l	0.05 UJ ug/l					
METHOXYCHLOR	0.5 UJ ug/l	0.5 UJ ug/l					
TOXAPHENE	5 UJ ug/l	5 UJ ug/l					
PETROLEUM HYDROCARBONS							
TOTAL PETROLEUM HYDROCARBONS	0.08 mg/l	0.05 U mg/l					
TPH (C8-C40)	10 U ug/l	10 U ug/l					
INORGANICS							
ALUMINUM	33.7 U ug/l	31 U ug/l					
ANTIMONY	24.6 U ug/l	12.1 U ug/l					

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SBRB2	32SBRB4	32SBTB02	32SBTB4	32SBTB6	32SBTB7	W32FB00100
SITE	32	32	32	32	32	32	32
DATE SAMPLED	1/19/93	1/21/93	1/19/93	1/21/93	1/12/93	1/12/93	3/9/98
ARSENIC	1 U ug/l	0.7 U ug/l					
BARIUM	0.48 U ug/l	0.1 U ug/l					
BERYLLIUM	0.27 U ug/l	0.5 U ug/l					
CADMIUM	4 U ug/l	12 U ug/l					
CALCIUM	32.8 U ug/l	118 J ug/l					
CHROMIUM	2.4 U ug/l	3.7 U ug/l					
COBALT	2.3 U ug/l	5.8 U ug/l					
COPPER	2 J ug/l	0.9 U ug/l					
CYANIDE	5.2 J ug/l	3 U ug/l					
IRON	8 U ug/l	55 J ug/l					
LEAD	0.52 U ug/l	0.6 U ug/l					
MAGNESIUM	35.6 U ug/l	14.3 U ug/l					
MANGANESE	0.56 U ug/l	0.97 J ug/l					
MERCURY	0.08 U ug/l	0.1 U ug/l					
NICKEL	12.5 U ug/l	7.7 U ug/l					
POTASSIUM	513 U ug/l	191 U ug/l					
SELENIUM	2.1 U ug/l	0.51 J ug/l					
SILVER	2.4 U ug/l	2.1 U ug/l					
SODIUM	55.6 U ug/l	141 J ug/l					
THALLIUM	2.5 U ug/l	0.7 U ug/l					
VANADIUM	2.2 U ug/l	1.9 U ug/l					
ZINC	1.6 U ug/l	7 J ug/l					

Blank ɘ indicates chemical not analyzed.

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APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W32RB00100 32 3/6/98	W32TB00100 32 3/5/98	W32TB00200 32 3/6/98	W32TB00300 32 3/9/98	W32TB00400 32 3/19/98	W32TB00500 32 3/19/98
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES						
1,1,1-TRICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,1,2,2-TETRACHLOROETHANE	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L
1,1,2-TRICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,1-DICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,1-DICHLOROETHENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROETHENE (TOTAL)	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROPROPANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
2-BUTANONE	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L
2-HEXANONE	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L
4-METHYL-2-PENTANONE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L
ACETONE	4.0 J UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L
BENZENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
BROMODICHLOROMETHANE	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L
BROMOFORM	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
BROMOMETHANE	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
CARBON DISULFIDE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CARBON TETRACHLORIDE	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L
CHLOROBENZENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROFORM	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROMETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
CIS-1,3-DICHLOROPROPENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
DIBROMOCHLOROMETHANE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
ETHYLBENZENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
METHYL TERT-BUTYL ETHER	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L
METHYLENE CHLORIDE	1.0 U UG/L	2.0 U UG/L	1.0 U UG/L	1.0 U UG/L	0.8 J UG/L	0.8 J UG/L
STYRENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
TETRACHLOROETHENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L
TOLUENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
TRANS-1,3-DICHLOROPROPENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
TRICHLOROETHENE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L

Blank space indicates chemical not analyzed.

SAMPLE NUMBER	W32RB00100	W32TB00100	W32TB00200	W32TB00300	W32TB00400	W32TB00500
SITE	32	32	32	32	32	32
DATE SAMPLED	3/6/98	3/5/98	3/6/98	3/9/98	3/19/98	3/19/98
VINYL CHLORIDE	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
XYLENES, TOTAL	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L	1.0 U UG/L
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE	5 U UG/L	10 U UG/L				
1,2-DICHLOROBENZENE	5 U UG/L	10 U UG/L				
1,3-DICHLOROBENZENE	5 U UG/L	10 U UG/L				
1,4-DICHLOROBENZENE	5 U UG/L	10 U UG/L				
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U UG/L	10 U UG/L				
2,4,5-TRICHLOROPHENOL	4 UR UG/L	8.0 U UG/L				
2,4,6-TRICHLOROPHENOL	5 UR UG/L	10 U UG/L				
2,4-DICHLOROPHENOL	4 UR UG/L	8.0 U UG/L				
2,4-DIMETHYLPHENOL	5 UR UG/L	10 U UG/L				
2,4-DINITROPHENOL	5 UR UG/L	10 U UG/L				
2,4-DINITROTOLUENE	0.2 U UG/L	0.4 U UG/L				
2,6-DINITROTOLUENE	0.2 U UG/L	0.4 U UG/L				
2-CHLORONAPHTHALENE	5 U UG/L	10 U UG/L				
2-CHLOROPHENOL	5 UR UG/L	10 U UG/L				
2-METHYLNAPHTHALENE	5 U UG/L	10 U UG/L				
2-METHYLPHENOL	5 UR UG/L	10 U UG/L				
2-NITROANILINE	5 U UG/L	10 U UG/L				
2-NITROPHENOL	5 UR UG/L	10 U UG/L				
3,3'-DICHLOROBENZIDINE	5 U UG/L	10 U UG/L				
3-NITROANILINE	5 U UG/L	10 U UG/L				
4,6-DINITRO-2-METHYLPHENOL	5 UR UG/L	10 U UG/L				
4-BROMOPHENYL PHENYL ETHER	5 U UG/L	10 U UG/L				
4-CHLORO-3-METHYLPHENOL	5 UR UG/L	10 U UG/L				
4-CHLOROANILINE	5 U UG/L	10 U UG/L				
4-CHLOROPHENYL PHENYL ETHER	5 U UG/L	10 U UG/L				
4-METHYLPHENOL	5 UR UG/L	10 U UG/L				
4-NITROANILINE	5 U UG/L	10 U UG/L				
4-NITROPHENOL	5 UR UG/L	10 U UG/L				
ACENAPHTHENE	5 U UG/L	10 U UG/L				
ACENAPHTHYLENE	5 U UG/L	10 U UG/L				
ANTHRACENE	5 U UG/L	10 U UG/L				

Blank indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W32RB00100 32 3/6/98	W32TB00100 32 3/5/98	W32TB00200 32 3/6/98	W32TB00300 32 3/9/98	W32TB00400 32 3/19/98	W32TB00500 32 3/19/98
BENZO(A)ANTHRACENE	4 U UG/L	8.0 U UG/L				
BENZO(A)PYRENE	0.2 U UG/L	0.4 U UG/L				
BENZO(B)FLUORANTHENE	4 U UG/L	8.0 U UG/L				
BENZO(G,H,I)PERYLENE	5 U UG/L	10 U UG/L				
BENZO(K)FLUORANTHENE	4 U UG/L	8.0 U UG/L				
BIS(2-CHLOROETHOXY)METHANE	5 U UG/L	10 U UG/L				
BIS(2-CHLOROETHYL)ETHER	1 U UG/L	1.0 U UG/L				
BIS(2-ETHYLHEXYL)PHTHALATE	5 U UG/L	10 U UG/L				
BUTYLBENZYL PHTHALATE	5 U UG/L	10 U UG/L				
CARBAZOLE	5 U UG/L	10 U UG/L				
CHRYSENE	5 U UG/L	10 U UG/L				
DI-N-BUTYL PHTHALATE	9 U UG/L	20 U UG/L				
DI-N-OCTYL PHTHALATE	5 U UG/L	10 U UG/L				
DIBENZO(A,H)ANTHRACENE	5 U UG/L	10 U UG/L				
DIBENZOFURAN	5 U UG/L	10 U UG/L				
DIETHYL PHTHALATE	5 U UG/L	10 U UG/L				
DIMETHYL PHTHALATE	5 U UG/L	10 U UG/L				
FLUORANTHENE	5 U UG/L	10 U UG/L				
FLUORENE	5 U UG/L	10 U UG/L				
HEXACHLOROBENZENE	1 UJ UG/L	1.0 UJ UG/L				
HEXACHLOROBUTADIENE	5 U UG/L	10 U UG/L				
HEXACHLOROCYCLOPENTADIENE	5 U UG/L	10 U UG/L				
HEXACHLOROETHANE	5 U UG/L	10 U UG/L				
INDENO(1,2,3-CD)PYRENE	5 U UG/L	10 U UG/L				
ISOPHORONE	5 U UG/L	10 U UG/L				
N-NITROSO-DI-N-PROPYLAMINE	4 U UG/L	8.0 U UG/L				
N-NITROSODIPHENYLAMINE	5 U UG/L	10 U UG/L				
NAPHTHALENE	5 U UG/L	10 U UG/L				
NITROBENZENE	5 U UG/L	10 U UG/L				
PENTACHLOROPHENOL	1 UR UG/L	1.0 U UG/L				
PHENANTHRENE	5 U UG/L	10 U UG/L				
PHENOL	5 UR UG/L	10 U UG/L				
PYRENE	5 U UG/L	10 U UG/L				
PESTICIDES/PCBs						

Blank space indicates chemical not analyzed.

SAMPLE NUMBER SITE DATE SAMPLED	W32RB00100 32 3/6/98	W32TB00100 32 3/5/98	W32TB00200 32 3/6/98	W32TB00300 32 3/9/98	W32TB00400 32 3/19/98	W32TB00500 32 3/19/98
4,4'-DDD	0.10 U UG/L	0.20 U UG/L				
4,4'-DDE	0.10 U UG/L	0.20 U UG/L				
4,4'-DDT	0.10 U UG/L	0.20 U UG/L				
ALDRIN	0.050 U UG/L	0.10 U UG/L				
ALPHA-BHC	0.050 U UG/L	0.10 U UG/L				
ALPHA-CHLORDANE	0.050 U UG/L	0.10 U UG/L				
AROCLOR-1016	1.0 U UG/L	2.0 U UG/L				
AROCLOR-1221	2.0 U UG/L	4.0 U UG/L				
AROCLOR-1232	1.0 U UG/L	2.0 U UG/L				
AROCLOR-1242	1.0 U UG/L	2.0 U UG/L				
AROCLOR-1248	1.0 U UG/L	2.0 U UG/L				
AROCLOR-1254	1.0 U UG/L	2.0 U UG/L				
AROCLOR-1260	1.0 U UG/L	2.0 U UG/L				
BETA-BHC	0.050 U UG/L	0.10 U UG/L				
DELTA-BHC	0.050 U UG/L	0.10 U UG/L				
DIELDRIN	0.10 U UG/L	0.20 U UG/L				
ENDOSULFAN I	0.050 U UG/L	0.10 U UG/L				
ENDOSULFAN II	0.10 U UG/L	0.20 U UG/L				
ENDOSULFAN SULFATE	0.10 U UG/L	0.20 U UG/L				
ENDRIN	0.10 U UG/L	0.20 U UG/L				
ENDRIN ALDEHYDE	0.10 U UG/L	0.20 U UG/L				
ENDRIN KETONE	0.10 U UG/L	0.20 U UG/L				
GAMMA-BHC (LINDANE)	0.050 U UG/L	0.10 U UG/L				
GAMMA-CHLORDANE	0.050 U UG/L	0.10 U UG/L				
HEPTACHLOR	0.050 U UG/L	0.10 U UG/L				
HEPTACHLOR EPOXIDE	0.050 U UG/L	0.10 U UG/L				
METHOXYCHLOR	0.50 U UG/L	1.0 U UG/L				
TOXAPHENE	5.0 U UG/L	10 U UG/L				
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS		0.5 U MG/L				
TPH (C8-C40)	0.643 MG/L					
INORGANICS						
ALUMINUM	463 UG/L	200 U UG/L				
ANTIMONY	5.0 U UG/L	5.0 U UG/L				

Blank indicates chemical not analyzed.

R4708989

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W32RB00100 32 3/6/98	W32TB00100 32 3/5/98	W32TB00200 32 3/6/98	W32TB00300 32 3/9/98	W32TB00400 32 3/19/98	W32TB00500 32 3/19/98
ARSENIC	10.0 U UG/L	10.0 U UG/L				
BARIUM	19.8 UG/L	10.0 U UG/L				
BERYLLIUM	3.0 U UG/L	3.0 U UG/L				
CADMIUM	3.0 U UG/L	3.0 U UG/L				
CALCIUM	14300 UG/L	1000 U UG/L				
CHROMIUM	5.0 U UG/L	5.0 U UG/L				
COBALT	5.0 U UG/L	5.0 U UG/L				
COPPER	8.0 UG/L	5.0 U UG/L				
CYANIDE						
IRON	479 UG/L	100 U UG/L				
LEAD	3.0 U UG/L	3.0 U UG/L				
MAGNESIUM	1070 UG/L	50.0 U UG/L				
MANGANESE	15.5 UG/L	5.0 U UG/L				
MERCURY	0.20 U UG/L	0.20 U UG/L				
NICKEL	5.0 U UG/L	5.0 U UG/L				
POTASSIUM	502 UG/L	50.0 U UG/L				
SELENIUM	5.0 U UG/L	5.0 U UG/L				
SILVER	3.0 U UG/L	3.0 U UG/L				
SODIUM	30400 UG/L	500 U UG/L				
THALLIUM	10.0 U UG/L	10.0 U UG/L				
VANADIUM	5.0 U UG/L	5.0 U UG/L				
ZINC	17.4 UG/L	10.0 U UG/L				

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W32TB00600 32 3/21/98	W32TB00700 32 3/25/98	W32TB01300 32 4/4/98	W33FB00100 33 3/20/98	W33RB00100 33 3/20/98	W33TB00100 33 3/18/98
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES						
1,1,1-TRICHLOROETHANE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
1,1,2,2-TETRACHLOROETHANE	0.2 U UG/L	0.2 U UG/L	0.2 U UG/L	0.2 UJ UG/L	0.2 U UG/L	0.2 U UG/L
1,1,2-TRICHLOROETHANE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
1,1-DICHLOROETHANE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
1,1-DICHLOROETHENE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROETHANE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROETHENE (TOTAL)	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
1,2-DICHLOROPROPANE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
2-BUTANONE	1 UR UG/L	1.0 UR UG/L	1 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L
2-HEXANONE	1 UJ UG/L	1.0 UJ UG/L	1 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L
4-METHYL-2-PENTANONE	1 U UG/L	1.0 UJ UG/L	1 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L
ACETONE	1 UR UG/L	1.0 UR UG/L	1 UR UG/L	1.0 UR UG/L	1.0 UR UG/L	1.0 UR UG/L
BENZENE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
BROMODICHLOROMETHANE	0.6 U UG/L	0.6 U UG/L	0.6 U UG/L	1.0 J UG/L	0.6 U UG/L	0.6 U UG/L
BROMOFORM	1 U UG/L	1.0 U UG/L	1 U UG/L	0.7 J UG/L	1.0 U UG/L	1.0 U UG/L
BROMOMETHANE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
CARBON DISULFIDE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
CARBON TETRACHLORIDE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L
CHLOROBENZENE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROETHANE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROFORM	1 U UG/L	1.0 U UG/L	1 U UG/L	0.8 J UG/L	1.0 U UG/L	1.0 U UG/L
CHLOROMETHANE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
CIS-1,3-DICHLOROPROPENE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
DIBROMOCHLOROMETHANE	1 U UG/L	1.0 U UG/L	1 U UG/L	2.0 J UG/L	1.0 U UG/L	1.0 U UG/L
ETHYLBENZENE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
METHYL TERT-BUTYL ETHER	1 UJ UG/L	1.0 UJ UG/L	1 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L
METHYLENE CHLORIDE	1 U UG/L	0.5 J UG/L	1 U UG/L	0.9 J UG/L	0.7 J UG/L	0.8 J UG/L
STYRENE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
TETRACHLOROETHENE	1 U UG/L	1.0 UJ UG/L	1 U UG/L	1.0 UJ UG/L	1.0 UJ UG/L	1.0 UJ UG/L
TOLUENE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
TRANS-1,3-DICHLOROPROPENE	1 UJ UG/L	1.0 UJ UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
TRICHLOROETHENE	1 U UG/L	1.0 U UG/L	1 U UG/L	0.2 J UG/L	1.0 U UG/L	1.0 U UG/L

Blank ' ɜ indicates chemical not analyzed.

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APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32TB00600	W32TB00700	W32TB01300	W33FB00100	W33RB00100	W33TB00100
SITE	32	32	32	33	33	33
DATE SAMPLED	3/21/98	3/25/98	4/4/98	3/20/98	3/20/98	3/18/98
VINYL CHLORIDE	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
XYLENES, TOTAL	1 U UG/L	1.0 U UG/L	1 U UG/L	1.0 UJ UG/L	1.0 U UG/L	1.0 U UG/L
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE					5 U UG/L	5 U UG/L
1,2-DICHLOROBENZENE					5 U UG/L	5 U UG/L
1,3-DICHLOROBENZENE					5 U UG/L	5 U UG/L
1,4-DICHLOROBENZENE					5 U UG/L	5 U UG/L
2,2'-OXYBIS(1-CHLOROPROPANE)					5 U UG/L	5 U UG/L
2,4,5-TRICHLOROPHENOL					4 U UG/L	4 U UG/L
2,4,6-TRICHLOROPHENOL					5 U UG/L	5 U UG/L
2,4-DICHLOROPHENOL					4 U UG/L	4 U UG/L
2,4-DIMETHYLPHENOL					5 U UG/L	5 U UG/L
2,4-DINITROPHENOL					5 U UG/L	5 U UG/L
2,4-DINITROTOLUENE					0.2 U UG/L	0.2 U UG/L
2,6-DINITROTOLUENE					0.2 UG/L	0.2 J UG/L
2-CHLORONAPHTHALENE					5 U UG/L	5 U UG/L
2-CHLOROPHENOL					5 U UG/L	5 U UG/L
2-METHYLNAPHTHALENE					5 U UG/L	5 U UG/L
2-METHYLPHENOL					5 U UG/L	5 U UG/L
2-NITROANILINE					5 U UG/L	5 U UG/L
2-NITROPHENOL					5 U UG/L	5 U UG/L
3,3'-DICHLOROBENZIDINE					5 U UG/L	5 U UG/L
3-NITROANILINE					5 UJ UG/L	5 UJ UG/L
4,6-DINITRO-2-METHYLPHENOL					5 U UG/L	5 U UG/L
4-BROMOPHENYL PHENYL ETHER					5 U UG/L	5 U UG/L
4-CHLORO-3-METHYLPHENOL					5 U UG/L	5 U UG/L
4-CHLOROANILINE					5 U UG/L	5 U UG/L
4-CHLOROPHENYL PHENYL ETHER					5 U UG/L	5 U UG/L
4-METHYLPHENOL					5 U UG/L	5 U UG/L
4-NITROANILINE					5 U UG/L	5 U UG/L
4-NITROPHENOL					5 U UG/L	5 U UG/L
ACENAPHTHENE					5 U UG/L	5 U UG/L
ACENAPHTHYLENE					5 U UG/L	5 U UG/L
ANTHRACENE					5 U UG/L	5 U UG/L

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W32TB00600 32 3/21/98	W32TB00700 32 3/25/98	W32TB01300 32 4/4/98	W33FB00100 33 3/20/98	W33RB00100 33 3/20/98	W33TB00100 33 3/18/98
BENZO(A)ANTHRACENE					4 U UG/L	4 U UG/L
BENZO(A)PYRENE					0.2 U UG/L	0.2 U UG/L
BENZO(B)FLUORANTHENE					4 U UG/L	4 U UG/L
BENZO(G,H,I)PERYLENE					5 U UG/L	5 U UG/L
BENZO(K)FLUORANTHENE					4 U UG/L	4 U UG/L
BIS(2-CHLOROETHOXY)METHANE					5 U UG/L	5 U UG/L
BIS(2-CHLOROETHYL)ETHER					1 U UG/L	1 U UG/L
BIS(2-ETHYLHEXYL)PHTHALATE					5 U UG/L	1 J UG/L
BUTYLBENZYL PHTHALATE					5 U UG/L	5 U UG/L
CARBAZOLE					5 U UG/L	5 U UG/L
CHRYSENE					5 U UG/L	5 U UG/L
DI-N-BUTYL PHTHALATE					5 U UG/L	5 U UG/L
DI-N-OCTYL PHTHALATE					5 U UG/L	5 U UG/L
DIBENZO(A,H)ANTHRACENE					5 U UG/L	5 U UG/L
DIBENZOFURAN					5 U UG/L	5 U UG/L
DIETHYL PHTHALATE					5 U UG/L	5 U UG/L
DIMETHYL PHTHALATE					5 U UG/L	5 U UG/L
FLUORANTHENE					5 U UG/L	5 U UG/L
FLUORENE					5 U UG/L	5 U UG/L
HEXACHLOROBENZENE					1 U UG/L	1 UJ UG/L
HEXACHLOROBUTADIENE					5 U UG/L	5 U UG/L
HEXACHLOROCYCLOPENTADIENE					5 U UG/L	5 U UG/L
HEXACHLOROETHANE					5 U UG/L	5 U UG/L
INDENO(1,2,3-CD)PYRENE					5 U UG/L	5 U UG/L
ISOPHORONE					5 U UG/L	5 U UG/L
N-NITROSO-DI-N-PROPYLAMINE					4 U UG/L	4 U UG/L
N-NITROSODIPHENYLAMINE					5 U UG/L	5 U UG/L
NAPHTHALENE					5 U UG/L	5 U UG/L
NITROBENZENE					5 U UG/L	5 U UG/L
PENTACHLOROPHENOL					1 U UG/L	1 U UG/L
PHENANTHRENE					5 U UG/L	5 U UG/L
PHENOL					5 U UG/L	5 U UG/L
PYRENE					5 U UG/L	5 U UG/L
PESTICIDES/PCBs						

Blank ... e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W32TB00600 32 3/21/98	W32TB00700 32 3/25/98	W32TB01300 32 4/4/98	W33FB00100 33 3/20/98	W33RB00100 33 3/20/98	W33TB00100 33 3/18/98
4,4'-DDD					0.10 U UG/L	0.10 U UG/L
4,4'-DDE					0.10 U UG/L	0.10 U UG/L
4,4'-DDT					0.10 U UG/L	0.10 U UG/L
ALDRIN					0.051 U UG/L	0.050 U UG/L
ALPHA-BHC					0.051 U UG/L	0.050 U UG/L
ALPHA-CHLORDANE					0.051 U UG/L	0.050 U UG/L
AROCLOR-1016					1.0 U UG/L	1.0 U UG/L
AROCLOR-1221					2.0 U UG/L	2.0 U UG/L
AROCLOR-1232					1.0 U UG/L	1.0 U UG/L
AROCLOR-1242					1.0 U UG/L	1.0 U UG/L
AROCLOR-1248					1.0 U UG/L	1.0 U UG/L
AROCLOR-1254					1.0 U UG/L	1.0 U UG/L
AROCLOR-1260					1.0 U UG/L	1.0 U UG/L
BETA-BHC					0.051 U UG/L	0.050 U UG/L
DELTA-BHC					0.051 U UG/L	0.050 U UG/L
DIELDRIN					0.003 J UG/L	0.10 U UG/L
ENDOSULFAN I					0.051 U UG/L	0.050 U UG/L
ENDOSULFAN II					0.10 U UG/L	0.10 U UG/L
ENDOSULFAN SULFATE					0.10 U UG/L	0.10 U UG/L
ENDRIN					0.10 U UG/L	0.10 U UG/L
ENDRIN ALDEHYDE					0.10 U UG/L	0.10 U UG/L
ENDRIN KETONE					0.10 U UG/L	0.10 U UG/L
GAMMA-BHC (LINDANE)					0.051 U UG/L	0.050 U UG/L
GAMMA-CHLORDANE					0.051 U UG/L	0.050 U UG/L
HEPTACHLOR					0.051 U UG/L	0.050 U UG/L
HEPTACHLOR EPOXIDE					0.051 U UG/L	0.050 U UG/L
METHOXYCHLOR					0.51 U UG/L	0.50 U UG/L
TOXAPHENE					5.1 U UG/L	5.0 U UG/L
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS						
TPH (C8-C40)					0.5 U MG/L	0.5 U MG/L
INORGANICS						
ALUMINUM					200 U UG/L	200 U UG/L
ANTIMONY					5.0 U UG/L	5.0 U UG/L

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W32TB00600 32 3/21/98	W32TB00700 32 3/25/98	W32TB01300 32 4/4/98	W33FB00100 33 3/20/98	W33RB00100 33 3/20/98	W33TB00100 33 3/18/98
ARSENIC					10.0 U UG/L	10.0 U UG/L
BARIUM					66.0 UG/L	10.0 U UG/L
BERYLLIUM					3.0 U UG/L	3.0 U UG/L
CADMIUM					3.0 U UG/L	3.0 U UG/L
CALCIUM					1420 UG/L	1000 U UG/L
CHROMIUM					5.0 U UG/L	5.0 U UG/L
COBALT					5.0 U UG/L	5.0 U UG/L
COPPER					5.1 UG/L	5.0 U UG/L
CYANIDE						
IRON					100 U UG/L	100 U UG/L
LEAD					3.0 U UG/L	3.0 U UG/L
MAGNESIUM					768 UG/L	50.0 U UG/L
MANGANESE					5.0 U UG/L	5.0 U UG/L
MERCURY					0.20 U UG/L	0.20 U UG/L
NICKEL					5.0 U UG/L	5.0 U UG/L
POTASSIUM					252 U UG/L	50.0 U UG/L
SELENIUM					5.0 U UG/L	5.0 U UG/L
SILVER					3.0 U UG/L	3.0 U UG/L
SODIUM					31300 UG/L	500 U UG/L
THALLIUM					10.0 U UG/L	10.0 U UG/L
VANADIUM					5.0 U UG/L	5.0 U UG/L
ZINC					20.7 UG/L	10.0 U UG/L

Blank e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33TB00200	W33TB00300	33SBFB1	33SBRB02	33SBRB1	33SBRB3	33SBTB02
SITE	33	33	33	33	33	33	33
DATE SAMPLED	3/19/98	3/20/98	12/1/92	12/2/92	12/1/92	12/3/92	12/2/92
PARAMETER	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
VOLATILES							
1,1,1-TRICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1,2,2-TETRACHLOROETHANE	0.2 U UG/L	0.2 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1,2-TRICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1-DICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,1-DICHLOROETHENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,2-DICHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,2-DICHLOROETHENE (TOTAL)	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
1,2-DICHLOROPROPANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
2-BUTANONE	1.0 UR UG/L	1.0 UR UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
2-HEXANONE	1.0 UJ UG/L	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
4-METHYL-2-PENTANONE	1.0 UJ UG/L	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
ACETONE	1.0 UR UG/L	1.0 UR UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	8 J ug/l
BENZENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
BROMODICHLOROMETHANE	0.6 U UG/L	0.6 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
BROMOFORM	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
BROMOMETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
CARBON DISULFIDE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
CARBON TETRACHLORIDE	1.0 UJ UG/L	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
CHLOROBENZENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
CHLOROETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
CHLOROFORM	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
CHLOROMETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
CIS-1,3-DICHLOROPROPENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
DIBROMOCHLOROMETHANE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
ETHYLBENZENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
METHYL TERT-BUTYL ETHER	1.0 UJ UG/L	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
METHYLENE CHLORIDE	0.8 J UG/L	0.8 J UG/L	4 J ug/l	3 J ug/l	3 J ug/l	1 J ug/l	4 J ug/l
STYRENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
TETRACHLOROETHENE	1.0 UJ UG/L	1.0 UJ UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
TOLUENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
TRANS-1,3-DICHLOROPROPENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
TRICHLOROETHENE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W33TB00200 33 3/19/98	W33TB00300 33 3/20/98	33SBFB1 33 12/1/92	33SBRB02 33 12/2/92	33SBRB1 33 12/1/92	33SBRB3 33 12/3/92	33SBTB02 33 12/2/92
VINYL CHLORIDE	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
XYLENES, TOTAL	1.0 U UG/L	1.0 U UG/L	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
SEMIVOLATILES							
1,2,4-TRICHLOROBENZENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
1,2-DICHLOROBENZENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
1,3-DICHLOROBENZENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
1,4-DICHLOROBENZENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2,2'-OXYBIS(1-CHLOROPROPANE)							
2,4,5-TRICHLOROPHENOL			25 U ug/l	25 U ug/l	25 U ug/l	25 U ug/l	
2,4,6-TRICHLOROPHENOL			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2,4-DICHLOROPHENOL			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2,4-DIMETHYLPHENOL			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2,4-DINITROPHENOL			25 UJ ug/l	25 UJ ug/l	25 UJ ug/l	25 UJ ug/l	
2,4-DINITROTOLUENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2,6-DINITROTOLUENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2-CHLORONAPHTHALENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2-CHLOROPHENOL			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2-METHYLNAPHTHALENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2-METHYLPHENOL			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
2-NITROANILINE			25 UJ ug/l	25 UJ ug/l	25 UJ ug/l	25 U ug/l	
2-NITROPHENOL			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
3,3'-DICHLOROBENZIDINE			10 UJ ug/l	10 UJ ug/l	10 UJ ug/l	10 U ug/l	
3-NITROANILINE			25 U ug/l	25 U ug/l	25 U ug/l	25 UJ ug/l	
4,6-DINITRO-2-METHYLPHENOL			25 U ug/l	25 U ug/l	25 U ug/l	25 U ug/l	
4-BROMOPHENYL PHENYL ETHER			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
4-CHLORO-3-METHYLPHENOL			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
4-CHLOROANILINE			10 U ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	10 U ug/l
4-CHLOROPHENYL PHENYL ETHER			10 U ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	
4-METHYLPHENOL			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
4-NITROANILINE			25 U ug/l	25 U ug/l	25 U ug/l	25 UJ ug/l	
4-NITROPHENOL			25 UJ ug/l	25 UJ ug/l	25 UJ ug/l	25 UJ ug/l	
ACENAPHTHENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
ACENAPHTHYLENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
ANTHRACENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	

Blank) indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33TB00200	W33TB00300	33SBFB1	33SBRB02	33SBRB1	33SBRB3	33SBTB02
SITE	33	33	33	33	33	33	33
DATE SAMPLED	3/19/98	3/20/98	12/1/92	12/2/92	12/1/92	12/3/92	12/2/92
BENZO(A)ANTHRACENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BENZO(A)PYRENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BENZO(B)FLUORANTHENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BENZO(G,H,I)PERYLENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BENZO(K)FLUORANTHENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BIS(2-CHLOROETHOXY)METHANE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BIS(2-CHLOROETHYL)ETHER			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BIS(2-ETHYLHEXYL)PHTHALATE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
BUTYLBENZYL PHTHALATE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
CARBAZOLE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l
CHRYSENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
DI-N-BUTYL PHTHALATE			10 ug/l	7 J ug/l	8 J ug/l	7 J ug/l	
DI-N-OCTYL PHTHALATE			10 U ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	
DIBENZO(A,H)ANTHRACENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
DIBENZOFURAN			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
DIETHYL PHTHALATE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
DIMETHYL PHTHALATE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
FLUORANTHENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
FLUORENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
HEXACHLOROBENZENE			10 U ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	
HEXACHLOROBUTADIENE			10 U ug/l	10 U ug/l	10 U ug/l	10 UJ ug/l	
HEXACHLOROCYCLOPENTADIENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
HEXACHLOROETHANE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
INDENO(1,2,3-CD)PYRENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
ISOPHORONE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
N-NITROSO-DI-N-PROPYLAMINE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
N-NITROSODIPHENYLAMINE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
NAPHTHALENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
NITROBENZENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
PENTACHLOROPHENOL			25 U ug/l	25 U ug/l	25 U ug/l	25 U ug/l	
PHENANTHRENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
PHENOL			10 UJ ug/l	10 UJ ug/l	10 UJ ug/l	10 U ug/l	
PYRENE			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
PESTICIDES/PCBs							

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W33TB00200 33 3/19/98	W33TB00300 33 3/20/98	33SBFB1 33 12/1/92	33SBRB02 33 12/2/92	33SBRB1 33 12/1/92	33SBRB3 33 12/3/92	33SBTB02 33 12/2/92
4,4'-DDD			0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	
4,4'-DDE			0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	
4,4'-DDT			0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	
ALDRIN			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
ALPHA-BHC			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
ALPHA-CHLORDANE			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
AROCLOR-1016			1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	
AROCLOR-1221			2 UJ ug/l	2 UJ ug/l	2 UJ ug/l	2 UJ ug/l	
AROCLOR-1232			1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	
AROCLOR-1242			1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	
AROCLOR-1248			1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	
AROCLOR-1254			1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	
AROCLOR-1260			1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	1 UJ ug/l	
BETA-BHC			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
DELTA-BHC			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
DIELDRIN			0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	
ENDOSULFAN I			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
ENDOSULFAN II			0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	
ENDOSULFAN SULFATE			0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	
ENDRIN			0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	
ENDRIN ALDEHYDE							
ENDRIN KETONE			0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	0.1 UJ ug/l	
GAMMA-BHC (LINDANE)			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
GAMMA-CHLORDANE			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
HEPTACHLOR			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
HEPTACHLOR EPOXIDE			0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	0.05 UJ ug/l	
METHOXYCHLOR			0.5 UJ ug/l	0.5 UJ ug/l	0.5 UJ ug/l	0.5 UJ ug/l	
TOXAPHENE			5 UJ ug/l	5 UJ ug/l	5 UJ ug/l	5 UJ ug/l	
PETROLEUM HYDROCARBONS							
TOTAL PETROLEUM HYDROCARBONS			0.05 U mg/l	0.05 U mg/l	0.05 U mg/l	0.05 U mg/l	
TPH (C8-C40)			10 U ug/l	10 U ug/l	10 U ug/l	10 U ug/l	
INORGANICS							
ALUMINUM			31 U ug/l	31 U ug/l	31 U ug/l	31 U ug/l	
ANTIMONY			12.1 U ug/l	12.1 U ug/l	12.1 U ug/l	12.1 U ug/l	

Blank e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W33TB00200 33 3/19/98	W33TB00300 33 3/20/98	33SBFB1 33 12/1/92	33SBRB02 33 12/2/92	33SBRB1 33 12/1/92	33SBRB3 33 12/3/92	33SBTB02 33 12/2/92
ARSENIC			0.7 U ug/l	0.7 U ug/l	0.7 U ug/l	0.7 U ug/l	
BARIUM			0.44 J ug/l	0.44 J ug/l	0.44 J ug/l	0.8 J ug/l	
BERYLLIUM			0.5 U ug/l	0.5 U ug/l	0.5 U ug/l	0.5 U ug/l	
CADMIUM			1.2 U ug/l	1.2 U ug/l	1.2 U ug/l	1.2 U ug/l	
CALCIUM			103 U ug/l	103 U ug/l	103 U ug/l	103 U ug/l	
CHROMIUM			3.7 U ug/l	3.7 U ug/l	3.7 U ug/l	3.7 U ug/l	
COBALT			5.8 U ug/l	5.8 U ug/l	5.8 U ug/l	5.8 U ug/l	
COPPER			0.9 U ug/l	2 J ug/l	0.9 U ug/l	0.9 U ug/l	
CYANIDE			3 U ug/l	3 U ug/l	3 U ug/l	3 U ug/l	
IRON			3.3 J ug/l	8.6 J ug/l	8.4 J ug/l	150 ug/l	
LEAD			0.6 U ug/l	0.6 U ug/l	0.6 U ug/l	0.6 U ug/l	
MAGNESIUM			15.8 J ug/l	14.3 U ug/l	14.3 U ug/l	19.5 J ug/l	
MANGANESE			0.8 U ug/l	0.8 U ug/l	0.8 U ug/l	1.3 J ug/l	
MERCURY			0.1 U ug/l	0.1 U ug/l	0.1 U ug/l	0.1 U ug/l	
NICKEL			7.7 U ug/l	7.7 U ug/l	7.7 U ug/l	7.7 U ug/l	
POTASSIUM			191 U ug/l	191 U ug/l	191 U ug/l	191 U ug/l	
SELENIUM			0.5 U ug/l	0.59 J ug/l	0.5 U ug/l	0.5 U ug/l	
SILVER			2.1 UJ ug/l	2.1 U ug/l	2.1 UJ ug/l	2.1 UJ ug/l	
SODIUM			46.4 J ug/l	60.7 J ug/l	71.4 J ug/l	71.4 J ug/l	
THALLIUM			0.7 U ug/l	0.7 U ug/l	0.7 U ug/l	0.7 U ug/l	
VANADIUM			1.9 U ug/l	1.9 U ug/l	1.9 U ug/l	1.9 U ug/l	
ZINC			5.6 J ug/l	5.9 J ug/l	3.6 J ug/l	14.7 J ug/l	

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SBTB03
SITE	33
DATE SAMPLED	12/3/92
PARAMETER	RESULT
VOLATILES	
1,1,1-TRICHLOROETHANE	10 U ug/l
1,1,2,2-TETRACHLOROETHANE	10 U ug/l
1,1,2-TRICHLOROETHANE	10 U ug/l
1,1-DICHLOROETHANE	10 U ug/l
1,1-DICHLOROETHENE	10 U ug/l
1,2-DICHLOROETHANE	10 U ug/l
1,2-DICHLOROETHENE (TOTAL)	10 U ug/l
1,2-DICHLOROPROPANE	10 U ug/l
2-BUTANONE	10 U ug/l
2-HEXANONE	10 U ug/l
4-METHYL-2-PENTANONE	10 U ug/l
ACETONE	10 U ug/l
BENZENE	10 U ug/l
BROMODICHLOROMETHANE	10 U ug/l
BROMOFORM	10 U ug/l
BROMOMETHANE	10 U ug/l
CARBON DISULFIDE	10 U ug/l
CARBON TETRACHLORIDE	10 U ug/l
CHLOROBENZENE	10 U ug/l
CHLOROETHANE	10 U ug/l
CHLOROFORM	10 U ug/l
CHLOROMETHANE	10 U ug/l
CIS-1,3-DICHLOROPROPENE	10 U ug/l
DIBROMOCHLOROMETHANE	10 U ug/l
ETHYLBENZENE	10 U ug/l
METHYL TERT-BUTYL ETHER	
METHYLENE CHLORIDE	6 J ug/l
STYRENE	10 U ug/l
TETRACHLOROETHENE	10 U ug/l
TOLUENE	10 U ug/l
TRANS-1,3-DICHLOROPROPENE	10 U ug/l
TRICHLOROETHENE	10 U ug/l

Blank indicates chemical not analyzed.

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APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SBTB03
SITE	33
DATE SAMPLED	12/3/92
VINYL CHLORIDE	10 U ug/l
XYLENES, TOTAL	10 U ug/l
SEMIVOLATILES	
1,2,4-TRICHLOROBENZENE	
1,2-DICHLOROBENZENE	
1,3-DICHLOROBENZENE	
1,4-DICHLOROBENZENE	
2,2'-OXYBIS(1-CHLOROPROPANE)	
2,4,5-TRICHLOROPHENOL	
2,4,6-TRICHLOROPHENOL	
2,4-DICHLOROPHENOL	
2,4-DIMETHYLPHENOL	
2,4-DINITROPHENOL	
2,4-DINITROTOLUENE	
2,6-DINITROTOLUENE	
2-CHLORONAPHTHALENE	
2-CHLOROPHENOL	
2-METHYLNAPHTHALENE	
2-METHYLPHENOL	
2-NITROANILINE	
2-NITROPHENOL	
3,3'-DICHLOROBENZIDINE	
3-NITROANILINE	
4,6-DINITRO-2-METHYLPHENOL	
4-BROMOPHENYL PHENYL ETHER	
4-CHLORO-3-METHYLPHENOL	
4-CHLOROANILINE	10 U ug/l
4-CHLOROPHENYL PHENYL ETHER	
4-METHYLPHENOL	
4-NITROANILINE	
4-NITROPHENOL	
ACENAPHTHENE	
ACENAPHTHYLENE	
ANTHRACENE	

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SBTB03
SITE	33
DATE SAMPLED	12/3/92
BENZO(A)ANTHRACENE	
BENZO(A)PYRENE	
BENZO(B)FLUORANTHENE	
BENZO(G,H,I)PERYLENE	
BENZO(K)FLUORANTHENE	
BIS(2-CHLOROETHOXY)METHANE	
BIS(2-CHLOROETHYL)ETHER	
BIS(2-ETHYLHEXYL)PHTHALATE	
BUTYLBENZYL PHTHALATE	
CARBAZOLE	10 U ug/l
CHRYSENE	
DI-N-BUTYL PHTHALATE	
DI-N-OCTYL PHTHALATE	
DIBENZO(A,H)ANTHRACENE	
DIBENZOFURAN	
DIETHYL PHTHALATE	
DIMETHYL PHTHALATE	
FLUORANTHENE	
FLUORENE	
HEXACHLOROBENZENE	
HEXACHLOROBUTADIENE	
HEXACHLOROCYCLOPENTADIENE	
HEXACHLOROETHANE	
INDENO(1,2,3-CD)PYRENE	
ISOPHORONE	
N-NITROSO-DI-N-PROPYLAMINE	
N-NITROSODIPHENYLAMINE	
NAPHTHALENE	
NITROBENZENE	
PENTACHLOROPHENOL	
PHENANTHRENE	
PHENOL	
PYRENE	
PESTICIDES/PCBs	

Blank [illegible]e indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	33SBTB03 33 12/3/92
4,4'-DDD	
4,4'-DDE	
4,4'-DDT	
ALDRIN	
ALPHA-BHC	
ALPHA-CHLORDANE	
AROCLOR-1016	
AROCLOR-1221	
AROCLOR-1232	
AROCLOR-1242	
AROCLOR-1248	
AROCLOR-1254	
AROCLOR-1260	
BETA-BHC	
DELTA-BHC	
DIELDRIN	
ENDOSULFAN I	
ENDOSULFAN II	
ENDOSULFAN SULFATE	
ENDRIN	
ENDRIN ALDEHYDE	
ENDRIN KETONE	
GAMMA-BHC (LINDANE)	
GAMMA-CHLORDANE	
HEPTACHLOR	
HEPTACHLOR EPOXIDE	
METHOXYCHLOR	
TOXAPHENE	
PETROLEUM HYDROCARBONS	
TOTAL PETROLEUM HYDROCARBONS	
TPH (C8-C40)	
INORGANICS	
ALUMINUM	
ANTIMONY	

Blank space indicates chemical not analyzed.

APPENDIX B
QUALITY CONTROL DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS
AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	33SBTB03 33 12/3/92
ARSENIC	
BARIUM	
BERYLLIUM	
CADMIUM	
CALCIUM	
CHROMIUM	
COBALT	
COPPER	
CYANIDE	
IRON	
LEAD	
MAGNESIUM	
MANGANESE	
MERCURY	
NICKEL	
POTASSIUM	
SELENIUM	
SILVER	
SODIUM	
THALLIUM	
VANADIUM	
ZINC	

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB1-25-27MS	3SB1-25-27MSD	3SB6-70-72MS	3SB6-70-72MSD	3SB8-15_MS	3SB8-15_MSD
SITE	3	3	3	3	3	3
DATE SAMPLED	1/20/93	1/20/93	1/18/93	1/18/93	1/8/93	1/8/93
VOLATILES	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
1,1,1-TRICHLOROETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
1,1,2,2-TETRACHLOROETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
1,1,2-TRICHLOROETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
1,1-DICHLOROETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
1,1-DICHLOROETHENE	33 ug/kg	40 ug/kg	39 ug/kg	42 ug/kg	11 U ug/kg	11 U ug/kg
1,2-DICHLOROETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
1,2-DICHLOROETHENE (TOTAL)	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
1,2-DICHLOROPROPANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
2-BUTANONE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
2-HEXANONE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
4-METHYL-2-PENTANONE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
ACETONE	11 U ug/kg	11 U ug/kg	14 ug/kg	11 ug/kg	18 ug/kg	28 ug/kg
BENZENE	41 ug/kg	45 ug/kg	46 ug/kg	51 ug/kg	11 U ug/kg	11 U ug/kg
BROMODICHLOROMETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
BROMOFORM	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
BROMOMETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
CARBON DISULFIDE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
CARBON TETRACHLORIDE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
CHLOROBENZENE	49 ug/kg	51 ug/kg	49 ug/kg	55 ug/kg	11 U ug/kg	11 U ug/kg
CHLOROETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
CHLOROFORM	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
CHLOROMETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
CIS-1,3-DICHLOROPROPENE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
DIBROMOCHLOROMETHANE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
ETHYLBENZENE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
METHYL TERT-BUTYL ETHER						
METHYLENE CHLORIDE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	4 J ug/kg	5 J ug/kg
STYRENE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
TETRACHLOROETHENE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
TOLUENE	50 ug/kg	51 ug/kg	48 ug/kg	52 ug/kg	11 U ug/kg	11 U ug/kg

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	3SB1-25-27MS 3 1/20/93	3SB1-25-27MSD 3 1/20/93	3SB6-70-72MS 3 1/18/93	3SB6-70-72MSD 3 1/18/93	3SB8-15_MS 3 1/8/93	3SB8-15_MSD 3 1/8/93
TRANS-1,3-DICHLOROPROPENE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
TRICHLOROETHENE	45 ug/kg	49 ug/kg	49 ug/kg	53 ug/kg	11 U ug/kg	11 U ug/kg
VINYL CHLORIDE	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
XYLENES, TOTAL	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg	11 U ug/kg
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
1,2-DICHLOROBENZENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
1,3-DICHLOROBENZENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
1,4-DICHLOROBENZENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2,4,5-TRICHLOROPHENOL	870 U ug/kg	870 U ug/kg	880 U ug/kg	880 U ug/kg	920 U ug/kg	920 U ug/kg
2,4,6-TRICHLOROPHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2,4-DICHLOROPHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2,4-DIMETHYLPHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2,4-DINITROPHENOL	870 U ug/kg	870 U ug/kg	880 U ug/kg	880 U ug/kg	920 U ug/kg	920 U ug/kg
2,4-DINITROTOLUENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2,6-DINITROTOLUENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2-CHLORONAPHTHALENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2-CHLOROPHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2-METHYLNAPHTHALENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2-METHYLPHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
2-NITROANILINE	870 U ug/kg	870 U ug/kg	880 U ug/kg	880 U ug/kg	920 U ug/kg	920 U ug/kg
2-NITROPHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
3,3'-DICHLOROBENZIDINE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
3-NITROANILINE	870 U ug/kg	870 U ug/kg	880 U ug/kg	880 U ug/kg	920 U ug/kg	920 U ug/kg
4,6-DINITRO-2-METHYLPHENOL	870 U ug/kg	870 U ug/kg	880 U ug/kg	880 U ug/kg	920 U ug/kg	920 U ug/kg
4-BROMOPHENYL PHENYL ETHER	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
4-CHLORO-3-METHYLPHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
4-CHLOROANILINE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
4-CHLOROPHENYL PHENYL ETHER	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
4-METHYLPHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg

Blank space indicates chemical not analyzed.

R4708989

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB1-25-27MS	3SB1-25-27MSD	3SB6-70-72MS	3SB6-70-72MSD	3SB8-15_MS	3SB8-15_MSD
SITE	3	3	3	3	3	3
DATE SAMPLED	1/20/93	1/20/93	1/18/93	1/18/93	1/8/93	1/8/93
4-NITROANILINE	870 U ug/kg	870 U ug/kg	880 U ug/kg	880 U ug/kg	920 U ug/kg	920 U ug/kg
4-NITROPHENOL	870 U ug/kg	870 U ug/kg	880 U ug/kg	880 U ug/kg	920 U ug/kg	920 U ug/kg
ACENAPHTHENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
ACENAPHTHYLENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
ANTHRACENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
BENZO(A)ANTHRACENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
BENZO(A)PYRENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
BENZO(B)FLUORANTHENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
BENZO(G,H,I)PERYLENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
BENZO(K)FLUORANTHENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
BIS(2-CHLOROETHOXY)METHANE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
BIS(2-CHLOROETHYL)ETHER	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
BIS(2-ETHYLHEXYL)PHTHALATE	100 J ug/kg	180 J ug/kg	360 U ug/kg	47 J ug/kg	880 ug/kg	290 J ug/kg
BUTYLBENZYL PHTHALATE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
CARBAZOLE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
CHRYSENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
DI-N-BUTYL PHTHALATE	360 U ug/kg	360 U ug/kg	46 J ug/kg	49 J ug/kg	380 U ug/kg	380 U ug/kg
DI-N-OCTYL PHTHALATE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
DIBENZO(A,H)ANTHRACENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
DIBENZOFURAN	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
DIETHYL PHTHALATE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	98 J ug/kg	100 J ug/kg
DIMETHYL PHTHALATE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
FLUORANTHENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
FLUORENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
HEXACHLOROBENZENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
HEXACHLOROBUTADIENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
HEXACHLOROCYCLOPENTADIENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
HEXACHLOROETHANE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
INDENO(1,2,3-CD)PYRENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
ISOPHORONE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
N-NITROSO-DI-N-PROPYLAMINE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB1-25-27MS	3SB1-25-27MSD	3SB6-70-72MS	3SB6-70-72MSD	3SB8-15_MS	3SB8-15_MSD
SITE	3	3	3	3	3	3
DATE SAMPLED	1/20/93	1/20/93	1/18/93	1/18/93	1/8/93	1/8/93
N-NITROSODIPHENYLAMINE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
NAPHTHALENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
NITROBENZENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
PENTACHLOROPHENOL	870 U ug/kg	870 U ug/kg	880 U ug/kg	880 U ug/kg	920 U ug/kg	920 U ug/kg
PHENANTHRENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
PHENOL	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
PYRENE	360 U ug/kg	360 U ug/kg	360 U ug/kg	360 U ug/kg	380 U ug/kg	380 U ug/kg
PESTICIDES/PCBs						
4,4'-DDD	3.5 U ug/kg	3.5 U ug/kg	3.6 U ug/kg	3.6 U ug/kg	3.8 U ug/kg	3.8 U ug/kg
4,4'-DDE	3.5 U ug/kg	3.5 U ug/kg	3.6 U ug/kg	3.6 U ug/kg	3.8 U ug/kg	3.8 U ug/kg
4,4'-DDT	35 ug/kg	35 ug/kg	26 ug/kg	34 ug/kg	3.8 U ug/kg	3.8 U ug/kg
ALDRIN	15 ug/kg	16 ug/kg	13 ug/kg	16 ug/kg	2 U ug/kg	2 U ug/kg
ALPHA-BHC	1.8 U ug/kg	1.8 U ug/kg	1.9 U ug/kg	1.9 U ug/kg	2 U ug/kg	2 U ug/kg
ALPHA-CHLORDANE	1.8 U ug/kg	1.8 U ug/kg	1.9 U ug/kg	1.9 U ug/kg	2 U ug/kg	2 U ug/kg
AROCLOR-1016	35 U ug/kg	35 U ug/kg	36 U ug/kg	36 U ug/kg	38 U ug/kg	38 U ug/kg
AROCLOR-1221	71 U ug/kg	71 U ug/kg	74 U ug/kg	74 U ug/kg	77 U ug/kg	77 U ug/kg
AROCLOR-1232	35 U ug/kg	35 U ug/kg	36 U ug/kg	36 U ug/kg	38 U ug/kg	38 U ug/kg
AROCLOR-1242	35 U ug/kg	35 U ug/kg	36 U ug/kg	36 U ug/kg	38 U ug/kg	38 U ug/kg
AROCLOR-1248	35 U ug/kg	35 U ug/kg	36 U ug/kg	36 U ug/kg	38 U ug/kg	38 U ug/kg
AROCLOR-1254	35 U ug/kg	35 U ug/kg	36 U ug/kg	36 U ug/kg	38 U ug/kg	38 U ug/kg
AROCLOR-1260	35 U ug/kg	35 U ug/kg	36 U ug/kg	36 U ug/kg	38 U ug/kg	38 U ug/kg
BETA-BHC	1.8 U ug/kg	1.8 U ug/kg	1.9 U ug/kg	1.9 U ug/kg	2 U ug/kg	2 U ug/kg
DELTA-BHC	1.8 U ug/kg	1.8 U ug/kg	1.9 U ug/kg	1.9 U ug/kg	2 U ug/kg	2 U ug/kg
DIELDRIN	33 ug/kg	34 ug/kg	25 ug/kg	34 ug/kg	3.8 U ug/kg	3.8 U ug/kg
ENDOSULFAN I	1.8 U ug/kg	1.8 U ug/kg	1.9 U ug/kg	1.9 U ug/kg	2 U ug/kg	2 U ug/kg
ENDOSULFAN II	3.5 U ug/kg	3.5 U ug/kg	3.6 U ug/kg	3.6 U ug/kg	3.8 U ug/kg	3.8 U ug/kg
ENDOSULFAN SULFATE	3.5 U ug/kg	3.5 U ug/kg	3.6 U ug/kg	3.6 U ug/kg	3.8 U ug/kg	3.8 U ug/kg
ENDRIN	32 ug/kg	33 ug/kg	27 ug/kg	37 ug/kg	3.8 U ug/kg	3.8 U ug/kg
ENDRIN ALDEHYDE	3.5 U ug/kg	3.5 U ug/kg	3.6 U ug/kg	3.6 U ug/kg	3.8 U ug/kg	3.8 U ug/kg
ENDRIN KETONE	3.5 U ug/kg	3.5 U ug/kg	3.6 U ug/kg	3.6 U ug/kg	3.8 U ug/kg	3.8 U ug/kg
GAMMA-BHC (LINDANE)	14 ug/kg	16 ug/kg	12 ug/kg	16 ug/kg	2 U ug/kg	2 U ug/kg

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB1-25-27MS	3SB1-25-27MSD	3SB6-70-72MS	3SB6-70-72MSD	3SB8-15_MS	3SB8-15_MSD
SITE	3	3	3	3	3	3
DATE SAMPLED	1/20/93	1/20/93	1/18/93	1/18/93	1/8/93	1/8/93
GAMMA-CHLORDANE	1.8 U ug/kg	1.8 U ug/kg	1.9 U ug/kg	1.9 U ug/kg	2 U ug/kg	2 U ug/kg
HEPTACHLOR	15 ug/kg	15 ug/kg	13 ug/kg	17 ug/kg	2 U ug/kg	2 U ug/kg
HEPTACHLOR EPOXIDE	1.8 U ug/kg	1.8 U ug/kg	1.9 U ug/kg	1.9 U ug/kg	2 U ug/kg	2 U ug/kg
METHOXYCHLOR	18 U ug/kg	18 U ug/kg	19 U ug/kg	19 U ug/kg	20 U ug/kg	20 U ug/kg
TOXAPHENE	180 U ug/kg	180 U ug/kg	190 U ug/kg	190 U ug/kg	200 U ug/kg	200 U ug/kg
INORGANICS						
ALUMINUM						
ANTIMONY						
ARSENIC						
BARIUM						
BERYLLIUM						
CADMIUM						
CALCIUM						
CHROMIUM						
COBALT						
COPPER						
IRON						
LEAD						
MAGNESIUM						
MANGANESE						
MERCURY						
NICKEL						
POTASSIUM						
SELENIUM						
SILVER						
SODIUM						
THALLIUM						
VANADIUM						
ZINC						

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04MS00401 4 3/24/98	W04MS01101 4 3/25/98	6SB3-0-2-MS 6 12/5/92	6SB3-0-2-MSD 6 12/5/92	30B00202MS 30 5/23/96	30B00202MSD 30 5/23/96	30B00502MS 30 6/4/96
VOLATILES	RESULT	RESULT	RESULT	RESULT			
1,1,1-TRICHLOROETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
1,1,2,2-TETRACHLOROETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
1,1,2-TRICHLOROETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
1,1-DICHLOROETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
1,1-DICHLOROETHENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	55 UG/KG	51 UG/KG	54 UG/KG
1,2-DICHLOROETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
1,2-DICHLOROETHENE (TOTAL)	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
1,2-DICHLOROPROPANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
2-BUTANONE	5 UR UG/KG	6 UR UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
2-HEXANONE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
4-METHYL-2-PENTANONE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
ACETONE	5 UJ UG/KG	8 J UG/KG	12 U ug/kg	5 J ug/kg	8 UG/KG	23 UG/KG	16 UG/KG
BENZENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	58 UG/KG	55 UG/KG	53 UG/KG
BROMODICHLOROMETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
BROMOFORM	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
BROMOMETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
CARBON DISULFIDE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
CARBON TETRACHLORIDE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
CHLOROBENZENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	57 UG/KG	55 UG/KG	53 UG/KG
CHLOROETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
CHLOROFORM	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
CHLOROMETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
CIS-1,3-DICHLOROPROPENE	5 UJ UG/KG	6 UJ UG/KG	3000 ug/kg	5400 R ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
DIBROMOCHLOROMETHANE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
ETHYLBENZENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
METHYL TERT-BUTYL ETHER	5 UJ UG/KG	6 UJ UG/KG					
METHYLENE CHLORIDE	5 U UG/KG	14 U UG/KG	2 J ug/kg	2 J ug/kg	11 UG/KG	11 UG/KG	5 UG/KG
STYRENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
TETRACHLOROETHENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
TOLUENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	57 UG/KG	54 UG/KG	53 UG/KG

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER SITE DATE SAMPLED	W04MS00401 4 3/24/98	W04MS01101 4 3/25/98	6SB3-0-2-MS 6 12/5/92	6SB3-0-2-MSD 6 12/5/92	30B00202MS 30 5/23/96	30B00202MSD 30 5/23/96	30B00502MS 30 6/4/96
TRANS-1,3-DICHLOROPROPENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
TRICHLOROETHENE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	56 UG/KG	54 UG/KG	49 UG/KG
VINYL CHLORIDE	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
XYLENES, TOTAL	5 UJ UG/KG	6 UJ UG/KG	12 U ug/kg	12 U ug/kg	11 UG/KG	11 UG/KG	11 UG/KG
SEMIVOLATILES							
1,2,4-TRICHLOROBENZENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	670 UG/KG	670 UG/KG	1200 UG/KG
1,2-DICHLOROBENZENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
1,3-DICHLOROBENZENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
1,4-DICHLOROBENZENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	710 UG/KG	640 UG/KG	1200 UG/KG
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U UG/KG	400 UJ UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
2,4,5-TRICHLOROPHENOL	350 U UG/KG	400 U UG/KG	940 U ug/kg	940 U ug/kg	950 UG/KG	950 UG/KG	4800 UG/KG
2,4,6-TRICHLOROPHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
2,4-DICHLOROPHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
2,4-DIMETHYLPHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
2,4-DINITROPHENOL	350 U UG/KG	400 U UG/KG	940 U ug/kg	940 U ug/kg	950 UG/KG	950 UG/KG	4800 UG/KG
2,4-DINITROTOLUENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	670 UG/KG	730 UG/KG	1300 UG/KG
2,6-DINITROTOLUENE	350 U UG/KG	400 UJ UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
2-CHLORONAPHTHALENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
2-CHLOROPHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	1100 UG/KG	1100 UG/KG	1900 UG/KG
2-METHYLNAPHTHALENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
2-METHYLPHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
2-NITROANILINE	350 UJ UG/KG	400 UJ UG/KG	940 U ug/kg	940 U ug/kg	950 UG/KG	950 UG/KG	4800 UG/KG
2-NITROPHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
3,3'-DICHLOROBENZIDINE	350 UJ UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
3-NITROANILINE	350 UJ UG/KG	400 U UG/KG	940 U ug/kg	940 U ug/kg	950 UG/KG	950 UG/KG	4800 UG/KG
4,6-DINITRO-2-METHYLPHENOL	350 U UG/KG	400 U UG/KG	940 U ug/kg	940 U ug/kg	950 UG/KG	950 UG/KG	4800 UG/KG
4-BROMOPHENYL PHENYL ETHER	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
4-CHLORO-3-METHYLPHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	1100 UG/KG	1300 UG/KG	2100 UG/KG
4-CHLOROANILINE	350 UJ UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
4-CHLOROPHENYL PHENYL ETHER	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
4-METHYLPHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG

Blank space indicates chemical not analyzed.

R4708989

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04MS00401 4 3/24/98	W04MS01101 4 3/25/98	6SB3-0-2-MS 6 12/5/92	6SB3-0-2-MSD 6 12/5/92	30B00202MS 30 5/23/96	30B00202MSD 30 5/23/96	30B00502MS 30 6/4/96
4-NITROANILINE	350 U UG/KG	400 U UG/KG	940 U ug/kg	940 U ug/kg	950 UG/KG	950 UG/KG	4800 UG/KG
4-NITROPHENOL	350 UJ UG/KG	400 UJ UG/KG	940 U ug/kg	940 U ug/kg	880 UG/KG	1000 UG/KG	2200 UG/KG
ACENAPHTHENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	680 UG/KG	750 UG/KG	1400 UG/KG
ACENAPHTHYLENE	350 U UG/KG	400 U UG/KG	51 J ug/kg	120 J ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
ANTHRACENE	350 U UG/KG	400 U UG/KG	220 J ug/kg	320 J ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BENZO(A)ANTHRACENE	350 U UG/KG	400 U UG/KG	2900 ug/kg	5500 R ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BENZO(A)PYRENE	110 U UG/KG	120 U UG/KG	2400 ug/kg	5000 R ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BENZO(B)FLUORANTHENE	350 U UG/KG	400 U UG/KG	2500 ug/kg	4800 R ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BENZO(G,H,I)PERYLENE	350 U UG/KG	400 U UG/KG	1400 ug/kg	2500 ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BENZO(K)FLUORANTHENE	350 U UG/KG	400 U UG/KG	2400 ug/kg	6300 R ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BIS(2-CHLOROETHOXY)METHANE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BIS(2-CHLOROETHYL)ETHER	350 U UG/KG	400 UJ UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	45 J UG/KG	400 U UG/KG	1200 ug/kg	1100 ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
BUTYLBENZYL PHTHALATE	350 U UG/KG	400 U UG/KG	550 ug/kg	330 J ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
CARBAZOLE	350 U UG/KG	400 U UG/KG	610 ug/kg	490 ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
CHRYSENE	350 U UG/KG	400 U UG/KG	3000 ug/kg	5400 R ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
DI-N-BUTYL PHTHALATE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
DI-N-OCTYL PHTHALATE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
DIBENZO(A,H)ANTHRACENE	110 U UG/KG	120 U UG/KG	92 J ug/kg	270 J ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
DIBENZOFURAN	350 U UG/KG	400 U UG/KG	150 J ug/kg	82 J ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
DIETHYL PHTHALATE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
DIMETHYL PHTHALATE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
FLUORANTHENE	350 U UG/KG	400 U UG/KG	3100 R ug/kg	3900 R ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
FLUORENE	350 U UG/KG	400 U UG/KG	260 J ug/kg	160 J ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
HEXACHLOROBENZENE	350 U UG/KG	400 UJ UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
HEXACHLOROBUTADIENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
HEXACHLOROCYCLOPENTADIENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
HEXACHLOROETHANE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
INDENO(1,2,3-CD)PYRENE	350 U UG/KG	400 U UG/KG	2000 ug/kg	3400 R ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
ISOPHORONE	350 U UG/KG	400 UJ UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
N-NITROSO-DI-N-PROPYLAMINE	21 UJ UG/KG	24 U UG/KG	390 U ug/kg	390 U ug/kg	640 UG/KG	660 UG/KG	1300 UG/KG

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04MS00401	W04MS01101	6SB3-0-2-MS	6SB3-0-2-MSD	30B00202MS	30B00202MSD	30B00502MS
SITE	4	4	6	6	30	30	30
DATE SAMPLED	3/24/98	3/25/98	12/5/92	12/5/92	5/23/96	5/23/96	6/4/96
N-NITROSODIPHENYLAMINE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
NAPHTHALENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
NITROBENZENE	350 UJ UG/KG	400 UJ UG/KG	390 U ug/kg	390 U ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
PENTACHLOROPHENOL	350 U UG/KG	400 U UG/KG	940 U ug/kg	940 U ug/kg	1100 UG/KG	1200 UG/KG	1500 UG/KG
PHENANTHRENE	350 U UG/KG	400 U UG/KG	2700 ug/kg	2300 ug/kg	380 UG/KG	380 UG/KG	1900 UG/KG
PHENOL	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	1100 UG/KG	1100 UG/KG	1900 UG/KG
PYRENE	350 U UG/KG	400 U UG/KG	390 U ug/kg	390 U ug/kg	640 UG/KG	770 UG/KG	1400 UG/KG
PESTICIDES/PCBs							
4,4'-DDD	3.5 U UG/KG	4 UJ UG/KG	39 U ug/kg	39 U ug/kg			
4,4'-DDE	3.5 U UG/KG	4 U UG/KG	39 U ug/kg	39 U ug/kg			
4,4'-DDT	3.5 U UG/KG	4 U UG/KG	40 J ug/kg	37 J ug/kg			
ALDRIN	1.8 U UG/KG	2 U UG/KG	15 J ug/kg	14 J ug/kg			
ALPHA-BHC	1.8 U UG/KG	2 U UG/KG	20 U ug/kg	20 U ug/kg			
ALPHA-CHLORDANE	1.8 U UG/KG	2 UJ UG/KG	20 U ug/kg	20 U ug/kg			
AROCLOR-1016	35 U UG/KG	40 U UG/KG	390 U ug/kg	390 U ug/kg			
AROCLOR-1221	71 U UG/KG	79 U UG/KG	790 U ug/kg	790 U ug/kg			
AROCLOR-1232	35 U UG/KG	40 U UG/KG	390 U ug/kg	390 U ug/kg			
AROCLOR-1242	35 U UG/KG	40 U UG/KG	390 U ug/kg	390 U ug/kg			
AROCLOR-1248	35 U UG/KG	40 U UG/KG	390 U ug/kg	390 U ug/kg			
AROCLOR-1254	35 U UG/KG	40 U UG/KG	390 U ug/kg	390 U ug/kg			
AROCLOR-1260	35 U UG/KG	40 U UG/KG	390 U ug/kg	390 U ug/kg			
BETA-BHC	1.8 U UG/KG	2 U UG/KG	20 U ug/kg	20 U ug/kg			
DELTA-BHC	1.8 UJ UG/KG	2 U UG/KG	20 U ug/kg	20 U ug/kg			
DIELDRIN	3.5 U UG/KG	4 U UG/KG	45 J ug/kg	52 J ug/kg			
ENDOSULFAN I	1.8 U UG/KG	2 UJ UG/KG	20 U ug/kg	20 U ug/kg			
ENDOSULFAN II	3.5 U UG/KG	4 UJ UG/KG	39 U ug/kg	39 U ug/kg			
ENDOSULFAN SULFATE	3.5 U UG/KG	4 UJ UG/KG	39 U ug/kg	39 U ug/kg			
ENDRIN	3.5 U UG/KG	4 U UG/KG	37 J ug/kg	35 J ug/kg			
ENDRIN ALDEHYDE	3.5 U UG/KG	4 UJ UG/KG	39 U ug/kg	39 U ug/kg			
ENDRIN KETONE	3.5 U UG/KG	4 UJ UG/KG	39 U ug/kg	39 U ug/kg			
GAMMA-BHC (LINDANE)	1.8 U UG/KG	2 U UG/KG	15 J ug/kg	14 J ug/kg			

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	W04MS00401 4 3/24/98	W04MS01101 4 3/25/98	6SB3-0-2-MS 6 12/5/92	6SB3-0-2-MSD 6 12/5/92	30B00202MS 30 5/23/96	30B00202MSD 30 5/23/96	30B00502MS 30 6/4/96
GAMMA-CHLORDANE	1.8 U UG/KG	2 UJ UG/KG	20 U ug/kg	20 U ug/kg			
HEPTACHLOR	1.8 U UG/KG	2 U UG/KG	17 J ug/kg	16 J ug/kg			
HEPTACHLOR EPOXIDE	1.8 U UG/KG	2 U UG/KG	20 U ug/kg	20 U ug/kg			
METHOXYCHLOR	18 U UG/KG	20 UJ UG/KG	200 U ug/kg	200 U ug/kg			
TOXAPHENE	180 U UG/KG	200 U UG/KG	2000 U ug/kg	2000 U ug/kg			
INORGANICS							
ALUMINUM	1300 MG/KG	8340 MG/KG					
ANTIMONY	0.41 UJ MG/KG	0.59 UJ MG/KG					
ARSENIC	0.82 U MG/KG	1.2 U MG/KG					
BARIUM	1.1 J MG/KG	10 MG/KG					
BERYLLIUM	0.25 U MG/KG	0.36 U MG/KG					
CADMIUM	0.25 U MG/KG	0.36 U MG/KG					
CALCIUM	81.9 U MG/KG	119 U MG/KG					
CHROMIUM	4.4 MG/KG	7.2 MG/KG					
COBALT	0.41 U MG/KG	0.59 U MG/KG					
COPPER	0.41 U MG/KG	1 MG/KG					
IRON	110 MG/KG	598 MG/KG					
LEAD	0.68 MG/KG	3.5 J MG/KG					
MAGNESIUM	7.8 U MG/KG	119 MG/KG					
MANGANESE	1.1 MG/KG	3.6 MG/KG					
MERCURY	0.03 U MG/KG	0.04 U MG/KG					
NICKEL	0.41 U MG/KG	0.59 U MG/KG					
POTASSIUM	22 MG/KG	140 MG/KG					
SELENIUM	0.41 U MG/KG	0.59 UJ MG/KG					
SILVER	0.25 U MG/KG	0.36 U MG/KG					
SODIUM	41 U MG/KG	59.5 U MG/KG					
THALLIUM	0.82 U MG/KG	1.2 U MG/KG					
VANADIUM	1.4 MG/KG	5.8 MG/KG					
ZINC	0.82 U MG/KG	1.3 MG/KG					

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00502MSD	32SB6-5-7MS	32SB6-5-7MSD	33B00302MS	33B00302MSD	33B00302MSDR
SITE	30	32	32	33	33	33
DATE SAMPLED	6/4/96	1/11/93	1/11/93	6/6/96	6/6/96	6/6/96
VOLATILES		RESULT	RESULT	RESULT	RESULT	RESULT
1,1,1-TRICHLOROETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
1,1,2,2-TETRACHLOROETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
1,1,2-TRICHLOROETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
1,1-DICHLOROETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
1,1-DICHLOROETHENE	57 UG/KG	220 ug/kg	240 ug/kg	50 ug/kg	54 ug/kg	
1,2-DICHLOROETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
1,2-DICHLOROETHENE (TOTAL)	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
1,2-DICHLOROPROPANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
2-BUTANONE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
2-HEXANONE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
4-METHYL-2-PENTANONE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
ACETONE	16 UG/KG	58 U ug/kg	58 U ug/kg	7 ug/kg	7 ug/kg	
BENZENE	54 UG/KG	290 ug/kg	310 ug/kg	52 ug/kg	56 ug/kg	
BROMODICHLOROMETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
BROMOFORM	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
BROMOMETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
CARBON DISULFIDE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
CARBON TETRACHLORIDE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
CHLOROBENZENE	55 UG/KG	290 ug/kg	320 ug/kg	50 ug/kg	55 ug/kg	
CHLOROETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
CHLOROFORM	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
CHLOROMETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
CIS-1,3-DICHLOROPROPENE	11 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
DIBROMOCHLOROMETHANE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
ETHYLBENZENE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
METHYL TERT-BUTYL ETHER						
METHYLENE CHLORIDE	5 UG/KG	58 U ug/kg	58 U ug/kg	1 ug/kg	1 ug/kg	
STYRENE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
TETRACHLOROETHENE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
TOLUENE	56 UG/KG	300 ug/kg	320 ug/kg	49 ug/kg	53 ug/kg	

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30B00502MSD 30 6/4/96	32SB6-5-7MS 32 1/11/93	32SB6-5-7MSD 32 1/11/93	33B00302MS 33 6/6/96	33B00302MSD 33 6/6/96	33B00302MSDR 33 6/6/96
TRANS-1,3-DICHLOROPROPENE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
TRICHLOROETHENE	51 UG/KG	260 ug/kg	290 ug/kg	50 ug/kg	53 ug/kg	
VINYL CHLORIDE	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
XYLENES, TOTAL	11 UG/KG	58 U ug/kg	58 U ug/kg	11 ug/kg	11 ug/kg	
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE	1700 UG/KG	370 U ug/kg	370 U ug/kg	76 ug/kg	1300 ug/kg	200 ug/kg
1,2-DICHLOROBENZENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
1,3-DICHLOROBENZENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
1,4-DICHLOROBENZENE	1800 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	1300 ug/kg	380 ug/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
2,4,5-TRICHLOROPHENOL	4800 UG/KG	910 U ug/kg	910 U ug/kg	960 ug/kg	960 ug/kg	960 ug/kg
2,4,6-TRICHLOROPHENOL	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
2,4-DICHLOROPHENOL	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
2,4-DIMETHYLPHENOL	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
2,4-DINITROPHENOL	4800 UG/KG	910 U ug/kg	910 U ug/kg	960 ug/kg	960 ug/kg	960 ug/kg
2,4-DINITROTOLUENE	1700 UG/KG	370 U ug/kg	370 U ug/kg	1300 ug/kg	1400 ug/kg	1300 ug/kg
2,6-DINITROTOLUENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
2-CHLORONAPHTHALENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
2-CHLOROPHENOL	2500 UG/KG	370 U ug/kg	370 U ug/kg	430 ug/kg	1800 ug/kg	780 ug/kg
2-METHYLNAPHTHALENE	1900 UG/KG	160 J ug/kg	52 J ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
2-METHYLPHENOL	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
2-NITROANILINE	4800 UG/KG	910 U ug/kg	910 U ug/kg	960 ug/kg	960 ug/kg	960 ug/kg
2-NITROPHENOL	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
3,3'-DICHLOROBENZIDINE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
3-NITROANILINE	4800 UG/KG	910 U ug/kg	910 U ug/kg	960 ug/kg	960 ug/kg	960 ug/kg
4,6-DINITRO-2-METHYLPHENOL	4800 UG/KG	910 U ug/kg	910 U ug/kg	960 ug/kg	960 ug/kg	960 ug/kg
4-BROMOPHENYL PHENYL ETHER	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
4-CHLORO-3-METHYLPHENOL	2600 UG/KG	370 U ug/kg	370 U ug/kg	1500 ug/kg	1900 ug/kg	1600 ug/kg
4-CHLOROANILINE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
4-CHLOROPHENYL PHENYL ETHER	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
4-METHYLPHENOL	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	30B00502MSD	32SB6-5-7MS	32SB6-5-7MSD	33B00302MS	33B00302MSD	33B00302MSDR
SITE	30	32	32	33	33	33
DATE SAMPLED	6/4/96	1/11/93	1/11/93	6/6/96	6/6/96	6/6/96
4-NITROANILINE	4800 UG/KG	910 U ug/kg	910 U ug/kg	960 ug/kg	960 ug/kg	960 ug/kg
4-NITROPHENOL	2800 UG/KG	910 U ug/kg	910 U ug/kg	1600 ug/kg	2000 ug/kg	1600 ug/kg
ACENAPHTHENE	1800 UG/KG	370 U ug/kg	370 U ug/kg	950 ug/kg	1300 ug/kg	990 ug/kg
ACENAPHTHYLENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
ANTHRACENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
BENZO(A)ANTHRACENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
BENZO(A)PYRENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
BENZO(B)FLUORANTHENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
BENZO(G,H,I)PERYLENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
BENZO(K)FLUORANTHENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
BIS(2-CHLOROETHOXY)METHANE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
BIS(2-CHLOROETHYL)ETHER	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
BIS(2-ETHYLHEXYL)PHTHALATE	1900 UG/KG	52 J ug/kg	42 J ug/kg	380 ug/kg	55 ug/kg	200 ug/kg
BUTYLBENZYL PHTHALATE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
CARBAZOLE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
CHRYSENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
DI-N-BUTYL PHTHALATE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
DI-N-OCTYL PHTHALATE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
DIBENZO(A,H)ANTHRACENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
DIBENZOFURAN	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
DIETHYL PHTHALATE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
DIMETHYL PHTHALATE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
FLUORANTHENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
FLUORENE	1900 UG/KG	44 J ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
HEXACHLOROBENZENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
HEXACHLOROBUTADIENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
HEXACHLOROCYCLOPENTADIENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
HEXACHLOROETHANE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
INDENO(1,2,3-CD)PYRENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
ISOPHORONE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
N-NITROSO-DI-N-PROPYLAMINE	1700 UG/KG	370 U ug/kg	370 U ug/kg	550 ug/kg	1500 ug/kg	790 ug/kg

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	30B00502MSD 30 6/4/96	32SB6-5-7MS 32 1/11/93	32SB6-5-7MSD 32 1/11/93	33B00302MS 33 6/6/96	33B00302MSD 33 6/6/96	33B00302MSDR 33 6/6/96
N-NITROSODIPHENYLAMINE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
NAPHTHALENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
NITROBENZENE	1900 UG/KG	370 U ug/kg	370 U ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
PENTACHLOROPHENOL	1900 UG/KG	910 U ug/kg	910 U ug/kg	680 ug/kg	1300 ug/kg	1100 ug/kg
PHENANTHRENE	1900 UG/KG	77 J ug/kg	51 J ug/kg	380 ug/kg	380 ug/kg	380 ug/kg
PHENOL	2600 UG/KG	370 U ug/kg	370 U ug/kg	880 ug/kg	1900 ug/kg	1200 ug/kg
PYRENE	1800 UG/KG	370 U ug/kg	370 U ug/kg	1100 ug/kg	1300 ug/kg	1200 ug/kg
PESTICIDES/PCBs						
4,4'-DDD		3.7 U ug/kg	3.7 U ug/kg			
4,4'-DDE		3.7 U ug/kg	3.7 U ug/kg			
4,4'-DDT		3.7 U ug/kg	3.7 U ug/kg			
ALDRIN		1.9 U ug/kg	1.9 U ug/kg			
ALPHA-BHC		1.9 U ug/kg	1.9 U ug/kg			
ALPHA-CHLORDANE		1.9 U ug/kg	1.9 U ug/kg			
AROCLOR-1016		37 U ug/kg	37 U ug/kg			
AROCLOR-1221		76 U ug/kg	76 U ug/kg			
AROCLOR-1232		37 U ug/kg	37 U ug/kg			
AROCLOR-1242		37 U ug/kg	37 U ug/kg			
AROCLOR-1248		37 U ug/kg	37 U ug/kg			
AROCLOR-1254		37 U ug/kg	37 U ug/kg			
AROCLOR-1260		37 U ug/kg	37 U ug/kg			
BETA-BHC		1.9 U ug/kg	1.9 U ug/kg			
DELTA-BHC		1.9 U ug/kg	1.9 U ug/kg			
DIELDRIN		3.7 U ug/kg	3.7 U ug/kg			
ENDOSULFAN I		1.9 U ug/kg	1.9 U ug/kg			
ENDOSULFAN II		3.7 U ug/kg	3.7 U ug/kg			
ENDOSULFAN SULFATE		3.7 U ug/kg	3.7 U ug/kg			
ENDRIN		3.7 U ug/kg	3.7 U ug/kg			
ENDRIN ALDEHYDE		3.7 U ug/kg	3.7 U ug/kg			
ENDRIN KETONE		3.7 U ug/kg	3.7 U ug/kg			
GAMMA-BHC (LINDANE)		1.9 U ug/kg	1.9 U ug/kg			

Blank space indicates chemical not analyzed.

R4708989

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00502MSD	32SB6-5-7MS	32SB6-5-7MSD	33B00302MS	33B00302MSD	33B00302MSDR
SITE	30	32	32	33	33	33
DATE SAMPLED	6/4/96	1/11/93	1/11/93	6/6/96	6/6/96	6/6/96
GAMMA-CHLORDANE		1.9 U ug/kg	1.9 U ug/kg			
HEPTACHLOR		1.9 U ug/kg	1.9 U ug/kg			
HEPTACHLOR EPOXIDE		1.9 U ug/kg	1.9 U ug/kg			
METHOXYCHLOR		19 U ug/kg	19 U ug/kg			
TOXAPHENE		190 U ug/kg	190 U ug/kg			
INORGANICS						
ALUMINUM						
ANTIMONY						
ARSENIC						
BARIUM						
BERYLLIUM						
CADMIUM						
CALCIUM						
CHROMIUM						
COBALT						
COPPER						
IRON						
LEAD						
MAGNESIUM						
MANGANESE						
MERCURY						
NICKEL						
POTASSIUM						
SELENIUM						
SILVER						
SODIUM						
THALLIUM						
VANADIUM						
ZINC						

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00302MSRE	33SB2-35-37MS	33SB2-35-37MSD
SITE	33	33	33
DATE SAMPLED	6/6/96	12/3/92	12/3/92
VOLATILES	RESULT	RESULT	RESULT
1,1,1-TRICHLOROETHANE		11 U ug/kg	11 U ug/kg
1,1,2,2-TETRACHLOROETHANE		11 U ug/kg	11 U ug/kg
1,1,2-TRICHLOROETHANE		11 U ug/kg	11 U ug/kg
1,1-DICHLOROETHANE		11 U ug/kg	11 U ug/kg
1,1-DICHLOROETHENE		11 U ug/kg	11 U ug/kg
1,2-DICHLOROETHANE		11 U ug/kg	11 U ug/kg
1,2-DICHLOROETHENE (TOTAL)		11 U ug/kg	11 U ug/kg
1,2-DICHLOROPROPANE		11 U ug/kg	11 U ug/kg
2-BUTANONE		11 U ug/kg	11 U ug/kg
2-HEXANONE		11 U ug/kg	11 U ug/kg
4-METHYL-2-PENTANONE		11 U ug/kg	11 U ug/kg
ACETONE		15 ug/kg	13 ug/kg
BENZENE		11 U ug/kg	11 U ug/kg
BROMODICHLOROMETHANE		11 U ug/kg	11 U ug/kg
BROMOFORM		11 U ug/kg	11 U ug/kg
BROMOMETHANE		11 U ug/kg	11 U ug/kg
CARBON DISULFIDE		11 U ug/kg	11 U ug/kg
CARBON TETRACHLORIDE		11 U ug/kg	11 U ug/kg
CHLOROBENZENE		11 U ug/kg	11 U ug/kg
CHLOROETHANE		11 U ug/kg	11 U ug/kg
CHLOROFORM		11 U ug/kg	11 U ug/kg
CHLOROMETHANE		11 U ug/kg	11 U ug/kg
CIS-1,3-DICHLOROPROPENE	380 ug/kg	350 U ug/kg	350 U ug/kg
DIBROMOCHLOROMETHANE		11 U ug/kg	11 U ug/kg
ETHYLBENZENE		11 U ug/kg	11 U ug/kg
METHYL TERT-BUTYL ETHER			
METHYLENE CHLORIDE		3 J ug/kg	3 J ug/kg
STYRENE		11 U ug/kg	11 U ug/kg
TETRACHLOROETHENE		11 U ug/kg	11 U ug/kg
TOLUENE		11 U ug/kg	11 U ug/kg

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER SITE DATE SAMPLED	33B00302MSRE 33 6/6/96	33SB2-35-37MS 33 12/3/92	33SB2-35-37MSD 33 12/3/92
TRANS-1,3-DICHLOROPROPENE		11 U ug/kg	11 U ug/kg
TRICHLOROETHENE		11 U ug/kg	11 U ug/kg
VINYL CHLORIDE		11 U ug/kg	11 U ug/kg
XYLENES, TOTAL		11 U ug/kg	11 U ug/kg
SEMIVOLATILES			
1,2,4-TRICHLOROBENZENE	1100 ug/kg	350 U ug/kg	350 U ug/kg
1,2-DICHLOROBENZENE	380 ug/kg	350 U ug/kg	350 U ug/kg
1,3-DICHLOROBENZENE	380 ug/kg	350 U ug/kg	350 U ug/kg
1,4-DICHLOROBENZENE	1100 ug/kg	350 U ug/kg	350 U ug/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 ug/kg	350 U ug/kg	350 U ug/kg
2,4,5-TRICHLOROPHENOL	960 ug/kg	850 U ug/kg	850 U ug/kg
2,4,6-TRICHLOROPHENOL	380 ug/kg	350 U ug/kg	350 U ug/kg
2,4-DICHLOROPHENOL	380 ug/kg	350 U ug/kg	350 U ug/kg
2,4-DIMETHYLPHENOL	380 ug/kg	350 U ug/kg	350 U ug/kg
2,4-DINITROPHENOL	960 ug/kg	850 U ug/kg	850 U ug/kg
2,4-DINITROTOLUENE	1200 ug/kg	350 U ug/kg	350 U ug/kg
2,6-DINITROTOLUENE	380 ug/kg	350 U ug/kg	350 U ug/kg
2-CHLORONAPHTHALENE	380 ug/kg	350 U ug/kg	350 U ug/kg
2-CHLOROPHENOL	1500 ug/kg	350 U ug/kg	350 U ug/kg
2-METHYLNAPHTHALENE	380 ug/kg	350 U ug/kg	350 U ug/kg
2-METHYLPHENOL	380 ug/kg	350 U ug/kg	350 U ug/kg
2-NITROANILINE	960 ug/kg	850 U ug/kg	850 U ug/kg
2-NITROPHENOL	380 ug/kg	350 U ug/kg	350 U ug/kg
3,3'-DICHLOROBENZIDINE	380 ug/kg	350 U ug/kg	350 U ug/kg
3-NITROANILINE	960 ug/kg	850 U ug/kg	850 U ug/kg
4,6-DINITRO-2-METHYLPHENOL	960 ug/kg	850 U ug/kg	850 U ug/kg
4-BROMOPHENYL PHENYL ETHER	380 ug/kg	350 U ug/kg	350 U ug/kg
4-CHLORO-3-METHYLPHENOL	1400 ug/kg	350 U ug/kg	350 U ug/kg
4-CHLOROANILINE	380 ug/kg	350 U ug/kg	350 U ug/kg
4-CHLOROPHENYL PHENYL ETHER	380 ug/kg	350 U ug/kg	350 U ug/kg
4-METHYLPHENOL	380 ug/kg	350 U ug/kg	350 U ug/kg

Blank space indicates chemical not analyzed.

R4708989

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	33B00302MSRE 33 6/6/96	33SB2-35-37MS 33 12/3/92	33SB2-35-37MSD 33 12/3/92
4-NITROANILINE	960 ug/kg	850 U ug/kg	850 U ug/kg
4-NITROPHENOL	1600 ug/kg	850 U ug/kg	850 U ug/kg
ACENAPHTHENE	1100 ug/kg	350 U ug/kg	350 U ug/kg
ACENAPHTHYLENE	380 ug/kg	350 U ug/kg	350 U ug/kg
ANTHRACENE	380 ug/kg	350 U ug/kg	350 U ug/kg
BENZO(A)ANTHRACENE	380 ug/kg	350 U ug/kg	350 U ug/kg
BENZO(A)PYRENE	380 ug/kg	350 U ug/kg	350 U ug/kg
BENZO(B)FLUORANTHENE	380 ug/kg	350 U ug/kg	350 U ug/kg
BENZO(G,H,I)PERYLENE	380 ug/kg	350 U ug/kg	350 U ug/kg
BENZO(K)FLUORANTHENE	380 ug/kg	350 U ug/kg	350 U ug/kg
BIS(2-CHLOROETHOXY)METHANE	380 ug/kg	350 U ug/kg	350 U ug/kg
BIS(2-CHLOROETHYL)ETHER	380 ug/kg	350 U ug/kg	350 U ug/kg
BIS(2-ETHYLHEXYL)PHTHALATE	71 ug/kg	350 U ug/kg	350 U ug/kg
BUTYLBENZYL PHTHALATE	380 ug/kg	350 U ug/kg	350 U ug/kg
CARBAZOLE	380 ug/kg	350 U ug/kg	350 U ug/kg
CHRYSENE	380 ug/kg	350 U ug/kg	350 U ug/kg
DI-N-BUTYL PHTHALATE	380 ug/kg	1200 ug/kg	1200 ug/kg
DI-N-OCTYL PHTHALATE	380 ug/kg	350 U ug/kg	350 U ug/kg
DIBENZO(A,H)ANTHRACENE	380 ug/kg	350 U ug/kg	350 U ug/kg
DIBENZOFURAN	380 ug/kg	350 U ug/kg	350 U ug/kg
DIETHYL PHTHALATE	380 ug/kg	350 U ug/kg	350 U ug/kg
DIMETHYL PHTHALATE	380 ug/kg	350 U ug/kg	350 U ug/kg
FLUORANTHENE	380 ug/kg	350 U ug/kg	350 U ug/kg
FLUORENE	380 ug/kg	350 U ug/kg	350 U ug/kg
HEXACHLOROBENZENE	380 ug/kg	350 U ug/kg	350 U ug/kg
HEXACHLOROBUTADIENE	380 ug/kg	350 U ug/kg	350 U ug/kg
HEXACHLOROCYCLOPENTADIENE	380 ug/kg	350 U ug/kg	350 U ug/kg
HEXACHLOROETHANE	380 ug/kg	350 U ug/kg	350 U ug/kg
INDENO(1,2,3-CD)PYRENE	380 ug/kg	350 U ug/kg	350 U ug/kg
ISOPHORONE	380 ug/kg	350 U ug/kg	350 U ug/kg
N-NITROSO-DI-N-PROPYLAMINE	1300 ug/kg	350 U ug/kg	350 U ug/kg

Blank space indicates chemical not analyzed.

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00302MSRE	33SB2-35-37MS	33SB2-35-37MSD
SITE	33	33	33
DATE SAMPLED	6/6/96	12/3/92	12/3/92
N-NITROSODIPHENYLAMINE	380 ug/kg	350 U ug/kg	350 U ug/kg
NAPHTHALENE	380 ug/kg	350 U ug/kg	350 U ug/kg
NITROBENZENE	380 ug/kg	350 U ug/kg	350 U ug/kg
PENTACHLOROPHENOL	1300 ug/kg	850 U ug/kg	850 U ug/kg
PHENANTHRENE	380 ug/kg	350 U ug/kg	350 U ug/kg
PHENOL	1400 ug/kg	350 U ug/kg	350 U ug/kg
PYRENE	1200 ug/kg	350 U ug/kg	350 U ug/kg
PESTICIDES/PCBs			
4,4'-DDD		3.5 U ug/kg	3.5 U ug/kg
4,4'-DDE		3.5 U ug/kg	3.5 U ug/kg
4,4'-DDT		24 ug/kg	24 ug/kg
ALDRIN		13 ug/kg	12 ug/kg
ALPHA-BHC		1.8 U ug/kg	1.8 U ug/kg
ALPHA-CHLORDANE		1.8 U ug/kg	1.8 U ug/kg
AROCLOR-1016		35 U ug/kg	35 U ug/kg
AROCLOR-1221		71 U ug/kg	71 U ug/kg
AROCLOR-1232		35 U ug/kg	35 U ug/kg
AROCLOR-1242		35 U ug/kg	35 U ug/kg
AROCLOR-1248		35 U ug/kg	35 U ug/kg
AROCLOR-1254		35 U ug/kg	35 U ug/kg
AROCLOR-1260		35 U ug/kg	35 U ug/kg
BETA-BHC		1.8 U ug/kg	1.8 U ug/kg
DELTA-BHC		1.8 U ug/kg	1.8 U ug/kg
DIELDRIN		24 ug/kg	24 ug/kg
ENDOSULFAN I		1.8 U ug/kg	1.8 U ug/kg
ENDOSULFAN II		3.5 U ug/kg	3.5 U ug/kg
ENDOSULFAN SULFATE		3.5 U ug/kg	3.5 U ug/kg
ENDRIN		25 ug/kg	25 ug/kg
ENDRIN ALDEHYDE		3.5 U ug/kg	3.5 U ug/kg
ENDRIN KETONE		3.5 U ug/kg	3.5 U ug/kg
GAMMA-BHC (LINDANE)		11 ug/kg	11 ug/kg

Blank space indicates chemical not analyzed.

R4708989

APPENDIX B
MS/MSD DATA
REMEDIAL INVESTIGATION REPORT FOR SURFACE AND SUBSURFACE SOILS AT SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER SITE DATE SAMPLED	33B00302MSRE 33 6/6/96	33SB2-35-37MS 33 12/3/92	33SB2-35-37MSD 33 12/3/92
GAMMA-CHLORDANE		1.8 U ug/kg	1.8 U ug/kg
HEPTACHLOR		12 ug/kg	12 ug/kg
HEPTACHLOR EPOXIDE		1.8 U ug/kg	1.8 U ug/kg
METHOXYCHLOR		18 U ug/kg	18 U ug/kg
TOXAPHENE		180 U ug/kg	180 U ug/kg
INORGANICS			
ALUMINUM			
ANTIMONY			
ARSENIC			
BARIUM			
BERYLLIUM			
CADMIUM			
CALCIUM			
CHROMIUM			
COBALT			
COPPER			
IRON			
LEAD			
MAGNESIUM			
MANGANESE			
MERCURY			
NICKEL			
POTASSIUM			
SELENIUM			
SILVER			
SODIUM			
THALLIUM			
VANADIUM			
ZINC			

Blank space indicates chemical not analyzed.

DUPLICATE AND MS/MSD FREQUENCY TABLE

Site	Number of Samples	Number of Duplicates	Number of MS/MSDs
3	33	5	3
4	35	6	2
6	17	1	1
30	55	4	2
32	83	9	1
33	47	5	2
Totals	**270**	**30**	**11**

APPENDIX C

SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA

SITE 3

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB1-0-2		3SB1-15-17		3SB1-26-27		3SB1-26-27A		3SB1-6-7		3SB10-10-12	
LAB ID NUMBER	34938001		34938003		34938001		34939002		34938002		34833001	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/20/93		1/20/93		1/20/93		1/20/93		1/20/93		1/8/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
1,1,2-TRICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
1,1-DICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
1,1-DICHLOROETHENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
1,2-DICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	12 U	μg/kg	12 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
1,2-DICHLOROPROPANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
2-BUTANONE	11 UJ	μg/kg	12 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	12 UJ	μg/kg	12 U	μg/kg
2-HEXANONE	11 UJ	μg/kg	12 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	12 UJ	μg/kg	12 U	μg/kg
4-METHYL-2-PENTANONE	11 UJ	μg/kg	12 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	12 UJ	μg/kg	12 U	μg/kg
ACETONE	11 UJ	μg/kg	12 UJ	μg/kg	11 U	μg/kg	11 UJ	μg/kg	12 UJ	μg/kg	12 UJ	μg/kg
BENZENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
BROMODICHLOROMETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
BROMOFORM	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
BROMOMETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
CARBON DISULFIDE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
CARBON TETRACHLORIDE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
CHLOROBENZENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
CHLOROETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
CHLOROFORM	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
CHLOROMETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
CIS-1,3-DICHLOROPROPENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
DIBROMOCHLOROMETHANE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
ETHYLBENZENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE	11 U	μg/kg	12 U	μg/kg	11 UJ	μg/kg	11 U	μg/kg	12 U	μg/kg	12 UJ	μg/kg
STYRENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
TETRACHLOROETHENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
TOLUENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	μg/kg	12 U	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	12 U	μg/kg	12 U	μg/kg
TRICHLOROETHENE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
VINYL CHLORIDE	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
XYLENES, TOTAL	11 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
1,2-DICHLOROBENZENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
1,3-DICHLOROBENZENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
1,4-DICHLOROBENZENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2,4,5-TRICHLOROPHENOL	920 U	μg/kg	940 U	μg/kg	870 U	μg/kg	870 U	μg/kg	930 U	μg/kg	930 U	μg/kg
2,4,6-TRICHLOROPHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2,4-DICHLOROPHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2,4-DIMETHYLPHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2,4-DINITROPHENOL	920 U	μg/kg	940 U	μg/kg	870 U	μg/kg	870 U	μg/kg	930 U	μg/kg	930 UJ	μg/kg
2,4-DINITROTOLUENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2,6-DINITROTOLUENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2-CHLORONAPHTHALENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2-CHLOROPHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2-METHYLNAPHTHALENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2-METHYLPHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
2-NITROANILINE	920 U	μg/kg	940 U	μg/kg	870 U	μg/kg	870 U	μg/kg	930 U	μg/kg	930 U	μg/kg
2-NITROPHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
3,3'-DICHLOROBENZIDINE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
3-NITROANILINE	920 U	μg/kg	940 U	μg/kg	870 U	μg/kg	870 U	μg/kg	930 U	μg/kg	930 UJ	μg/kg
4,6-DINITRO-2-METHYLPHENOL	920 U	μg/kg	940 U	μg/kg	870 U	μg/kg	870 U	μg/kg	930 U	μg/kg	930 U	μg/kg
4-BROMOPHENYL PHENYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg		μg/kg		μg/kg
4-CHLORO-3-METHYLPHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
4-CHLOROANILINE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
4-METHYLPHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
4-NITROANILINE	920 U	μg/kg	940 U	μg/kg	870 U	μg/kg	870 U	μg/kg	930 U	μg/kg	930 UJ	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB1-0-2		3SB1-15-17		3SB1-25-27		3SB1-25-27A		3SB1-6-7		3SB10-10-12	
LAB ID NUMBER	34938001		34938003		34939001		34939002		34938002		34933001	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/20/93		1/20/93		1/20/93		1/20/93		1/20/93		1/8/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-NITROPHENOL	920 U	μg/kg	940 U	μg/kg	870 U	μg/kg	870 U	μg/kg	930 U	μg/kg	930 UJ	μg/kg
ACENAPHTHENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
ACENAPHTHYLENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
ANTHRACENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
BENZO(A)ANTHRACENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
BENZO(A)PYRENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
BENZO(B)FLUORANTHENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
BENZO(G,H,I)PERYLENE	380 UJ	μg/kg	390 UJ	μg/kg	360 UJ	μg/kg	360 UJ	μg/kg	380 U	μg/kg	380 U	μg/kg
BENZO(K)FLUORANTHENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	380 UJ	μg/kg	390 UJ	μg/kg	360 UJ	μg/kg	360 UJ	μg/kg	380 UJ	μg/kg	380 U	μg/kg
BUTYLBENZYL PHTHALATE	380 UJ	μg/kg	390 UJ	μg/kg	360 UJ	μg/kg	360 UJ	μg/kg	380 UJ	μg/kg	380 U	μg/kg
CARBAZOLE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
CHRYSENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
DI-N-BUTYL PHTHALATE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
DI-N-OCTYL PHTHALATE	380 UJ	μg/kg	390 UJ	μg/kg	360 UJ	μg/kg	360 UJ	μg/kg	380 UJ	μg/kg	380 U	μg/kg
DIBENZO(A,H)ANTHRACENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
DIBENZOFURAN	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
DIETHYL PHTHALATE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
DIMETHYL PHTHALATE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
FLUORANTHENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
FLUORENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
HEXACHLOROBENZENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
HEXACHLOROBUTADIENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
HEXACHLOROETHANE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
INDENO(1,2,3-CD)PYRENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
ISOPHORONE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
N-NITROSODIPHENYLAMINE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
NAPHTHALENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
NITROBENZENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
PENTACHLOROPHENOL	920 U	μg/kg	940 U	μg/kg	870 U	μg/kg	870 U	μg/kg	930 U	μg/kg	930 UJ	μg/kg
PHENANTHRENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
PHENOL	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
PYRENE	380 U	μg/kg	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	380 U	μg/kg	380 U	μg/kg
PESTICIDES/PCBs												
4,4'-DDD	9.3 U	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	3.5 U	μg/kg	9.6 U	μg/kg	3.8 UJ	μg/kg
4,4'-DDE	2.9 J	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	3.5 U	μg/kg	9.6 U	μg/kg	3.8 UJ	μg/kg
4,4'-DDT	9.3 U	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	3.5 U	μg/kg	9.6 U	μg/kg	3.8 UJ	μg/kg
ALDRIN	4.8 U	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg
ALPHA-BHC	4.8 U	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg
ALPHA-CHLORDANE	10	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg
AROCLOR-1016	93 U	μg/kg	39 U	μg/kg	35 U	μg/kg	35 U	μg/kg	96 U	μg/kg	38 UJ	μg/kg
AROCLOR-1221	190 U	μg/kg	79 U	μg/kg	71 U	μg/kg	71 U	μg/kg	190 U	μg/kg	78 UJ	μg/kg
AROCLOR-1232	93 U	μg/kg	39 U	μg/kg	35 U	μg/kg	35 U	μg/kg	96 U	μg/kg	38 UJ	μg/kg
AROCLOR-1242	93 U	μg/kg	39 U	μg/kg	35 U	μg/kg	35 U	μg/kg	96 U	μg/kg	38 UJ	μg/kg
AROCLOR-1248	93 U	μg/kg	39 U	μg/kg	35 U	μg/kg	35 U	μg/kg	96 U	μg/kg	38 UJ	μg/kg
AROCLOR-1254	93 U	μg/kg	39 U	μg/kg	35 U	μg/kg	35 U	μg/kg	96 U	μg/kg	38 UJ	μg/kg
AROCLOR-1260	93 U	μg/kg	39 U	μg/kg	35 U	μg/kg	35 U	μg/kg	96 U	μg/kg	38 UJ	μg/kg
BETA-BHC	4.8 U	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg
DELTA-BHC	4.8 U	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg
DIELDRIN	9.8	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	0.98 J	μg/kg	26	μg/kg	3.8 UJ	μg/kg
ENDOSULFAN I	4.8 U	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg
ENDOSULFAN II	9.3 U	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	3.5 U	μg/kg	9.6 U	μg/kg	3.8 UJ	μg/kg
ENDOSULFAN SULFATE	9.3 U	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	3.5 U	μg/kg	9.6 U	μg/kg	3.8 UJ	μg/kg
ENDRIN	9.3 U	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	3.5 U	μg/kg	9.6 U	μg/kg	3.8 UJ	μg/kg
ENDRIN ALDEHYDE	9.3 U	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	3.5 U	μg/kg	9.6 U	μg/kg	3.8 UJ	μg/kg
ENDRIN KETONE	9.3 U	μg/kg	3.9 U	μg/kg	3.5 U	μg/kg	3.5 U	μg/kg	9.6 U	μg/kg	3.8 UJ	μg/kg
GAMMA-BHC (LINDANE)	4.8 U	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg
GAMMA-CHLORDANE	17	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg
HEPTACHLOR	4.8 U	μg/kg	2 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	4.9 U	μg/kg	2 UJ	μg/kg

Blank spr 'tes chemical not analyzed.
A or D in ıe number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB1-0-2		3SB1-15-17		3SB1-26-27		3SB1-26-27A		3SB1-6-7		3SB10-10-12	
LAB ID NUMBER	34938001		34938003		34939001		34939002		34938002		34933001	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/20/93		1/20/93		1/20/93		1/20/93		1/20/93		1/8/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
HEPTACHLOR EPOXIDE	26	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	4.9 U	µg/kg	2 UJ	µg/kg
METHOXYCHLOR	48 U	µg/kg	20 U	µg/kg	18 U	µg/kg	18 U	µg/kg	49 U	µg/kg	20 UJ	µg/kg
TOXAPHENE	480 U	µg/kg	200 U	µg/kg	180 U	µg/kg	180 U	µg/kg	490 U	µg/kg	200 UJ	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	11.5	mg/kg	2.1 UJ	mg/kg	1.7 U	mg/kg	1.7 U	mg/kg	16.6	mg/kg	1.9 U	mg/kg
METALS												
ALUMINUM	8990	mg/kg	4640	mg/kg	1280	mg/kg	406	mg/kg	26700	mg/kg	6290	mg/kg
ANTIMONY	5.5 U	mg/kg	5.8 U	mg/kg	5.5 U	mg/kg	5.3 U	mg/kg	5.8 U	mg/kg	2.8 U	mg/kg
ARSENIC	5.5	mg/kg	1.9 J	mg/kg	0.29 J	mg/kg	0.22 UJ	mg/kg	7.7	mg/kg	1.4 J	mg/kg
BARIUM	8.7 J	mg/kg	10.6 J	mg/kg	2.2 J	mg/kg	0.45 J	mg/kg	8.7 J	mg/kg	3.2 J	mg/kg
BERYLLIUM	0.09 J	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.12 U	mg/kg
CADMIUM	0.88 U	mg/kg	0.93 U	mg/kg	0.88 U	mg/kg	0.85 U	mg/kg	0.93 U	mg/kg	0.34 J	mg/kg
CALCIUM	636 J	mg/kg	195 J	mg/kg	25.7 J	mg/kg	8.7 J	mg/kg	258 J	mg/kg	250 J	mg/kg
CHROMIUM	9.6	mg/kg	4.6	mg/kg	2.7 UJ	mg/kg	1.3 UJ	mg/kg	37.2	mg/kg	15.8	mg/kg
COBALT	1.3 J	mg/kg	0.96 J	mg/kg	0.5 U	mg/kg	0.49 U	mg/kg	3.2 J	mg/kg	1.3 U	mg/kg
COPPER	9.6	mg/kg	2.7 J	mg/kg	1.4 UJ	mg/kg	0.8 UJ	mg/kg	2 J	mg/kg	7.3	mg/kg
CYANIDE	0.51 J	mg/kg	0.5 J	mg/kg	0.48 J	mg/kg	0.47 UJ	mg/kg	0.53 J	mg/kg	0.19 J	mg/kg
IRON	7540	mg/kg	2210	mg/kg	1220	mg/kg	673	mg/kg	28900	mg/kg	15400	mg/kg
LEAD	14.5	mg/kg	1.3 J	mg/kg	0.78 UJ	mg/kg	0.29 UJ	mg/kg	6.6	mg/kg	3.3	mg/kg
MAGNESIUM	207 J	mg/kg	74.8 J	mg/kg	22.6 J	mg/kg	10.9 J	mg/kg	84.9 J	mg/kg	45.1 J	mg/kg
MANGANESE	72.8	mg/kg	8.4	mg/kg	2.6 J	mg/kg	1 UJ	mg/kg	20.8	mg/kg	9.4	mg/kg
MERCURY	0.02 J	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.02 J	mg/kg	0.03 U	mg/kg
NICKEL	2.8 U	mg/kg	2.9 U	mg/kg	2.8 U	mg/kg	2.7 U	mg/kg	2.9 U	mg/kg	1.8 U	mg/kg
POTASSIUM	114 U	mg/kg	332 J	mg/kg	114 U	mg/kg	111 U	mg/kg	172 J	mg/kg	53.2 J	mg/kg
SELENIUM	2.7	mg/kg	0.5 U	mg/kg	1.7 J	mg/kg	1.2 J	mg/kg	3.3	mg/kg	0.12 UJ	mg/kg
SILVER	0.57 J	mg/kg	0.57 U	mg/kg	0.54 U	mg/kg	0.52 U	mg/kg	1.8 J	mg/kg	0.49 U	mg/kg
SODIUM	12.4 U	mg/kg	13.1 U	mg/kg	12.4 U	mg/kg	12 U	mg/kg	13 U	mg/kg	195 J	mg/kg
THALLIUM	0.57 U	mg/kg	0.6 U	mg/kg	0.57 U	mg/kg	0.55 U	mg/kg	0.59 U	mg/kg	0.16 U	mg/kg
VANADIUM	19.8	mg/kg	14.4	mg/kg	10.1 J	mg/kg	10 J	mg/kg	76.6	mg/kg	42	mg/kg
ZINC	10.2	mg/kg	0.64 J	mg/kg	2.9 J	mg/kg	1.4 UJ	mg/kg	1.8 J	mg/kg	4.4 J	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB10-15-17		3SB2-1-2		3SB2-10-12		3SB2-10-12A		3SB2-5-7		3SB3-0-2	
LAB ID NUMBER	34833002		34838001		34838003		34838004		34838002		34848004	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/9/93		1/9/93		1/9/93		1/9/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-BUTANONE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	6 J	µg/kg
2-HEXANONE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ACETONE	12 UJ	µg/kg	11 U	µg/kg	3 J	µg/kg	1 J	µg/kg	7 J	µg/kg	100	µg/kg
BENZENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOFORM	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOMETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROFORM	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	12 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	11 U	µg/kg
STYRENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TOLUENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	940 U	µg/kg	880 U	µg/kg	870 U	µg/kg	870 U	µg/kg	910 U	µg/kg	890 U	µg/kg
2,4,6-TRICHLOROPHENOL	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	940 UJ	µg/kg	880 U	µg/kg	870 U	µg/kg	870 U	µg/kg	910 U	µg/kg	890 UJ	µg/kg
2,4-DINITROTOLUENE	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-CHLOROPHENOL	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-METHYLPHENOL	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-NITROANILINE	940 U	µg/kg	880 U	µg/kg	870 U	µg/kg	870 U	µg/kg	910 U	µg/kg	890 U	µg/kg
2-NITROPHENOL	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	390 U	µg/kg	360 UJ	µg/kg	360 UJ	µg/kg	360 UJ	µg/kg	370 UJ	µg/kg	370 U	µg/kg
3-NITROANILINE	940 UJ	µg/kg	880 U	µg/kg	870 U	µg/kg	870 U	µg/kg	910 U	µg/kg	890 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	940 U	µg/kg	880 U	µg/kg	870 U	µg/kg	870 U	µg/kg	910 U	µg/kg	890 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	390 U	µg/kg	360 UJ	µg/kg	360 U	µg/kg	360 U	µg/kg	370 UJ	µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	390 U	µg/kg	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-NITROANILINE	940 UJ	µg/kg	880 U	µg/kg	870 U	µg/kg	870 U	µg/kg	910 U	µg/kg	890 UJ	µg/kg

Blank spa[illegible]es chemical not analyzed.
A or D in t[illegible]e number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB10-15-17		3SB2-1-2		3SB2-10-12		3SB2-10-12A		3SB2-5-7		3SB3-0-2	
LAB ID NUMBER	34833002		34838001		34838003		34838004		34838002		34848004	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/9/93		1/9/93		1/9/93		1/9/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-NITROPHENOL	940 UJ	μg/kg	880 U	μg/kg	870 U	μg/kg	870 U	μg/kg	910 U	μg/kg	890 U	μg/kg
ACENAPHTHENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
ACENAPHTHYLENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
ANTHRACENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(A)ANTHRACENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(A)PYRENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(B)FLUORANTHENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(G,H,I)PERYLENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(K)FLUORANTHENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	390 U	μg/kg	37 J	μg/kg	360 U	μg/kg	360 U	μg/kg	370 UJ	μg/kg	370 U	μg/kg
BUTYLBENZYL PHTHALATE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
CARBAZOLE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
CHRYSENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
DI-N-BUTYL PHTHALATE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
DI-N-OCTYL PHTHALATE	390 U	μg/kg	360 UJ	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
DIBENZO(A,H)ANTHRACENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
DIBENZOFURAN	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
DIETHYL PHTHALATE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
DIMETHYL PHTHALATE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
FLUORANTHENE	390 U	μg/kg	360 U	μg/kg	360 UJ	μg/kg	360 UJ	μg/kg	370 U	μg/kg	370 U	μg/kg
FLUORENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
HEXACHLOROBENZENE	390 U	μg/kg	360 U	μg/kg	360 UJ	μg/kg	360 UJ	μg/kg	370 U	μg/kg	370 U	μg/kg
HEXACHLOROBUTADIENE	390 U	μg/kg	360 U	μg/kg	360 UJ	μg/kg	360 UJ	μg/kg	370 U	μg/kg	370 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
HEXACHLOROETHANE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
INDENO(1,2,3-CD)PYRENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
ISOPHORONE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
N-NITROSODIPHENYLAMINE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
NAPHTHALENE	390 U	μg/kg	360 U	μg/kg	360 UJ	μg/kg	360 UJ	μg/kg	370 U	μg/kg	370 U	μg/kg
NITROBENZENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
PENTACHLOROPHENOL	940 UJ	μg/kg	880 U	μg/kg	870 U	μg/kg	870 U	μg/kg	910 U	μg/kg	890 UJ	μg/kg
PHENANTHRENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
PHENOL	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
PYRENE	390 U	μg/kg	360 U	μg/kg	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	370 U	μg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.9 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	4.2	μg/kg
4,4'-DDE	3.9 UJ	μg/kg	0.5 J	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	3.4 J	μg/kg
4,4'-DDT	3.9 UJ	μg/kg	0.9 J	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg
ALDRIN	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg
ALPHA-BHC	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg
ALPHA-CHLORDANE	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg
AROCLOR-1016	39 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	37 UJ	μg/kg	37 U	μg/kg
AROCLOR-1221	79 UJ	μg/kg	74 UJ	μg/kg	73 UJ	μg/kg	73 UJ	μg/kg	76 UJ	μg/kg	74 U	μg/kg
AROCLOR-1232	39 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	37 UJ	μg/kg	37 U	μg/kg
AROCLOR-1242	39 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	37 UJ	μg/kg	37 U	μg/kg
AROCLOR-1248	39 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	37 UJ	μg/kg	37 U	μg/kg
AROCLOR-1254	39 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	37 UJ	μg/kg	37 U	μg/kg
AROCLOR-1260	39 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	36 UJ	μg/kg	37 UJ	μg/kg	37 U	μg/kg
BETA-BHC	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg
DELTA-BHC	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg
DIELDRIN	3.9 UJ	μg/kg	0.9 J	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	44	μg/kg
ENDOSULFAN I	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg
ENDOSULFAN II	3.9 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg
ENDOSULFAN SULFATE	3.9 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg
ENDRIN	3.9 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg
ENDRIN ALDEHYDE	3.9 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg
ENDRIN KETONE	3.9 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg
GAMMA-BHC (LINDANE)	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg
GAMMA-CHLORDANE	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg
HEPTACHLOR	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB10-16-17		3SB2-1-2		3SB2-10-12		3SB2-10-12A		3SB2-6-7		3SB3-0-2	
LAB ID NUMBER	34833002		34838001		34838003		34838004		34838002		34848004	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/9/93		1/9/93		1/9/93		1/9/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	19 UJ	µg/kg	18 UJ	µg/kg	18 UJ	µg/kg	19 UJ	µg/kg	19 U	µg/kg
TOXAPHENE	200 UJ	µg/kg	190 UJ	µg/kg	180 UJ	µg/kg	180 UJ	µg/kg	190 UJ	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.9 U	mg/kg	27.8	mg/kg	1.8 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg	7.6	mg/kg
METALS												
ALUMINUM	5880	mg/kg	9940	mg/kg	2130	mg/kg	1780	mg/kg	26300	mg/kg	21500	mg/kg
ANTIMONY	2.8 U	mg/kg	5.4 U	mg/kg	5.4 U	mg/kg	5.4 U	mg/kg	5.6 U	mg/kg	2.7 U	mg/kg
ARSENIC	0.82 J	mg/kg	3.5	mg/kg	0.62 J	mg/kg	0.47 U	mg/kg	6.8	mg/kg	3.2	mg/kg
BARIUM	8.2 J	mg/kg	6.5 J	mg/kg	1.4 J	mg/kg	1.3 J	mg/kg	8.8 J	mg/kg	14.9 J	mg/kg
BERYLLIUM	0.12 U	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.07 J	mg/kg	0.11 UJ	mg/kg
CADMIUM	0.28 U	mg/kg	0.87 U	mg/kg	0.86 U	mg/kg	0.86 U	mg/kg	0.9 U	mg/kg	0.72 J	mg/kg
CALCIUM	224 J	mg/kg	412 J	mg/kg	13.7 J	mg/kg	10.7 J	mg/kg	243 J	mg/kg	1130	mg/kg
CHROMIUM	11.2	mg/kg	12.7	mg/kg	4.3	mg/kg	3.6	mg/kg	34.5	mg/kg	42.7	mg/kg
COBALT	1.4 U	mg/kg	1.2 J	mg/kg	0.49 U	mg/kg	0.49 U	mg/kg	2.6 J	mg/kg	1.6 J	mg/kg
COPPER	6.6	mg/kg	1.4 J	mg/kg	0.37 U	mg/kg	0.37 U	mg/kg	1 J	mg/kg	9.6	mg/kg
CYANIDE	0.18 U	mg/kg	0.47 J	mg/kg	2.6	mg/kg	0.52 J	mg/kg	0.48 J	mg/kg	0.17 U	mg/kg
IRON	10700	mg/kg	12900	mg/kg	5010	mg/kg	4380	mg/kg	32600	mg/kg	12700	mg/kg
LEAD	2.4	mg/kg	5.8	mg/kg	1.1	mg/kg	0.94	mg/kg	4.4	mg/kg	5.6	mg/kg
MAGNESIUM	106 J	mg/kg	61.3 J	mg/kg	20.5 J	mg/kg	17.3 J	mg/kg	85.9 J	mg/kg	218 J	mg/kg
MANGANESE	5.9	mg/kg	25	mg/kg	7.9	mg/kg	7.5	mg/kg	15.2	mg/kg	61.1	mg/kg
MERCURY	0.04 J	mg/kg	0.03 J	mg/kg	0.02 J	mg/kg	0.03 J	mg/kg	0.1	mg/kg	0.04 J	mg/kg
NICKEL	1.8 U	mg/kg	2.7 U	mg/kg	2.7 U	mg/kg	2.7 U	mg/kg	2.8 U	mg/kg	15.7	mg/kg
POTASSIUM	102 J	mg/kg	146 J	mg/kg	151 J	mg/kg	112 U	mg/kg	152 J	mg/kg	152 J	mg/kg
SELENIUM	0.12 UJ	mg/kg	1 J	mg/kg	0.76 U	mg/kg	0.76 U	mg/kg	1.9	mg/kg	0.11 U	mg/kg
SILVER	0.49 U	mg/kg	1 J	mg/kg	0.98 J	mg/kg	0.55 J	mg/kg	2.1 J	mg/kg	0.47 U	mg/kg
SODIUM	211 J	mg/kg	12.2 U	mg/kg	12.1 U	mg/kg	12.1 U	mg/kg	12.7 J	mg/kg	212 J	mg/kg
THALLIUM	0.16 U	mg/kg	4.8 U	mg/kg	0.48 U	mg/kg	0.48 U	mg/kg	5 U	mg/kg	0.16 U	mg/kg
VANADIUM	29.7	mg/kg	33.9	mg/kg	15.4	mg/kg	14.5	mg/kg	77.2	mg/kg	34	mg/kg
ZINC	4.2 J	mg/kg	1.5 J	mg/kg	0.34 U	mg/kg	0.34 U	mg/kg	0.36 U	mg/kg	9.6	mg/kg

Blank spa[illegible]tes chemical not analyzed.
A or D in[illegible]e number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB3-10-12		3SB3-5-7		3SB4-0-2		3SB4-10-12		3SB4-5-7		3SB5-1-2	
LAB ID NUMBER	34848002		34848003		34848007		34848005		34848006		34833009	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/6/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-HEXANONE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ACETONE	59	µg/kg	90	µg/kg	16	µg/kg	69	µg/kg	23	µg/kg	11 UJ	µg/kg
BENZENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg
STYRENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	3 J	µg/kg
TOLUENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4,5-TRICHLOROPHENOL	900 U	µg/kg	920 U	µg/kg	860 U	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DINITROPHENOL	900 UJ	µg/kg	920 UJ	µg/kg	860 UJ	µg/kg	910 UJ	µg/kg	920 UJ	µg/kg	870 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-CHLOROPHENOL	370 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-METHYLPHENOL	370 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-NITROANILINE	900 U	µg/kg	920 U	µg/kg	860 R	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
3-NITROANILINE	900 U	µg/kg	920 U	µg/kg	860 R	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	900 U	µg/kg	920 U	µg/kg	860 U	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	380 U	µg/kg	350 R	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-NITROANILINE	900 UJ	µg/kg	920 UJ	µg/kg	860 R	µg/kg	910 UJ	µg/kg	920 UJ	µg/kg	870 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB3-10-12		3SB3-6-7		3SB4-0-2		3SB4-10-12		3SB4-6-7		3SB5-1-2	
LAB ID NUMBER	34848002		34848003		34848007		34848005		34848006		34833008	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/8/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-NITROPHENOL	900 U	μg/kg	920 U	μg/kg	860 U	μg/kg	910 U	μg/kg	920 U	μg/kg	870 U	μg/kg
ACENAPHTHENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
ACENAPHTHYLENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
ANTHRACENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
BENZO(A)ANTHRACENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
BENZO(A)PYRENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
BENZO(B)FLUORANTHENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
BENZO(G,H,I)PERYLENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
BENZO(K)FLUORANTHENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	μg/kg	380 UJ	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 UJ	μg/kg
BUTYLBENZYL PHTHALATE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
CARBAZOLE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
CHRYSENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
DI-N-BUTYL PHTHALATE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
DI-N-OCTYL PHTHALATE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
DIBENZO(A,H)ANTHRACENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
DIBENZOFURAN	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
DIETHYL PHTHALATE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
DIMETHYL PHTHALATE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
FLUORANTHENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
FLUORENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
HEXACHLOROBENZENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
HEXACHLOROBUTADIENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
HEXACHLOROETHANE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
INDENO(1,2,3-CD)PYRENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
ISOPHORONE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
N-NITROSODIPHENYLAMINE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
NAPHTHALENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
NITROBENZENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
PENTACHLOROPHENOL	900 UJ	μg/kg	920 UJ	μg/kg	860 UJ	μg/kg	910 UJ	μg/kg	920 UJ	μg/kg	870 U	μg/kg
PHENANTHRENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
PHENOL	370 U	μg/kg	380 U	μg/kg	350 U	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
PYRENE	370 U	μg/kg	380 U	μg/kg	350 R	μg/kg	370 U	μg/kg	380 U	μg/kg	360 U	μg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
4,4'-DDE	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
4,4'-DDT	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
ALDRIN	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg
ALPHA-BHC	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg
ALPHA-CHLORDANE	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg
AROCLOR-1016	37 U	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg	37 U	μg/kg	38 U	μg/kg	36 UJ	μg/kg
AROCLOR-1221	75 U	μg/kg	77 UJ	μg/kg	72 UJ	μg/kg	76 U	μg/kg	77 U	μg/kg	73 UJ	μg/kg
AROCLOR-1232	37 U	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg	37 U	μg/kg	38 U	μg/kg	36 UJ	μg/kg
AROCLOR-1242	37 U	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg	37 U	μg/kg	38 U	μg/kg	36 UJ	μg/kg
AROCLOR-1248	37 U	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg	37 U	μg/kg	38 U	μg/kg	36 UJ	μg/kg
AROCLOR-1254	37 U	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg	37 U	μg/kg	38 U	μg/kg	36 UJ	μg/kg
AROCLOR-1260	37 U	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg	37 U	μg/kg	38 U	μg/kg	36 UJ	μg/kg
BETA-BHC	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg
DELTA-BHC	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg
DIELDRIN	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
ENDOSULFAN I	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg
ENDOSULFAN II	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
ENDOSULFAN SULFATE	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
ENDRIN	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
ENDRIN ALDEHYDE	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
ENDRIN KETONE	3.7 U	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.7 U	μg/kg	3.8 U	μg/kg	3.6 UJ	μg/kg
GAMMA-BHC (LINDANE)	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg
GAMMA-CHLORDANE	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg
HEPTACHLOR	1.9 U	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 U	μg/kg	1.8 UJ	μg/kg

Blank sp tes chemical not analyzed.
A or D in ple number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB3-10-12		3SB3-6-7		3SB4-0-2		3SB4-10-12		3SB4-6-7		3SB5-1-2	
LAB ID NUMBER	34848002		34848003		34848007		34848005		34848006		34833008	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/8/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 U	µg/kg	2 U	µg/kg	1.8 UJ	µg/kg
METHOXYCHLOR	19 U	µg/kg	20 UJ	µg/kg	18 UJ	µg/kg	19 U	µg/kg	20 U	µg/kg	18 UJ	µg/kg
TOXAPHENE	190 U	µg/kg	200 UJ	µg/kg	180 UJ	µg/kg	190 U	µg/kg	200 U	µg/kg	180 UJ	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.9 U	mg/kg	1.9 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg	1.9 U	mg/kg	11.6	mg/kg
METALS												
ALUMINUM	8850	mg/kg	20400	mg/kg	5200	mg/kg	13400	mg/kg	12500	mg/kg	20400	mg/kg
ANTIMONY	2.7 U	mg/kg	2.8 U	mg/kg	2.6 U	mg/kg	2.8 U	mg/kg	2.8 U	mg/kg	2.6 U	mg/kg
ARSENIC	1.5 J	mg/kg	0.96 J	mg/kg	0.58 J	mg/kg	1.5 J	mg/kg	1.3 J	mg/kg	1.7 J	mg/kg
BARIUM	2.5 J	mg/kg	4.2 J	mg/kg	9.7 J	mg/kg	4.2 J	mg/kg	11 J	mg/kg	16.2 J	mg/kg
BERYLLIUM	0.11 UJ	mg/kg	0.11 UJ	mg/kg	0.11 UJ	mg/kg	0.11 UJ	mg/kg	0.11 UJ	mg/kg	0.11 U	mg/kg
CADMIUM	0.27 U	mg/kg	0.61 J	mg/kg	0.26 U	mg/kg	0.27 U	mg/kg	0.28 U	mg/kg	0.36 J	mg/kg
CALCIUM	183 J	mg/kg	214 J	mg/kg	1380	mg/kg	131 J	mg/kg	245 J	mg/kg	385 J	mg/kg
CHROMIUM	10	mg/kg	27.6	mg/kg	3.7	mg/kg	15.3	mg/kg	12.1	mg/kg	15.4	mg/kg
COBALT	1.3 U	mg/kg	1.3 U	mg/kg	1.7 J	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg
COPPER	4.2 J	mg/kg	7.3	mg/kg	3.2 J	mg/kg	4.7 J	mg/kg	3.9 J	mg/kg	8.5	mg/kg
CYANIDE	0.17 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg
IRON	9220	mg/kg	29500	mg/kg	3060	mg/kg	12300	mg/kg	8910	mg/kg	10300	mg/kg
LEAD	2	mg/kg	3.2	mg/kg	3	mg/kg	1.9	mg/kg	1.8	mg/kg	4.4	mg/kg
MAGNESIUM	35.3 J	mg/kg	33 J	mg/kg	104 J	mg/kg	55.4 J	mg/kg	66.6 J	mg/kg	177 J	mg/kg
MANGANESE	12.1	mg/kg	8	mg/kg	151	mg/kg	12.3	mg/kg	4.2	mg/kg	67.7	mg/kg
MERCURY	0.03 U	mg/kg	0.04 J	mg/kg	0.04 J	mg/kg	0.03 U	mg/kg	0.04 J	mg/kg	0.06	mg/kg
NICKEL	2.1 J	mg/kg	1.8 U	mg/kg	2.2 J	mg/kg	2.8 J	mg/kg	2.3 J	mg/kg	2.2 J	mg/kg
POTASSIUM	55.6 J	mg/kg	92.8 J	mg/kg	99.4 J	mg/kg	73.2 J	mg/kg	98.8 J	mg/kg	175 J	mg/kg
SELENIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.13 J	mg/kg	0.41 J	mg/kg
SILVER	0.47 U	mg/kg	0.48 U	mg/kg	0.45 U	mg/kg	0.48 U	mg/kg	0.48 U	mg/kg	0.46 U	mg/kg
SODIUM	161 J	mg/kg	187 J	mg/kg	172 J	mg/kg	214 J	mg/kg	163 J	mg/kg	171 J	mg/kg
THALLIUM	0.16 U	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg
VANADIUM	27.5	mg/kg	60.5	mg/kg	7 J	mg/kg	36.8	mg/kg	24.9	mg/kg	26.4	mg/kg
ZINC	3.3 J	mg/kg	7.4 J	mg/kg	3.9 J	mg/kg	5 J	mg/kg	4.4 J	mg/kg	12.2	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB5-10-12		3SB5-5-7		3SB6-1-2		3SB6-10-12		3SB6-100-102		3SB6-100-102A	
LAB ID NUMBER	34833010		34833009		34908001		34908003		34908010		34907011	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/8/93		1/18/93		1/18/93		1/18/93		1/18/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
2-BUTANONE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
2-HEXANONE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
ACETONE	12 UJ	µg/kg	12 UJ	µg/kg	10 UJ	µg/kg	13 J	µg/kg	14 J	µg/kg	14 J	µg/kg
BENZENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMOFORM	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMOMETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROFORM	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CIS-1,3-DICHLOROPROPENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	12 UJ	µg/kg	11 UJ	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
STYRENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	12 U	µg/kg	3 J	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TOLUENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	2 J	µg/kg	12 U	µg/kg
VINYL CHLORIDE	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	12 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	12 U	µg/kg	12 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
1,2-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
1,3-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
1,4-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2,4,5-TRICHLOROPHENOL	930 U	µg/kg	890 U	µg/kg	840 U	µg/kg	930 U	µg/kg	1000 U	µg/kg	980 U	µg/kg
2,4,6-TRICHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2,4-DICHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2,4-DIMETHYLPHENOL	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2,4-DINITROPHENOL	930 U	µg/kg	890 U	µg/kg	840 U	µg/kg	930 U	µg/kg	1000 U	µg/kg	980 U	µg/kg
2,4-DINITROTOLUENE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2,6-DINITROTOLUENE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2-CHLORONAPHTHALENE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2-CHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2-METHYLNAPHTHALENE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
2-NITROANILINE	930 U	µg/kg	890 U	µg/kg	840 U	µg/kg	930 U	µg/kg	1000 U	µg/kg	980 U	µg/kg
2-NITROPHENOL	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
3,3'-DICHLOROBENZIDINE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
3-NITROANILINE	930 U	µg/kg	890 U	µg/kg	840 U	µg/kg	930 U	µg/kg	1000 U	µg/kg	980 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	930 U	µg/kg	890 U	µg/kg	840 U	µg/kg	930 U	µg/kg	1000 U	µg/kg	980 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
4-CHLOROANILINE	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
4-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	410 U	µg/kg	400 U	µg/kg
4-NITROANILINE	930 U	µg/kg	890 U	µg/kg	840 U	µg/kg	930 U	µg/kg	1000 U	µg/kg	980 U	µg/kg

Blank sp ...ites chemical not analyzed.
A or D in ...le number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB5-10-12		3SB5-5-7		3SB6-1-2		3SB6-10-12		3SB6-100-102		3SB6-100-102A	
LAB ID NUMBER	34833010		34833009		34906001		34906003		34906010		34907011	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/8/93		1/18/93		1/18/93		1/18/93		1/18/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-NITROPHENOL	930 U	μg/kg	890 U	μg/kg	840 U	μg/kg	930 U	μg/kg	1000 U	μg/kg	980 U	μg/kg
ACENAPHTHENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
ACENAPHTHYLENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
ANTHRACENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BENZO(A)ANTHRACENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BENZO(A)PYRENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BENZO(B)FLUORANTHENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BENZO(G,H,I)PERYLENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BENZO(K)FLUORANTHENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	380 UJ	μg/kg	370 UJ	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
BUTYLBENZYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
CARBAZOLE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
CHRYSENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
DI-N-BUTYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	350 UJ	μg/kg	380 UJ	μg/kg	410 UJ	μg/kg	400 UJ	μg/kg
DI-N-OCTYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	350 UJ	μg/kg	380 UJ	μg/kg	410 U	μg/kg	400 U	μg/kg
DIBENZO(A,H)ANTHRACENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
DIBENZOFURAN	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
DIETHYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
DIMETHYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
FLUORANTHENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
FLUORENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
HEXACHLOROBENZENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
HEXACHLOROBUTADIENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
HEXACHLOROETHANE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
INDENO(1,2,3-CD)PYRENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
ISOPHORONE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
N-NITROSODIPHENYLAMINE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
NAPHTHALENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
NITROBENZENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
PENTACHLOROPHENOL	930 U	μg/kg	890 U	μg/kg	840 U	μg/kg	930 U	μg/kg	1000 U	μg/kg	980 U	μg/kg
PHENANTHRENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
PHENOL	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
PYRENE	380 U	μg/kg	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	410 U	μg/kg	400 U	μg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
4,4'-DDE	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
4,4'-DDT	3.8 UJ	μg/kg	3.7 UJ	μg/kg	2.1 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
ALDRIN	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg
ALPHA-BHC	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg
ALPHA-CHLORDANE	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg
AROCLOR-1016	38 UJ	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg	40 UJ	μg/kg
AROCLOR-1221	78 UJ	μg/kg	74 UJ	μg/kg	71 UJ	μg/kg	78 UJ	μg/kg	84 UJ	μg/kg	82 UJ	μg/kg
AROCLOR-1232	38 UJ	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg	40 UJ	μg/kg
AROCLOR-1242	38 UJ	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg	40 UJ	μg/kg
AROCLOR-1248	38 UJ	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg	40 UJ	μg/kg
AROCLOR-1254	38 UJ	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg	40 UJ	μg/kg
AROCLOR-1260	38 UJ	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg	40 UJ	μg/kg
BETA-BHC	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg
DELTA-BHC	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg
DIELDRIN	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
ENDOSULFAN I	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg
ENDOSULFAN II	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
ENDOSULFAN SULFATE	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
ENDRIN	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
ENDRIN ALDEHYDE	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
ENDRIN KETONE	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg	4 UJ	μg/kg
GAMMA-BHC (LINDANE)	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg
GAMMA-CHLORDANE	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg
HEPTACHLOR	2 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg	2.1 UJ	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB5-10-12		3SB5-5-7		3SB6-1-2		3SB6-10-12		3SB6-100-102		3SB6-100-102A	
LAB ID NUMBER	34833010		34833008		34906001		34906003		34906010		34907011	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/8/93		1/18/93		1/18/93		1/18/93		1/18/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg	2.1 UJ	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	19 UJ	µg/kg	18 UJ	µg/kg	20 UJ	µg/kg	21 UJ	µg/kg	21 UJ	µg/kg
TOXAPHENE	200 UJ	µg/kg	190 UJ	µg/kg	180 UJ	µg/kg	200 UJ	µg/kg	210 UJ	µg/kg	210 UJ	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.9 U	mg/kg	4.9	mg/kg	1.7 U	mg/kg	1.9 U	mg/kg	2 U	mg/kg	2 U	mg/kg
METALS												
ALUMINUM	38300	mg/kg	14100	mg/kg	5180	mg/kg	41000	mg/kg	3030	mg/kg	3250	mg/kg
ANTIMONY	2.8 U	mg/kg	2.7 U	mg/kg	5.2 U	mg/kg	5.7 U	mg/kg	5.9 U	mg/kg	6 U	mg/kg
ARSENIC	1.2 J	mg/kg	2.8	mg/kg	1.1 J	mg/kg	1.8 J	mg/kg	1.3 J	mg/kg	1.3 J	mg/kg
BARIUM	8.7 J	mg/kg	10.4 J	mg/kg	8.9 J	mg/kg	6.8 J	mg/kg	34.7 J	mg/kg	14.5 J	mg/kg
BERYLLIUM	0.12 U	mg/kg	0.11 U	mg/kg	0.06 J	mg/kg	0.06 U	mg/kg	0.06 J	mg/kg	0.07 U	mg/kg
CADMIUM	0.79 J	mg/kg	0.31 J	mg/kg	0.83 U	mg/kg	0.92 U	mg/kg	0.95 U	mg/kg	0.95 U	mg/kg
CALCIUM	180 J	mg/kg	265 J	mg/kg	261 J	mg/kg	7.6 U	mg/kg	142 J	mg/kg	136 J	mg/kg
CHROMIUM	36.1	mg/kg	11.2	mg/kg	4.4	mg/kg	29.7	mg/kg	6.2	mg/kg	6.5	mg/kg
COBALT	1.4 U	mg/kg	1.3 U	mg/kg	1 J	mg/kg	1.9 J	mg/kg	0.54 U	mg/kg	0.54 U	mg/kg
COPPER	11.1	mg/kg	5.4 J	mg/kg	7.3	mg/kg	4.6 J	mg/kg	1.6 J	mg/kg	2.1 J	mg/kg
CYANIDE	0.18 U	mg/kg	0.17 U	mg/kg	0.41 J	mg/kg	0.53 J	mg/kg	0.55 J	mg/kg	0.53 J	mg/kg
IRON	29700	mg/kg	8970	mg/kg	2730	mg/kg	25000	mg/kg	2100	mg/kg	2240	mg/kg
LEAD	3.1	mg/kg	3.8	mg/kg	1.5 J	mg/kg	3.5	mg/kg	2 J	mg/kg	2.9	mg/kg
MAGNESIUM	117 J	mg/kg	109 J	mg/kg	226 J	mg/kg	92.4 J	mg/kg	89.2 J	mg/kg	91.5 J	mg/kg
MANGANESE	12.5	mg/kg	39.4	mg/kg	36	mg/kg	22.6	mg/kg	2.5 J	mg/kg	3.5 J	mg/kg
MERCURY	0.05 J	mg/kg	0.04 J	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg
NICKEL	2.8 J	mg/kg	1.7 U	mg/kg	2.6 U	mg/kg	4.3 J	mg/kg	3 U	mg/kg	3 U	mg/kg
POTASSIUM	175 J	mg/kg	116 J	mg/kg	108 U	mg/kg	119 U	mg/kg	271 J	mg/kg	310 J	mg/kg
SELENIUM	0.51 J	mg/kg	0.5 J	mg/kg	1.7	mg/kg	1 J	mg/kg	2.2	mg/kg	2.1	mg/kg
SILVER	0.49 U	mg/kg	0.47 U	mg/kg	0.51 UJ	mg/kg	0.56 UJ	mg/kg	0.58 UJ	mg/kg	0.58 UJ	mg/kg
SODIUM	206 J	mg/kg	189 J	mg/kg	11.6 U	mg/kg	12.9 U	mg/kg	13.4 U	mg/kg	13.4 U	mg/kg
THALLIUM	0.16 U	mg/kg	0.16 U	mg/kg	0.53 U	mg/kg	0.59 U	mg/kg	0.61 U	mg/kg	0.61 U	mg/kg
VANADIUM	72.5	mg/kg	22.7	mg/kg	6.7 J	mg/kg	64.8	mg/kg	15.1	mg/kg	15.6	mg/kg
ZINC	11.1	mg/kg	7.3	mg/kg	3.6 J	mg/kg	2.3 J	mg/kg	3.3 J	mg/kg	8	mg/kg

Blank sp ites chemical not analyzed.
A or D in ile number indicates a duplicate.

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB6-15-17		3SB6-25-27		3SB6-5-7		3SB6-70-72		3SB6-70-72A		3SB7-10-12	
LAB ID NUMBER	34906004		34906005		34906002		34909001		34909002		36018001	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/18/93		1/18/93		1/18/93		1/18/93		1/18/93		1/27/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg
1,1,2-TRICHLOROETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg
1,2-DICHLOROETHENE (TOTAL)	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-BUTANONE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg
2-HEXANONE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ACETONE	22 J	µg/kg	23 J	µg/kg	15 J	µg/kg	12 J	µg/kg	11 UJ	µg/kg	11 J	µg/kg
BENZENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOFORM	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOMETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROFORM	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg
STYRENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg
TOLUENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg
TRICHLOROETHENE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	12 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
1,2-DICHLOROBENZENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
1,3-DICHLOROBENZENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
1,4-DICHLOROBENZENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4,5-TRICHLOROPHENOL	940 U	µg/kg	860 U	µg/kg	910 U	µg/kg	880 U	µg/kg	880 U	µg/kg	920 U	µg/kg
2,4,6-TRICHLOROPHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4-DICHLOROPHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4-DIMETHYLPHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4-DINITROPHENOL	940 U	µg/kg	860 U	µg/kg	910 U	µg/kg	880 U	µg/kg	880 U	µg/kg	920 U	µg/kg
2,4-DINITROTOLUENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,6-DINITROTOLUENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-CHLORONAPHTHALENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-CHLOROPHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-METHYLNAPHTHALENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-METHYLPHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-NITROANILINE	940 U	µg/kg	860 U	µg/kg	910 U	µg/kg	880 U	µg/kg	880 U	µg/kg	920 U	µg/kg
2-NITROPHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
3,3'-DICHLOROBENZIDINE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
3-NITROANILINE	940 U	µg/kg	860 U	µg/kg	910 U	µg/kg	880 U	µg/kg	880 U	µg/kg	920 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	940 U	µg/kg	860 U	µg/kg	910 U	µg/kg	880 U	µg/kg	880 U	µg/kg	920 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-CHLOROANILINE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-METHYLPHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-NITROANILINE	940 U	µg/kg	860 U	µg/kg	910 U	µg/kg	880 U	µg/kg	880 U	µg/kg	920 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB6-15-17		3SB6-25-27		3SB6-5-7		3SB6-70-72		3SB6-70-72A		3SB7-10-12	
LAB ID NUMBER	34906004		34906006		34906002		34909001		34909002		36016001	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/18/93		1/18/93		1/18/93		1/18/93		1/18/93		1/27/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-NITROPHENOL	940 U	µg/kg	860 U	µg/kg	910 U	µg/kg	880 U	µg/kg	880 U	µg/kg	920 U	µg/kg
ACENAPHTHENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
ACENAPHTHYLENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
ANTHRACENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BENZO(A)ANTHRACENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 UJ	µg/kg
BENZO(A)PYRENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BENZO(B)FLUORANTHENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BENZO(G,H,I)PERYLENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 UJ	µg/kg
BENZO(K)FLUORANTHENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	390 U	µg/kg	350 UJ	µg/kg	370 U	µg/kg	360 UJ	µg/kg	360 UJ	µg/kg	380 UJ	µg/kg
BUTYLBENZYL PHTHALATE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 UJ	µg/kg
CARBAZOLE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
CHRYSENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DI-N-BUTYL PHTHALATE	390 UJ	µg/kg	350 U	µg/kg	370 UJ	µg/kg	360 UJ	µg/kg	360 UJ	µg/kg	380 U	µg/kg
DI-N-OCTYL PHTHALATE	390 UJ	µg/kg	350 U	µg/kg	370 UJ	µg/kg	360 UJ	µg/kg	360 UJ	µg/kg	380 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DIBENZOFURAN	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DIETHYL PHTHALATE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DIMETHYL PHTHALATE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
FLUORANTHENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
FLUORENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
HEXACHLOROBENZENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
HEXACHLOROBUTADIENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
HEXACHLOROETHANE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
INDENO(1,2,3-CD)PYRENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
ISOPHORONE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
N-NITROSODIPHENYLAMINE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
NAPHTHALENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
NITROBENZENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
PENTACHLOROPHENOL	940 U	µg/kg	860 U	µg/kg	910 U	µg/kg	880 U	µg/kg	880 U	µg/kg	920 UJ	µg/kg
PHENANTHRENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
PHENOL	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
PYRENE	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.9 UJ	µg/kg	9.6 J	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	5 J	µg/kg
4,4'-DDE	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.8 U	µg/kg
4,4'-DDT	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	5 J	µg/kg
ALDRIN	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg
ALPHA-BHC	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg
ALPHA-CHLORDANE	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg
AROCLOR-1016	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg	38 U	µg/kg
AROCLOR-1221	79 UJ	µg/kg	72 UJ	µg/kg	76 UJ	µg/kg	74 UJ	µg/kg	74 UJ	µg/kg	77 U	µg/kg
AROCLOR-1232	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg	38 U	µg/kg
AROCLOR-1242	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg	38 U	µg/kg
AROCLOR-1248	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg	38 U	µg/kg
AROCLOR-1254	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg	38 U	µg/kg
AROCLOR-1260	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg	38 U	µg/kg
BETA-BHC	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg
DELTA-BHC	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg
DIELDRIN	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.8 U	µg/kg
ENDOSULFAN I	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg
ENDOSULFAN II	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.8 U	µg/kg
ENDOSULFAN SULFATE	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.8 U	µg/kg
ENDRIN	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.8 U	µg/kg
ENDRIN ALDEHYDE	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.8 U	µg/kg
ENDRIN KETONE	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.8 U	µg/kg
GAMMA-BHC (LINDANE)	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg
GAMMA-CHLORDANE	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
HEPTACHLOR	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg

Blank spa· ·s chemical not analyzed.
A or D in t. .e number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB6-15-17		3SB6-26-27		3SB6-5-7		3SB6-70-72		3SB6-70-72A		3SB7-10-12	
LAB ID NUMBER	34906004		34906006		34906002		34909001		34909002		38015001	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/18/93		1/18/93		1/18/93		1/18/93		1/18/93		1/27/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 U	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	18 UJ	µg/kg	19 UJ	µg/kg	19 UJ	µg/kg	19 UJ	µg/kg	20 U	µg/kg
TOXAPHENE	200 UJ	µg/kg	180 UJ	µg/kg	190 UJ	µg/kg	190 UJ	µg/kg	190 UJ	µg/kg	200 U	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	2 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg	1.7 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg
METALS												
ALUMINUM	12300	mg/kg	1160	mg/kg	59600	mg/kg	214 J	mg/kg	487 J	mg/kg	5640	mg/kg
ANTIMONY	5.7 U	mg/kg	5.1 U	mg/kg	5.9 U	mg/kg	5.3 U	mg/kg	5.3 U	mg/kg	5.6 U	mg/kg
ARSENIC	2.6 J	mg/kg	1.5 J	mg/kg	16	mg/kg	0.96 J	mg/kg	1.1 J	mg/kg	4.8	mg/kg
BARIUM	18.3 J	mg/kg	1.5 J	mg/kg	13.5 J	mg/kg	0.79 UJ	mg/kg	1.3 UJ	mg/kg	4.3 J	mg/kg
BERYLLIUM	0.06 U	mg/kg	0.06 U	mg/kg	0.09 J	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.13 J	mg/kg
CADMIUM	0.92 U	mg/kg	0.83 U	mg/kg	0.95 U	mg/kg	0.85 U	mg/kg	0.85 U	mg/kg	0.9 U	mg/kg
CALCIUM	29.1 J	mg/kg	13.7 J	mg/kg	64.9 J	mg/kg	13 UJ	mg/kg	12.3 UJ	mg/kg	7.5 U	mg/kg
CHROMIUM	9.6	mg/kg	3.3	mg/kg	37.9	mg/kg	0.9 J	mg/kg	1.8 J	mg/kg	9.6	mg/kg
COBALT	0.52 U	mg/kg	0.47 U	mg/kg	2.2 J	mg/kg	0.49 U	mg/kg	0.49 U	mg/kg	0.87 J	mg/kg
COPPER	2.7 J	mg/kg	0.36 J	mg/kg	8.3	mg/kg	0.36 U	mg/kg	0.62 UJ	mg/kg	2.1 J	mg/kg
CYANIDE	0.47 J	mg/kg	0.45 J	mg/kg	0.51 J	mg/kg	0.45 UJ	mg/kg	0.47 UJ	mg/kg	0.59 J	mg/kg
IRON	4610	mg/kg	784	mg/kg	20400	mg/kg	245 J	mg/kg	222 J	mg/kg	9630	mg/kg
LEAD	3.2	mg/kg	0.67 J	mg/kg	4.3	mg/kg	0.78 UJ	mg/kg	1.1 UJ	mg/kg	4.5	mg/kg
MAGNESIUM	142 J	mg/kg	8.4 J	mg/kg	265 J	mg/kg	7.7 U	mg/kg	7.7 U	mg/kg	72.8 J	mg/kg
MANGANESE	12.5	mg/kg	2.4 J	mg/kg	21.7	mg/kg	0.8 UJ	mg/kg	1.4 J	mg/kg	4.6	mg/kg
MERCURY	0.02 U	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.02 UJ	mg/kg	0.02 UJ	mg/kg	0.06	mg/kg
NICKEL	2.9 U	mg/kg	2.6 U	mg/kg	5 J	mg/kg	2.7 U	mg/kg	2.7 U	mg/kg	2.8 U	mg/kg
POTASSIUM	377 J	mg/kg	107 U	mg/kg	190 J	mg/kg	111 U	mg/kg	111 U	mg/kg	117 U	mg/kg
SELENIUM	0.67 J	mg/kg	0.8 J	mg/kg	1.7	mg/kg	1.6 UJ	mg/kg	0.77 J	mg/kg	4.9	mg/kg
SILVER	0.56 UJ	mg/kg	0.51 UJ	mg/kg	0.58 UJ	mg/kg	0.52 UJ	mg/kg	0.52 UJ	mg/kg	0.55 U	mg/kg
SODIUM	15.7 J	mg/kg	11.6 U	mg/kg	13.4 U	mg/kg	12 U	mg/kg	12 U	mg/kg	12.6 U	mg/kg
THALLIUM	0.59 U	mg/kg	0.53 U	mg/kg	0.61 U	mg/kg	0.55 U	mg/kg	5.5 U	mg/kg	0.58 U	mg/kg
VANADIUM	22.6	mg/kg	5.4 J	mg/kg	56.3	mg/kg	1.1 UJ	mg/kg	1.2 UJ	mg/kg	29	mg/kg
ZINC	2.2 J	mg/kg	3.9 J	mg/kg	7.5	mg/kg	2.1 UJ	mg/kg	2.5 UJ	mg/kg	0.36 U	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB8-10-12		3SB8-15-17		3SB8-15-17A		3SB9-1-2		3SB9-15-17		3SB9-30-32	
LAB ID NUMBER	34833007		34834001		34834002		34833003		34833005		34833006	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/8/93		1/8/93		1/8/93		1/8/93		1/8/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
ACETONE	11 UJ	µg/kg	19 UJ	µg/kg	22 UJ	µg/kg	10 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	10 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg	12 U	µg/kg	11 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4,5-TRICHLOROPHENOL	910 U	µg/kg	920 U	µg/kg	920 U	µg/kg	830 U	µg/kg	930 U	µg/kg	850 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DINITROPHENOL	910 U	µg/kg	920 UJ	µg/kg	920 UJ	µg/kg	830 UJ	µg/kg	930 U	µg/kg	850 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-CHLOROPHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-METHYLPHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-NITROANILINE	910 U	µg/kg	920 U	µg/kg	920 U	µg/kg	830 U	µg/kg	930 U	µg/kg	850 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
3-NITROANILINE	910 U	µg/kg	920 U	µg/kg	920 UJ	µg/kg	830 U	µg/kg	930 U	µg/kg	850 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	910 U	µg/kg	920 U	µg/kg	920 U	µg/kg	830 U	µg/kg	930 U	µg/kg	850 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-NITROANILINE	910 U	µg/kg	920 UJ	µg/kg	920 UJ	µg/kg	830 UJ	µg/kg	930 U	µg/kg	850 U	µg/kg

Blank spa[illegible]tes chemical not analyzed.
A or D in [illegible]e number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB8-10-12		3SB8-15-17		3SB8-15-17A		3SB9-1-2		3SB9-15-17		3SB9-30-32	
LAB ID NUMBER	34833007		34834001		34834002		34833003		34833005		34833006	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/8/93		1/8/93		1/8/93		1/8/93		1/8/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-NITROPHENOL	910 U	µg/kg	920 UJ	µg/kg	920 UJ	µg/kg	830 U	µg/kg	930 U	µg/kg	850 U	µg/kg
ACENAPHTHENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ANTHRACENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	98 J	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(A)PYRENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	40 J	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	84 J	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	81 J	µg/kg	380 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 UJ	µg/kg	380 UJ	µg/kg	380 UJ	µg/kg	340 U	µg/kg	380 UJ	µg/kg	350 U	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
CARBAZOLE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
CHRYSENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	130 J	µg/kg	380 U	µg/kg	350 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DIBENZO(A,H)ANTHRACENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	380 U	µg/kg	97 J	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
FLUORANTHENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	220 J	µg/kg	380 U	µg/kg	350 U	µg/kg
FLUORENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ISOPHORONE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
NAPHTHALENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
NITROBENZENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
PENTACHLOROPHENOL	910 U	µg/kg	920 U	µg/kg	920 UJ	µg/kg	830 UJ	µg/kg	930 U	µg/kg	850 U	µg/kg
PHENANTHRENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	48 J	µg/kg	380 U	µg/kg	350 U	µg/kg
PHENOL	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	340 U	µg/kg	380 U	µg/kg	350 U	µg/kg
PYRENE	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	180 J	µg/kg	380 U	µg/kg	350 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
4,4'-DDE	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
4,4'-DDT	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
ALDRIN	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
ALPHA-BHC	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
ALPHA-CHLORDANE	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
AROCLOR-1016	37 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1221	76 UJ	µg/kg	77 UJ	µg/kg	77 UJ	µg/kg	71 UJ	µg/kg	78 UJ	µg/kg	71 UJ	µg/kg
AROCLOR-1232	37 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1242	37 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1248	37 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1254	37 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1260	37 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	35 UJ	µg/kg
BETA-BHC	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
DELTA-BHC	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
DIELDRIN	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
ENDOSULFAN I	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
ENDOSULFAN II	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
ENDOSULFAN SULFATE	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN ALDEHYDE	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN KETONE	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.5 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
GAMMA-CHLORDANE	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB8-10-12		3SB8-15-17		3SB8-15-17A		3SB9-1-2		3SB9-15-17		3SB9-30-32	
LAB ID NUMBER	34833007		34834001		34834002		34833003		34833006		34833008	
SITE	3		3		3		3		3		3	
DATE SAMPLED	1/8/93		1/8/93		1/8/93		1/8/93		1/8/93		1/8/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
HEPTACHLOR EPOXIDE	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
METHOXYCHLOR	19 UJ	μg/kg	20 UJ	μg/kg	20 UJ	μg/kg	18 UJ	μg/kg	20 UJ	μg/kg	18 UJ	μg/kg
TOXAPHENE	190 UJ	μg/kg	200 UJ	μg/kg	200 UJ	μg/kg	180 UJ	μg/kg	200 UJ	μg/kg	180 UJ	μg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.9 U	mg/kg	1.9 U	mg/kg	1.8 U	mg/kg	11.5	mg/kg	1.9 U	mg/kg	1.8 U	mg/kg
METALS												
ALUMINUM	21500	mg/kg	2250 J	mg/kg	5320 J	mg/kg	4380	mg/kg	6700	mg/kg	803	mg/kg
ANTIMONY	2.8 U	mg/kg	2.8 U	mg/kg	2.8 U	mg/kg	2.5 U	mg/kg	2.8 U	mg/kg	2.6 U	mg/kg
ARSENIC	1.1 J	mg/kg	1.2 J	mg/kg	1.4 J	mg/kg	0.9 J	mg/kg	1.1 J	mg/kg	0.15 U	mg/kg
BARIUM	4.3 J	mg/kg	5.8 J	mg/kg	8.6 J	mg/kg	6.4 J	mg/kg	4.4 J	mg/kg	1.3 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.12 U	mg/kg	0.12 U	mg/kg	0.1 U	mg/kg	0.12 U	mg/kg	0.11 U	mg/kg
CADMIUM	0.39 J	mg/kg	0.28 U	mg/kg	0.28 U	mg/kg	0.59 J	mg/kg	0.28 U	mg/kg	0.26 U	mg/kg
CALCIUM	233 J	mg/kg	116 J	mg/kg	146 J	mg/kg	392 J	mg/kg	178 J	mg/kg	71.6 J	mg/kg
CHROMIUM	25.9	mg/kg	3.3	mg/kg	5.8	mg/kg	3.2	mg/kg	8.2	mg/kg	0.79 U	mg/kg
COBALT	1.3 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg	1.2 U	mg/kg	1.3 U	mg/kg	1.2 U	mg/kg
COPPER	7.9	mg/kg	2.4 J	mg/kg	3.4 J	mg/kg	3.8 J	mg/kg	5.5 J	mg/kg	0.96 J	mg/kg
CYANIDE	0.19 J	mg/kg	0.17 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg
IRON	20800	mg/kg	2840	mg/kg	4750	mg/kg	2590	mg/kg	7160	mg/kg	86.1	mg/kg
LEAD	3.1	mg/kg	2.4	mg/kg	2.6	mg/kg	3.8	mg/kg	2.5	mg/kg	0.6 J	mg/kg
MAGNESIUM	54 J	mg/kg	59.8 UJ	mg/kg	80.7 J	mg/kg	80.6 J	mg/kg	59.5 J	mg/kg	23.6 J	mg/kg
MANGANESE	9.7	mg/kg	4.5	mg/kg	6.3	mg/kg	104	mg/kg	6.5	mg/kg	0.88 J	mg/kg
MERCURY	0.04 J	mg/kg	0.04 UJ	mg/kg	0.05 UJ	mg/kg	0.03 U	mg/kg	0.03 J	mg/kg	0.03 U	mg/kg
NICKEL	2.1 J	mg/kg	1.8 U	mg/kg	1.8 U	mg/kg	1.7 J	mg/kg	1.8 U	mg/kg	1.6 U	mg/kg
POTASSIUM	123 J	mg/kg	200 UJ	mg/kg	233 UJ	mg/kg	93 J	mg/kg	116 J	mg/kg	79.5 J	mg/kg
SELENIUM	0.73 J	mg/kg	0.12 UJ	mg/kg	0.12 UJ	mg/kg	0.1 U	mg/kg	0.7 J	mg/kg	0.31 J	mg/kg
SILVER	0.48 U	mg/kg	0.48 U	mg/kg	0.48 U	mg/kg	0.44 U	mg/kg	0.49 U	mg/kg	0.45 U	mg/kg
SODIUM	189 J	mg/kg	214 J	mg/kg	214 J	mg/kg	165 J	mg/kg	192 J	mg/kg	158 J	mg/kg
THALLIUM	0.16 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg	0.15 J	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg
VANADIUM	55	mg/kg	13.7	mg/kg	18.8	mg/kg	5.9 J	mg/kg	25.2	mg/kg	0.88 J	mg/kg
ZINC	6.2	mg/kg	2.3 J	mg/kg	4.3 J	mg/kg	4 J	mg/kg	3 J	mg/kg	1.8 J	mg/kg

Blank sp[illegible]tes chemical not analyzed.
A or D in [illegible]le number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB9-5-7		W03SB01101		W03SB01201		W03SB01301		W03SB01302		W03SB01303		W03SB01402	
LAB ID NUMBER	34833004		9803042 - 02		9803014 - 05		9803014 - 02		9803014 - 03		9803014 - 04		9803030 - 02	
SITE	3		3		3		3		3		3		3	
DATE SAMPLED	1/8/93		3/5/98		3/2/98		3/2/98		3/2/98		3/2/98		3/3/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES														
1,1,1-TRICHLOROETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1,2-TRICHLOROETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1-DICHLOROETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1-DICHLOROETHENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROPROPANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
2-BUTANONE	13 U	µg/kg	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg
2-HEXANONE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 UJ	µg/kg
4-METHYL-2-PENTANONE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 UJ	µg/kg
ACETONE	13 UJ	µg/kg	11 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	28 U	µg/kg	100 J	µg/kg
BENZENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMODICHLOROMETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMOFORM	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMOMETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CARBON DISULFIDE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CARBON TETRACHLORIDE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROBENZENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROFORM	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROMETHANE	13 U	µg/kg	2 J	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CIS-1,3-DICHLOROPROPENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
DIBROMOCHLOROMETHANE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
ETHYLBENZENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
METHYLENE CHLORIDE	13 UJ	µg/kg	8 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	26 U	µg/kg
STYRENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TETRACHLOROETHENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TOLUENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TRICHLOROETHENE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
VINYL CHLORIDE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
XYLENES, TOTAL	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg
SEMIVOLATILES														
1,2,4-TRICHLOROBENZENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
1,2-DICHLOROBENZENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
1,3-DICHLOROBENZENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
1,4-DICHLOROBENZENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4,5-TRICHLOROPHENOL	1000 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4,6-TRICHLOROPHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4-DICHLOROPHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4-DIMETHYLPHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4-DINITROPHENOL	1000 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4-DINITROTOLUENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,6-DINITROTOLUENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-CHLORONAPHTHALENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-CHLOROPHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-METHYLNAPHTHALENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-METHYLPHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-NITROANILINE	1000 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-NITROPHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
3,3'-DICHLOROBENZIDINE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
3-NITROANILINE	1000 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	1000 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-CHLORO-3-METHYLPHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-CHLOROANILINE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-METHYLPHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-NITROANILINE	1000 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3SB9-5-7		W03SB01101		W03SB01201		W03SB01301		W03SB01302		W03SB01303		W03SB01402	
LAB ID NUMBER	34833004		9803042 - 02		9803014 - 05		9803014 - 02		9803014 - 03		9803014 - 04		9803030 - 02	
SITE	3		3		3		3		3		3		3	
DATE SAMPLED	1/8/93		3/5/98		3/2/98		3/2/98		3/2/98		3/2/98		3/3/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-NITROPHENOL	1000 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
ACENAPHTHENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
ACENAPHTHYLENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
ANTHRACENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BENZO(A)ANTHRACENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BENZO(A)PYRENE	420 U	µg/kg	110 UJ	µg/kg	120 UJ	µg/kg	20 J	µg/kg	120 UJ	µg/kg	110 UJ	µg/kg	120 UJ	µg/kg
BENZO(B)FLUORANTHENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BENZO(G,H,I)PERYLENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BENZO(K)FLUORANTHENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BUTYLBENZYL PHTHALATE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
CARBAZOLE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
CHRYSENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
DI-N-BUTYL PHTHALATE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
DI-N-OCTYL PHTHALATE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
DIBENZO(A,H)ANTHRACENE	420 U	µg/kg	110 U	µg/kg	120 U	µg/kg	6 J	µg/kg	120 U	µg/kg	110 U	µg/kg	120 U	µg/kg
DIBENZOFURAN	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
DIETHYL PHTHALATE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
DIMETHYL PHTHALATE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
FLUORANTHENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
FLUORENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
HEXACHLOROBENZENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
HEXACHLOROBUTADIENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
HEXACHLOROETHANE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
INDENO(1,2,3-CD)PYRENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
ISOPHORONE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	420 U	µg/kg	21 U	µg/kg	24 U	µg/kg	22 U	µg/kg	23 U	µg/kg	22 U	µg/kg	23 U	µg/kg
N-NITROSODIPHENYLAMINE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
NAPHTHALENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
NITROBENZENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
PENTACHLOROPHENOL	1000 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
PHENANTHRENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
PHENOL	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
PYRENE	420 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
PESTICIDES/PCBs														
4,4'-DDD	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
4,4'-DDE	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
4,4'-DDT	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	0.99 J	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
ALDRIN	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-BHC	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
AROCLOR-1016	42 UJ	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1221	85 UJ	µg/kg	70 U	µg/kg	81 U	µg/kg	72 U	µg/kg	77 U	µg/kg	73 U	µg/kg	77 U	µg/kg
AROCLOR-1232	42 UJ	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1242	42 UJ	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1248	42 UJ	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1254	42 UJ	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1260	42 UJ	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
BETA-BHC	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DELTA-BHC	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DIELDRIN	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	1.3 J	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
ENDOSULFAN I	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
ENDOSULFAN SULFATE	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
ENDRIN	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
ENDRIN ALDEHYDE	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
ENDRIN KETONE	4.2 UJ	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
GAMMA-BHC (LINDANE)	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg

Blank sp ıtes chemical not analyzed.
A or D in ɔle number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	3S89-6-7		W03SB01101		W03SB01201		W03SB01301		W03SB01302		W03SB01303		W03SB01402	
LAB ID NUMBER	34833004		9803042 - 02		9803014 - 05		9803014 - 02		9803014 - 03		9803014 - 04		9803030 - 02	
SITE	3		3		3		3		3		3		3	
DATE SAMPLED	1/8/93		3/5/98		3/2/98		3/2/98		3/2/98		3/2/98		3/6/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
HEPTACHLOR EPOXIDE	2.2 UJ	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	22 UJ	µg/kg	18 U	µg/kg	20 U	µg/kg	18 U	µg/kg	19 U	µg/kg	18 U	µg/kg	19 U	µg/kg
TOXAPHENE	220 UJ	µg/kg	180 U	µg/kg	200 U	µg/kg	180 U	µg/kg	190 U	µg/kg	180 U	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS														
TOTAL PETROLEUM HYDROCARBONS	1.9 U	mg/kg	9 U	mg/kg	9.8 U	mg/kg	11.2	mg/kg	9.6 U	mg/kg	8.88 J	mg/kg	9.9 U	mg/kg
METALS														
ALUMINUM	26300	mg/kg	386 U	mg/kg	7030	mg/kg	13700	mg/kg	18200	mg/kg	2010	mg/kg	6570	mg/kg
ANTIMONY	3.1 U	mg/kg	1.1 UJ	mg/kg	1.2 UJ	mg/kg	1.1 UJ	mg/kg	1.2 UJ	mg/kg	1.1 UJ	mg/kg	1.2 UJ	mg/kg
ARSENIC	0.78 J	mg/kg	2.1 U	mg/kg	2.4 U	mg/kg	2.2	mg/kg	2.9	mg/kg	2.2 U	mg/kg	2.3 U	mg/kg
BARIUM	16.4 J	mg/kg	2.1 U	mg/kg	15.1	mg/kg	11.9	mg/kg	15	mg/kg	2.2 U	mg/kg	7.6	mg/kg
BERYLLIUM	0.13 U	mg/kg	0.63 U	mg/kg	0.73 U	mg/kg	0.65 U	mg/kg	0.7 U	mg/kg	0.65 U	mg/kg	0.7 U	mg/kg
CADMIUM	0.31 J	mg/kg	0.63 U	mg/kg	0.73 U	mg/kg	0.65 U	mg/kg	0.7 U	mg/kg	0.65 U	mg/kg	0.7 U	mg/kg
CALCIUM	429 J	mg/kg	211 U	mg/kg	242 U	mg/kg	408	mg/kg	232 U	mg/kg	218 U	mg/kg	232 U	mg/kg
CHROMIUM	23.5	mg/kg	3.7 J	mg/kg	7.7 J	mg/kg	10.6 J	mg/kg	14.4 J	mg/kg	3.4 J	mg/kg	8.6 J	mg/kg
COBALT	1.5 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg
COPPER	8.6	mg/kg	1.1 U	mg/kg	2.6	mg/kg	4.8	mg/kg	5	mg/kg	1.1 U	mg/kg	3.2	mg/kg
CYANIDE	0.19 U	mg/kg												
IRON	15500	mg/kg	157	mg/kg	2430	mg/kg	6330	mg/kg	6090	mg/kg	120	mg/kg	3080	mg/kg
LEAD	2.6	mg/kg	0.86 J	mg/kg	8.3	mg/kg	5.2 J	mg/kg	6.8 J	mg/kg	1.2 J	mg/kg	4.2 J	mg/kg
MAGNESIUM	157 J	mg/kg	10.7 U	mg/kg	131	mg/kg	202	mg/kg	172	mg/kg	26.1 U	mg/kg	88.5 U	mg/kg
MANGANESE	13.2	mg/kg	1.2	mg/kg	7.7	mg/kg	62	mg/kg	7.7	mg/kg	1.1	mg/kg	7.6	mg/kg
MERCURY	0.07 J	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg
NICKEL	3.4 J	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	2.6	mg/kg	1.7	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg
POTASSIUM	142 J	mg/kg	19.3 U	mg/kg	352	mg/kg	144 U	mg/kg	340	mg/kg	51.1 U	mg/kg	123	mg/kg
SELENIUM	0.13 UJ	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg
SILVER	0.53 U	mg/kg	0.63 U	mg/kg	0.73 U	mg/kg	0.65 U	mg/kg	0.7 U	mg/kg	0.65 U	mg/kg	0.7 U	mg/kg
SODIUM	217 J	mg/kg	106 U	mg/kg	121 U	mg/kg	108 U	mg/kg	116 U	mg/kg	109 U	mg/kg	116 U	mg/kg
THALLIUM	0.18 U	mg/kg	2.1 U	mg/kg	2.4 U	mg/kg	2.2 U	mg/kg	2.3 U	mg/kg	2.2 U	mg/kg	2.3 U	mg/kg
VANADIUM	38.9	mg/kg	1.8	mg/kg	14.4	mg/kg	18.1	mg/kg	24.7	mg/kg	1.3	mg/kg	17.8	mg/kg
ZINC	8.5	mg/kg	2.1 UJ	mg/kg	2.4 UJ	mg/kg	8 J	mg/kg	2.9 J	mg/kg	2.2 UJ	mg/kg	72.3 J	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

SITE 4

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04DP00200		W04DP00201		W04DP00302		W04DP00401		W04DP00701	
LAB ID NUMBER	9802153 - 10		9803164 - 07		9802142 - 11		9803181 - 05		9803070 - 04	
SITE	4		4		4		4		4	
DATE SAMPLED	2/24/98		3/26/98		2/20/98		3/24/98		3/11/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
1,1,2-TRICHLOROETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
1,1-DICHLOROETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
1,1-DICHLOROETHENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
1,2-DICHLOROETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
1,2-DICHLOROPROPANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
2-BUTANONE	28 UR	µg/kg	6 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg	29 UR	µg/kg
2-HEXANONE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 UJ	µg/kg
4-METHYL-2-PENTANONE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 UJ	µg/kg
ACETONE	410 J	µg/kg	6 UJ	µg/kg	36 J	µg/kg	5 U	µg/kg	29 U	µg/kg
BENZENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
BROMODICHLOROMETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
BROMOFORM	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
BROMOMETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
CARBON DISULFIDE	28 U	µg/kg	6 UJ	µg/kg	3 J	µg/kg	5 U	µg/kg	29 U	µg/kg
CARBON TETRACHLORIDE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
CHLOROBENZENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
CHLOROETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
CHLOROFORM	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
CHLOROMETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
CIS-1,3-DICHLOROPROPENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
DIBROMOCHLOROMETHANE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
ETHYLBENZENE	310	µg/kg	6 UJ	µg/kg	73	µg/kg	5 U	µg/kg	3800	µg/kg
METHYL TERT-BUTYL ETHER	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
METHYLENE CHLORIDE	200 U	µg/kg	9 U	µg/kg	19 U	µg/kg	8 U	µg/kg	29 U	µg/kg
STYRENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
TETRACHLOROETHENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
TOLUENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
TRICHLOROETHENE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
VINYL CHLORIDE	28 U	µg/kg	6 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	29 U	µg/kg
XYLENES, TOTAL	280	µg/kg	6 UJ	µg/kg	280	µg/kg	5 U	µg/kg	2900	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
1,2-DICHLOROBENZENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
1,3-DICHLOROBENZENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
1,4-DICHLOROBENZENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 U	µg/kg	390 UJ	µg/kg
2,4,5-TRICHLOROPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4,6-TRICHLOROPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4-DICHLOROPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4-DIMETHYLPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4-DINITROPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,4-DINITROTOLUENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2,6-DINITROTOLUENE	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-CHLORONAPHTHALENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-CHLOROPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-METHYLNAPHTHALENE	380 U	µg/kg	390 U	µg/kg	390 J	µg/kg	360 U	µg/kg	59 J	µg/kg
2-METHYLPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
2-NITROANILINE	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 UJ	µg/kg	390 U	µg/kg
2-NITROPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
3,3'-DICHLOROBENZIDINE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 UJ	µg/kg	390 U	µg/kg
3-NITROANILINE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 UJ	µg/kg	390 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04DP00200		W04DP00201		W04DP00302		W04DP00401		W04DP00701	
LAB ID NUMBER	9802163 - 10		9803184 - 07		9802142 - 11		9803161 - 05		9803070 - 04	
SITE	4		4		4		4		4	
DATE SAMPLED	2/24/98		3/26/98		2/20/98		3/24/98		3/11/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-CHLOROANILINE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 UJ	µg/kg	390 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-METHYLPHENOL	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-NITROANILINE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
4-NITROPHENOL	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 UJ	µg/kg	390 U	µg/kg
ACENAPHTHENE	380 U	µg/kg	390 U	µg/kg	1900	µg/kg	360 U	µg/kg	390 U	µg/kg
ACENAPHTHYLENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
ANTHRACENE	380 U	µg/kg	390 U	µg/kg	1600	µg/kg	360 U	µg/kg	390 U	µg/kg
BENZO(A)ANTHRACENE	380 U	µg/kg	390 U	µg/kg	1900	µg/kg	360 U	µg/kg	390 U	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	120 U	µg/kg	1100 J	µg/kg	110 U	µg/kg	120 U	µg/kg
BENZO(B)FLUORANTHENE	380 U	µg/kg	390 U	µg/kg	1200	µg/kg	360 U	µg/kg	390 U	µg/kg
BENZO(G,H,I)PERYLENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BENZO(K)FLUORANTHENE	380 U	µg/kg	390 U	µg/kg	590	µg/kg	360 U	µg/kg	390 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	µg/kg	390 U	µg/kg	290 J	µg/kg	360 U	µg/kg	53 J	µg/kg
BUTYLBENZYL PHTHALATE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
CARBAZOLE	380 U	µg/kg	390 U	µg/kg	160 J	µg/kg	360 U	µg/kg	390 U	µg/kg
CHRYSENE	380 U	µg/kg	390 U	µg/kg	940	µg/kg	360 U	µg/kg	390 U	µg/kg
DI-N-BUTYL PHTHALATE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
DI-N-OCTYL PHTHALATE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	120 U	µg/kg	230	µg/kg	110 U	µg/kg	120 U	µg/kg
DIBENZOFURAN	380 U	µg/kg	390 U	µg/kg	700	µg/kg	360 U	µg/kg	390 U	µg/kg
DIETHYL PHTHALATE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
DIMETHYL PHTHALATE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
FLUORANTHENE	380 U	µg/kg	390 U	µg/kg	5000	µg/kg	360 U	µg/kg	390 U	µg/kg
FLUORENE	380 U	µg/kg	390 U	µg/kg	1300	µg/kg	360 U	µg/kg	390 U	µg/kg
HEXACHLOROBENZENE	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
HEXACHLOROBUTADIENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
HEXACHLOROETHANE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
INDENO(1,2,3-CD)PYRENE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
ISOPHORONE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	23 U	µg/kg	23 U	µg/kg	61	µg/kg	22 UJ	µg/kg	38	µg/kg
N-NITROSODIPHENYLAMINE	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
NAPHTHALENE	380 U	µg/kg	390 U	µg/kg	770	µg/kg	360 U	µg/kg	390 U	µg/kg
NITROBENZENE	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 UJ	µg/kg	390 U	µg/kg
PENTACHLOROPHENOL	380 U	µg/kg	390 U	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
PHENANTHRENE	380 U	µg/kg	390 U	µg/kg	5000	µg/kg	360 U	µg/kg	390 U	µg/kg
PHENOL	380 U	µg/kg	390 UJ	µg/kg	390 U	µg/kg	360 U	µg/kg	390 U	µg/kg
PYRENE	380 U	µg/kg	390 U	µg/kg	4900	µg/kg	360 U	µg/kg	390 U	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.8 U	µg/kg	3.9 UJ	µg/kg	3.9 U	µg/kg	3.6 UJ	µg/kg	3.9 U	µg/kg
4,4'-DDE	3.8 U	µg/kg	3.9 U	µg/kg	3.9 U	µg/kg	3.6 UJ	µg/kg	3.9 U	µg/kg
4,4'-DDT	3.8 U	µg/kg	3.9 U	µg/kg	3.9 U	µg/kg	3.6 UJ	µg/kg	3.9 U	µg/kg
ALDRIN	1.9 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg	1.8 UJ	µg/kg	1.9 U	µg/kg
ALPHA-BHC	1.9 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	1.9 U	µg/kg	1.9 UJ	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
AROCLOR-1016	38 U	µg/kg	39 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1221	75 U	µg/kg	78 U	µg/kg	77 U	µg/kg	72 U	µg/kg	78 U	µg/kg
AROCLOR-1232	38 U	µg/kg	39 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1242	38 U	µg/kg	39 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1248	38 U	µg/kg	39 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1254	38 U	µg/kg	39 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
AROCLOR-1260	38 U	µg/kg	39 U	µg/kg	39 U	µg/kg	36 U	µg/kg	39 U	µg/kg
BETA-BHC	1.9 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DELTA-BHC	1.9 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg	1.8 UJ	µg/kg	1.9 U	µg/kg

Blank spa[illegible]icates chemical not analyzed.
A or D in [illegible]ple number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04DP00200		W04DP00201		W04DP00302		W04DP00401		W04DP00701	
LAB ID NUMBER	9802153 - 10		9803184 - 07		9802142 - 11		9803181 - 05		9803070 - 04	
SITE	4		4		4		4		6	
DATE SAMPLED	2/24/98		3/25/98		2/20/98		3/24/98		3/11/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	3.8 U	µg/kg	3.9 U	µg/kg	3.9 U	µg/kg	3.6 UJ	µg/kg	3.9 U	µg/kg
ENDOSULFAN I	1.9 U	µg/kg	1.9 UJ	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	3.8 U	µg/kg	3.9 UJ	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.9 U	µg/kg
ENDOSULFAN SULFATE	3.8 U	µg/kg	3.9 UJ	µg/kg	3.9 U	µg/kg	3.6 UJ	µg/kg	3.9 U	µg/kg
ENDRIN	3.8 U	µg/kg	3.9 U	µg/kg	3.9 U	µg/kg	3.6 UJ	µg/kg	3.9 U	µg/kg
ENDRIN ALDEHYDE	3.8 U	µg/kg	3.9 UJ	µg/kg	3.9 U	µg/kg	3.6 UJ	µg/kg	3.9 U	µg/kg
ENDRIN KETONE	3.8 U	µg/kg	3.9 UJ	µg/kg	3.9 U	µg/kg	3.6 UJ	µg/kg	3.9 U	µg/kg
GAMMA-BHC (LINDANE)	1.9 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	1.9 U	µg/kg	1.9 UJ	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR	1.9 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg	1.8 UJ	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	19 U	µg/kg	19 UJ	µg/kg	19 U	µg/kg	18 UJ	µg/kg	19 U	µg/kg
TOXAPHENE	190 U	µg/kg	190 U	µg/kg	190 U	µg/kg	180 U	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS	12	mg/kg		mg/kg	137	mg/kg		mg/kg		mg/kg
TPH (C8-C40)		mg/kg	10 U	mg/kg		mg/kg	7.58 J	mg/kg	53.8	mg/kg
METALS										
ALUMINUM	22100	mg/kg	5780	mg/kg	2290	mg/kg	10800	mg/kg	27500	mg/kg
ANTIMONY	1.1 UJ	mg/kg	0.58 UJ	mg/kg	1.2 UJ	mg/kg	0.53 UJ	mg/kg	1.2 UJ	mg/kg
ARSENIC	5	mg/kg	1.2	mg/kg	2.3 U	mg/kg	1.7	mg/kg	6.2	mg/kg
BARIUM	5.2	mg/kg	7.5	mg/kg	2.3 U	mg/kg	8.6 J	mg/kg	7.4	mg/kg
BERYLLIUM	0.67 U	mg/kg	0.35 U	mg/kg	0.7 U	mg/kg	0.32 U	mg/kg	0.7 U	mg/kg
CADMIUM	0.67 U	mg/kg	0.35 U	mg/kg	0.7 U	mg/kg	0.32 U	mg/kg	0.7 U	mg/kg
CALCIUM	222 U	mg/kg	1040	mg/kg	232 U	mg/kg	243	mg/kg	233 U	mg/kg
CHROMIUM	34	mg/kg	23.2	mg/kg	5.7	mg/kg	8.7	mg/kg	32.1 J	mg/kg
COBALT	1.1 U	mg/kg	0.58 U	mg/kg	1.2 U	mg/kg	0.53 U	mg/kg	1.2 U	mg/kg
COPPER	9	mg/kg	4.2	mg/kg	1.2 U	mg/kg	3	mg/kg	7.1 J	mg/kg
IRON	14700	mg/kg	3180	mg/kg	964	mg/kg	5790	mg/kg	16600	mg/kg
LEAD	5.2 J	mg/kg	4.2 J	mg/kg	3.9 J	mg/kg	5.2	mg/kg	15.3 J	mg/kg
MAGNESIUM	54.6	mg/kg	102	mg/kg	22.2 U	mg/kg	75.6	mg/kg	103	mg/kg
MANGANESE	10.2	mg/kg	10.2	mg/kg	5.2	mg/kg	34.6	mg/kg	17.9	mg/kg
MERCURY	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg
NICKEL	1.3	mg/kg	1.3	mg/kg	1.2 U	mg/kg	1.3	mg/kg	5	mg/kg
POTASSIUM	76.7	mg/kg	148	mg/kg	61.5	mg/kg	50.3	mg/kg	147	mg/kg
SELENIUM	1.1 UJ	mg/kg	0.58 UJ	mg/kg	1.2 UJ	mg/kg	0.53 U	mg/kg	1.2 U	mg/kg
SILVER	0.67 U	mg/kg	0.35 U	mg/kg	0.7 U	mg/kg	0.32 U	mg/kg	0.7 U	mg/kg
SODIUM	111 U	mg/kg	57.9 U	mg/kg	116 U	mg/kg	52.7 U	mg/kg	116 U	mg/kg
THALLIUM	2.2 U	mg/kg	1.2 U	mg/kg	2.3 U	mg/kg	1.1 U	mg/kg	2.3 U	mg/kg
VANADIUM	40.8	mg/kg	12.6	mg/kg	4.6	mg/kg	15.3	mg/kg	49.8	mg/kg
ZINC	4.5	mg/kg	2	mg/kg	2.3 U	mg/kg	4.3	mg/kg	5.2	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04DP01101		W04MS00401		W04MS01101		W04SB00101		W04SB00102	
LAB ID NUMBER	9803164 - 11		9803161 - 06		9803164 - 10		9802145 - 03		9802145 - 04	
SITE	4		4		4		4		4	
DATE SAMPLED	3/25/98		3/24/98		3/25/98		2/21/98		2/21/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
1,1,2-TRICHLOROETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
1,1-DICHLOROETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
1,1-DICHLOROETHENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
1,2-DICHLOROETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
1,2-DICHLOROPROPANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
2-BUTANONE	6 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg	28 UR	µg/kg
2-HEXANONE	6 UJ	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
4-METHYL-2-PENTANONE	6 UJ	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
ACETONE	10	µg/kg	5 UJ	µg/kg	8 J	µg/kg	7 U	µg/kg	28 U	µg/kg
BENZENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
BROMODICHLOROMETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
BROMOFORM	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
BROMOMETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
CARBON DISULFIDE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
CARBON TETRACHLORIDE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
CHLOROBENZENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
CHLOROETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
CHLOROFORM	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
CHLOROMETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
CIS-1,3-DICHLOROPROPENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
DIBROMOCHLOROMETHANE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
ETHYLBENZENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	4300 J	µg/kg
METHYL TERT-BUTYL ETHER	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
METHYLENE CHLORIDE	13 U	µg/kg	5 U	µg/kg	14 U	µg/kg	10 U	µg/kg	28 U	µg/kg
STYRENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
TETRACHLOROETHENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
TOLUENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	46	µg/kg
TRANS-1,3-DICHLOROPROPENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
TRICHLOROETHENE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
VINYL CHLORIDE	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	28 U	µg/kg
XYLENES, TOTAL	6 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	4700 J	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 UJ	µg/kg	350 U	µg/kg	400 UJ	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4,6-TRICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4-DINITROTOLUENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	380 UJ	µg/kg	350 U	µg/kg	400 UJ	µg/kg	360 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-CHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-NITROANILINE	380 UJ	µg/kg	350 UJ	µg/kg	400 UJ	µg/kg	360 U	µg/kg	370 U	µg/kg
2-NITROPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	380 U	µg/kg	350 UJ	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
3-NITROANILINE	380 U	µg/kg	350 UJ	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg

Blank spa' 'icates chemical not analyzed.
A or D ir ple number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04DP01101		W04MS00401		W04MS01101		W04SS00101		W04SS00102	
LAB ID NUMBER	9803164 - 11		9803161 - 06		9803164 - 10		9802148 - 03		9802148 - 04	
SITE	4		4		4		4		4	
DATE SAMPLED	3/25/98		3/24/98		3/25/98		2/21/98		2/21/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	380 U	µg/kg	350 UJ	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	380 UJ	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-NITROANILINE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-NITROPHENOL	380 UJ	µg/kg	350 UJ	µg/kg	400 UJ	µg/kg	360 U	µg/kg	370 U	µg/kg
ACENAPHTHENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
ANTHRACENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	41 J	µg/kg
BENZO(A)ANTHRACENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	72 J	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	48 J	µg/kg
BENZO(B)FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	380 UJ	µg/kg	350 U	µg/kg	400 UJ	µg/kg	360 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	µg/kg	45 J	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
CARBAZOLE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	70 J	µg/kg
CHRYSENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	59 J	µg/kg
DI-N-BUTYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	9 J	µg/kg
DIBENZOFURAN	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	190 J	µg/kg
FLUORENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	380 UJ	µg/kg	350 U	µg/kg	400 UJ	µg/kg	360 U	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 UJ	µg/kg	370 UJ	µg/kg
HEXACHLOROETHANE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
ISOPHORONE	380 U	µg/kg	350 U	µg/kg	400 UJ	µg/kg	360 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	23 U	µg/kg	21 UJ	µg/kg	24 U	µg/kg	22 U	µg/kg	59	µg/kg
N-NITROSODIPHENYLAMINE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
NAPHTHALENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
NITROBENZENE	380 UJ	µg/kg	350 UJ	µg/kg	400 UJ	µg/kg	360 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
PHENANTHRENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	140 J	µg/kg
PHENOL	380 UJ	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg
PYRENE	380 U	µg/kg	350 U	µg/kg	400 U	µg/kg	360 U	µg/kg	120 J	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.8 UJ	µg/kg	3.5 U	µg/kg	4 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
4,4'-DDE	3.8 U	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
4,4'-DDT	3.8 U	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ALDRIN	1.9 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	1.9 UJ	µg/kg	1.8 U	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
AROCLOR-1016	38 U	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1221	76 U	µg/kg	71 U	µg/kg	79 U	µg/kg	72 U	µg/kg	74 U	µg/kg
AROCLOR-1232	38 U	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1242	38 U	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1248	38 U	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1254	38 U	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1260	38 U	µg/kg	35 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg
BETA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DELTA-BHC	1.9 U	µg/kg	1.8 UJ	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04DP01101		W04MS00401		W04MS01101		W04SB00101		W04SB00102	
LAB ID NUMBER	9803164 - 11		9803161 - 06		9803164 - 10		9802146 - 03		9802146 - 04	
SITE	4		4		4		4		4	
DATE SAMPLED	3/25/98		3/24/98		3/26/98		2/21/98		2/21/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	3.8 U	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDOSULFAN I	1.9 UJ	µg/kg	1.8 U	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	3.8 UJ	µg/kg	3.5 U	µg/kg	4 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDOSULFAN SULFATE	3.8 UJ	µg/kg	3.5 U	µg/kg	4 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN	3.8 U	µg/kg	3.5 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN ALDEHYDE	3.8 UJ	µg/kg	3.5 U	µg/kg	4 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN KETONE	3.8 UJ	µg/kg	3.5 U	µg/kg	4 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
GAMMA-BHC (LINDANE)	1.9 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	1.9 UJ	µg/kg	1.8 U	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR	1.9 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	19 UJ	µg/kg	18 U	µg/kg	20 UJ	µg/kg	18 U	µg/kg	19 U	µg/kg
TOXAPHENE	190 U	µg/kg	180 U	µg/kg	200 U	µg/kg	180 U	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg	8.98	mg/kg	118	mg/kg
TPH (C8-C40)	10 U	mg/kg	9 U	mg/kg	9.6 U	mg/kg		mg/kg		mg/kg
METALS										
ALUMINUM	2990	mg/kg	1300	mg/kg	8340	mg/kg	17400	mg/kg	12100	mg/kg
ANTIMONY	0.56 UJ	mg/kg	0.41 UJ	mg/kg	0.59 UJ	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
ARSENIC	1.1 U	mg/kg	0.82 U	mg/kg	1.2 U	mg/kg	3.4	mg/kg	2.2	mg/kg
BARIUM	6	mg/kg	1.1 J	mg/kg	10	mg/kg	5.8	mg/kg	3.8	mg/kg
BERYLLIUM	0.33 U	mg/kg	0.25 U	mg/kg	0.36 U	mg/kg	0.65 U	mg/kg	0.67 U	mg/kg
CADMIUM	0.33 U	mg/kg	0.25 U	mg/kg	0.36 U	mg/kg	0.65 U	mg/kg	0.67 U	mg/kg
CALCIUM	111 U	mg/kg	81.9 U	mg/kg	119 U	mg/kg	215 U	mg/kg	223 U	mg/kg
CHROMIUM	2.3	mg/kg	4.4	mg/kg	7.2	mg/kg	11.2	mg/kg	36.8	mg/kg
COBALT	0.56 U	mg/kg	0.41 U	mg/kg	0.59 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
COPPER	0.56 U	mg/kg	0.41 U	mg/kg	1	mg/kg	5.7	mg/kg	3.7	mg/kg
IRON	286	mg/kg	110	mg/kg	598	mg/kg	9110	mg/kg	7540	mg/kg
LEAD	1.8 J	mg/kg	0.68	mg/kg	3.5 J	mg/kg	3.4	mg/kg	8.8	mg/kg
MAGNESIUM	63.9	mg/kg	7.8 U	mg/kg	119	mg/kg	125 U	mg/kg	68.7 U	mg/kg
MANGANESE	1.8	mg/kg	1.1	mg/kg	3.6	mg/kg	23.2	mg/kg	9.1	mg/kg
MERCURY	0.04 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg
NICKEL	0.56 U	mg/kg	0.41 U	mg/kg	0.59 U	mg/kg	1.8	mg/kg	3.4	mg/kg
POTASSIUM	81.5	mg/kg	22	mg/kg	140	mg/kg	102	mg/kg	73.2	mg/kg
SELENIUM	0.56 UJ	mg/kg	0.41 U	mg/kg	0.59 UJ	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
SILVER	0.33 U	mg/kg	0.25 U	mg/kg	0.36 U	mg/kg	0.65 U	mg/kg	0.67 U	mg/kg
SODIUM	55.6 U	mg/kg	41 U	mg/kg	59.5 U	mg/kg	108 U	mg/kg	111 U	mg/kg
THALLIUM	1.1 U	mg/kg	0.82 U	mg/kg	1.2 U	mg/kg	2.2 U	mg/kg	2.2 U	mg/kg
VANADIUM	3	mg/kg	1.4	mg/kg	5.8	mg/kg	23.5	mg/kg	20.4	mg/kg
ZINC	2.7	mg/kg	0.82 U	mg/kg	1.3	mg/kg	6.2	mg/kg	2.7	mg/kg

Blank spe' 'icates chemical not analyzed.
A or D ir ple number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00103		W04SB00104		W04SB00201		W04SB00202		W04SB00203	
LAB ID NUMBER	9802145 - 05		9802145 - 06		9803164 - 05		9803164 - 06		9803164 - 08	
SITE	4		4		4		4		4	
DATE SAMPLED	2/21/98		2/23/98		3/25/98		3/25/98		3/26/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
1,1,2-TRICHLOROETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
1,1-DICHLOROETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
1,1-DICHLOROETHENE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
1,2-DICHLOROETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
1,2-DICHLOROPROPANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
2-BUTANONE	28 UR	μg/kg	5 UR	μg/kg	5 UR	μg/kg	6 UR	μg/kg	5 UR	μg/kg
2-HEXANONE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 UJ	μg/kg	5 UJ	μg/kg
4-METHYL-2-PENTANONE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 UJ	μg/kg	5 UJ	μg/kg
ACETONE	100 U	μg/kg	27 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	4 J	μg/kg
BENZENE	770	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
BROMODICHLOROMETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
BROMOFORM	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
BROMOMETHANE	28 U	μg/kg	5 UJ	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
CARBON DISULFIDE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
CARBON TETRACHLORIDE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
CHLOROBENZENE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
CHLOROETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
CHLOROFORM	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
CHLOROMETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
CIS-1,3-DICHLOROPROPENE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
DIBROMOCHLOROMETHANE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
ETHYLBENZENE	380 J	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
METHYL TERT-BUTYL ETHER	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
METHYLENE CHLORIDE	46 U	μg/kg	69 J	μg/kg	65 U	μg/kg	8 U	μg/kg	8 U	μg/kg
STYRENE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
TETRACHLOROETHENE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
TOLUENE	630 J	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
TRICHLOROETHENE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
VINYL CHLORIDE	28 U	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
XYLENES, TOTAL	1600	μg/kg	5 U	μg/kg	5 UJ	μg/kg	6 U	μg/kg	5 U	μg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
1,2-DICHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
1,3-DICHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
1,4-DICHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	μg/kg	350 U	μg/kg	360 UJ	μg/kg	380 UJ	μg/kg	360 UJ	μg/kg
2,4,5-TRICHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2,4,6-TRICHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2,4-DICHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2,4-DIMETHYLPHENOL	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2,4-DINITROPHENOL	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2,4-DINITROTOLUENE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2,6-DINITROTOLUENE	370 U	μg/kg	350 U	μg/kg	360 UJ	μg/kg	380 UJ	μg/kg	360 UJ	μg/kg
2-CHLORONAPHTHALENE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2-CHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2-METHYLNAPHTHALENE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2-METHYLPHENOL	130 J	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
2-NITROANILINE	370 U	μg/kg	350 U	μg/kg	360 UJ	μg/kg	380 UJ	μg/kg	360 UJ	μg/kg
2-NITROPHENOL	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
3,3'-DICHLOROBENZIDINE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
3-NITROANILINE	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
4,6-DINITRO-2-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg
4-BROMOPHENYL PHENYL ETHER	370 U	μg/kg	350 U	μg/kg	360 U	μg/kg	380 U	μg/kg	360 U	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00103		W04SB00104		W04SB00201		W04SB00202		W04SB00203	
LAB ID NUMBER	9802145 - 05		9802145 - 06		9803164 - 05		9803164 - 06		9803164 - 08	
SITE	4		4		4		4		4	
DATE SAMPLED	2/21/98		2/23/98		3/25/98		3/25/98		3/25/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-METHYLPHENOL	150 J	µg/kg	350 U	µg/kg	360 U	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
4-NITROANILINE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-NITROPHENOL	370 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
ACENAPHTHENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ANTHRACENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(A)PYRENE	19 J	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	130 J	µg/kg	210 J	µg/kg	360 U	µg/kg	380 U	µg/kg	370 J	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
CARBAZOLE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
CHRYSENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	54 J	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	150 J	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
FLUORANTHENE	59 J	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
FLUORENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 UJ	µg/kg	350 UJ	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ISOPHORONE	370 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg	380 U	µg/kg	360 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	28	µg/kg	21 U	µg/kg	22 U	µg/kg	23 U	µg/kg	22 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
NAPHTHALENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
NITROBENZENE	370 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
PENTACHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PHENANTHRENE	370 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PHENOL	48 J	µg/kg	350 U	µg/kg	360 U	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
PYRENE	42 J	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.7 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg	3.8 UJ	µg/kg	3.6 U	µg/kg
4,4'-DDE	3.7 U	µg/kg	3.5 U	µg/kg	1.9 J	µg/kg	3.8 U	µg/kg	3.6 UJ	µg/kg
4,4'-DDT	3.7 U	µg/kg	3.5 U	µg/kg	1.7 J	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ALDRIN	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-CHLORDANE	1.9 U	µg/kg	1.8 U	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
AROCLOR-1016	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1221	75 U	µg/kg	70 U	µg/kg	72 U	µg/kg	76 U	µg/kg	73 U	µg/kg
AROCLOR-1232	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1242	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1248	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1254	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1260	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
BETA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg

Blank sp[illegible]icates chemical not analyzed.
A or D i[illegible]ple number indicates a duplicate.

CTO 0028

Rev. 1
5/4/99

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00103		W04SB00104		W04SB00201		W04SB00202		W04SB00203	
LAB ID NUMBER	9802145 - 05		9802145 - 06		9803164 - 05		9803164 - 06		9803164 - 08	
SITE	4		4		4		4		4	
DATE SAMPLED	2/21/98		2/23/98		3/26/98		3/25/98		3/26/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	3.7 U	μg/kg	3.5 U	μg/kg	15	μg/kg	3.8 U	μg/kg	3.6 U	μg/kg
ENDOSULFAN I	1.9 U	μg/kg	1.8 U	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg
ENDOSULFAN II	3.7 U	μg/kg	3.5 U	μg/kg	3.6 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ENDOSULFAN SULFATE	3.7 U	μg/kg	3.5 U	μg/kg	3.6 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ENDRIN	3.7 U	μg/kg	3.5 U	μg/kg	3.6 U	μg/kg	3.8 U	μg/kg	3.6 U	μg/kg
ENDRIN ALDEHYDE	3.7 U	μg/kg	3.5 U	μg/kg	3.6 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ENDRIN KETONE	3.7 U	μg/kg	3.5 U	μg/kg	3.6 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
GAMMA-BHC (LINDANE)	1.9 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	1.9 U	μg/kg	1.8 U	μg/kg
GAMMA-CHLORDANE	1.9 U	μg/kg	1.8 U	μg/kg	1.8 UJ	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg
HEPTACHLOR	1.9 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	1.9 U	μg/kg	1.8 U	μg/kg
HEPTACHLOR EPOXIDE	1.9 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg	1.9 U	μg/kg	1.8 U	μg/kg
METHOXYCHLOR	19 U	μg/kg	18 U	μg/kg	18 UJ	μg/kg	19 UJ	μg/kg	18 UJ	μg/kg
TOXAPHENE	190 U	μg/kg	180 U	μg/kg	180 U	μg/kg	190 U	μg/kg	180 U	μg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS	9.71	mg/kg	10 U	mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg	8.9 U	mg/kg	9.6 U	mg/kg	9.1 U	mg/kg
METALS										
ALUMINUM	2230	mg/kg	754	mg/kg	7800	mg/kg	4750	mg/kg	2390	mg/kg
ANTIMONY	1.1 U	mg/kg	1 U	mg/kg	0.53 UJ	mg/kg	0.57 UJ	mg/kg	0.53 UJ	mg/kg
ARSENIC	2.2 U	mg/kg	2.1 U	mg/kg	1.4	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
BARIUM	2.2 U	mg/kg	2.5	mg/kg	9.6	mg/kg	9.3	mg/kg	4.2	mg/kg
BERYLLIUM	0.66 U	mg/kg	0.63 U	mg/kg	0.32 U	mg/kg	0.34 U	mg/kg	0.32 U	mg/kg
CADMIUM	0.66 U	mg/kg	0.63 U	mg/kg	0.32 U	mg/kg	0.34 U	mg/kg	0.32 U	mg/kg
CALCIUM	219 U	mg/kg	209 U	mg/kg	171	mg/kg	114 U	mg/kg	107 U	mg/kg
CHROMIUM	3.4	mg/kg	3.6	mg/kg	6.9	mg/kg	4.4	mg/kg	21.6	mg/kg
COBALT	1.1 U	mg/kg	1 U	mg/kg	0.55	mg/kg	0.57 U	mg/kg	0.53 U	mg/kg
COPPER	1.1 U	mg/kg	1 U	mg/kg	4	mg/kg	1.5	mg/kg	0.67	mg/kg
IRON	446	mg/kg	134	mg/kg	4000	mg/kg	1600	mg/kg	289	mg/kg
LEAD	3.8	mg/kg	3.4	mg/kg	11.9 J	mg/kg	3.6 J	mg/kg	1.4 J	mg/kg
MAGNESIUM	15.6 U	mg/kg	17.2 U	mg/kg	139	mg/kg	76.1	mg/kg	39 U	mg/kg
MANGANESE	4.1	mg/kg	1 U	mg/kg	83.6	mg/kg	5.8	mg/kg	2.7	mg/kg
MERCURY	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg
NICKEL	1.1 U	mg/kg	1 U	mg/kg	1.4	mg/kg	0.57 U	mg/kg	2.9	mg/kg
POTASSIUM	31.7 U	mg/kg	27.6 U	mg/kg	96.1	mg/kg	262	mg/kg	75.8	mg/kg
SELENIUM	1.1 U	mg/kg	1 U	mg/kg	0.53 UJ	mg/kg	0.57 UJ	mg/kg	0.53 UJ	mg/kg
SILVER	0.66 U	mg/kg	0.63 U	mg/kg	0.32 U	mg/kg	0.34 U	mg/kg	0.32 U	mg/kg
SODIUM	109 U	mg/kg	105 U	mg/kg	52.5 U	mg/kg	56.8 U	mg/kg	53.4 U	mg/kg
THALLIUM	2.2 U	mg/kg	2.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
VANADIUM	3.2	mg/kg	1.4	mg/kg	10.6	mg/kg	8	mg/kg	1.8	mg/kg
ZINC	2.2 U	mg/kg	2.1 U	mg/kg	10	mg/kg	1.2	mg/kg	1.1 U	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00301		W04SB00302		W04SB00303		W04SB00304		W04SB00401	
LAB ID NUMBER	9802142 - 09		9802142 - 10		9802142 - 12		9802145 - 01		9803161 - 04	
SITE	4		4		4		4		4	
DATE SAMPLED	2/20/98		2/20/98		2/20/98		2/20/98		3/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,1,2-TRICHLOROETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHENE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,2-DICHLOROPROPANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
2-BUTANONE	5 UR	µg/kg	6 UR	µg/kg	26 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg
2-HEXANONE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
4-METHYL-2-PENTANONE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
ACETONE	8 J	µg/kg	100 J	µg/kg	33 J	µg/kg	5 U	µg/kg	5 UJ	µg/kg
BENZENE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
BROMODICHLOROMETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
BROMOFORM	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
BROMOMETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg
CARBON DISULFIDE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CARBON TETRACHLORIDE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CHLOROBENZENE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CHLOROETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CHLOROFORM	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CHLOROMETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CIS-1,3-DICHLOROPROPENE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
DIBROMOCHLOROMETHANE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
ETHYLBENZENE	2 J	µg/kg	97	µg/kg	8 J	µg/kg	5 U	µg/kg	5 U	µg/kg
METHYL TERT-BUTYL ETHER	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
METHYLENE CHLORIDE	40 U	µg/kg	25 U	µg/kg	67 U	µg/kg	58 U	µg/kg	5 U	µg/kg
STYRENE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
TETRACHLOROETHENE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
TOLUENE	11	µg/kg	6 U	µg/kg	7 J	µg/kg	5 U	µg/kg	5 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
TRICHLOROETHENE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
VINYL CHLORIDE	5 U	µg/kg	6 U	µg/kg	26 U	µg/kg	5 U	µg/kg	5 U	µg/kg
XYLENES, TOTAL	4 J	µg/kg	290	µg/kg	30	µg/kg	3 J	µg/kg	5 U	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2,4,5-TRICHLOROPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2,4-DINITROPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2-CHLOROPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	89 J	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
2-NITROANILINE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg
2-NITROPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg
3-NITROANILINE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg

Blank spa[illegible]cates chemical not analyzed.
A or D in[illegible]ple number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00301		W04SB00302		W04SB00303		W04SB00304		W04SB00401	
LAB ID NUMBER	9802142 - 09		9802142 - 10		9802142 - 12		9802145 - 01		9803161 - 04	
SITE	4		4		4		4		4	
DATE SAMPLED	2/20/98		2/20/98		2/20/98		2/20/98		3/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
4-CHLOROANILINE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
4-NITROANILINE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
4-NITROPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg
ACENAPHTHENE	360 U	µg/kg	640	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
ANTHRACENE	58 J	µg/kg	700	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
BENZO(A)ANTHRACENE	48 J	µg/kg	990	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
BENZO(A)PYRENE	26 J	µg/kg	490 J	µg/kg	14 J	µg/kg	4 J	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	420.	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	110 J	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	510	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	360 U	µg/kg	140 J	µg/kg	71 J	µg/kg	350 U	µg/kg	110 J	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
CARBAZOLE	360 U	µg/kg	47 J	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
CHRYSENE	110 J	µg/kg	560	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
DIBENZO(A,H)ANTHRACENE	7 J	µg/kg	97 J	µg/kg	4 J	µg/kg	100 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	230 J	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
FLUORANTHENE	80 J	µg/kg	3200	µg/kg	94 J	µg/kg	51 J	µg/kg	360 U	µg/kg
FLUORENE	360 U	µg/kg	520	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 UJ	µg/kg	360 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	120 J	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
ISOPHORONE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	µg/kg	14 J	µg/kg	34	µg/kg	21 U	µg/kg	22 UJ	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
NAPHTHALENE	360 U	µg/kg	160 J	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
NITROBENZENE	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 UJ	µg/kg
PENTACHLOROPHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
PHENANTHRENE	75 J	µg/kg	3000	µg/kg	99 J	µg/kg	350 U	µg/kg	360 U	µg/kg
PHENOL	360 U	µg/kg	380 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg
PYRENE	68 J	µg/kg	2900	µg/kg	74 J	µg/kg	38 J	µg/kg	360 U	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg
4,4'-DDE	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg
4,4'-DDT	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg
ALDRIN	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 UJ	µg/kg
ALPHA-BHC	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg
ALPHA-CHLORDANE	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg
AROCLOR-1016	36 U	µg/kg	38 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg
AROCLOR-1221	72 U	µg/kg	76 U	µg/kg	70 U	µg/kg	70 U	µg/kg	72 U	µg/kg
AROCLOR-1232	36 U	µg/kg	38 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg
AROCLOR-1242	36 U	µg/kg	38 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg
AROCLOR-1248	36 U	µg/kg	38 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg
AROCLOR-1254	36 U	µg/kg	38 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg
AROCLOR-1260	36 U	µg/kg	38 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg
BETA-BHC	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00301		W04SB00302		W04SB00303		W04SB00304		W04SB00401	
LAB ID NUMBER	9802142 - 09		9802142 - 10		9802142 - 12		9802145 - 01		9803161 - 04	
SITE	4		4		4		4		4	
DATE SAMPLED	2/20/98		2/20/98		2/20/98		2/20/98		3/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg
ENDOSULFAN I	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg
ENDOSULFAN II	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN SULFATE	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg
ENDRIN	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg
ENDRIN ALDEHYDE	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg
ENDRIN KETONE	3.6 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg
GAMMA-CHLORDANE	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg
METHOXYCHLOR	18 U	µg/kg	19 U	µg/kg	18 U	µg/kg	17 U	µg/kg	18 UJ	µg/kg
TOXAPHENE	180 U	µg/kg	190 U	µg/kg	180 U	µg/kg	170 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS	6.68 J	mg/kg	179	mg/kg	10.4	mg/kg	10 U	mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg	9.2 U	mg/kg
METALS										
ALUMINUM	8630	mg/kg	1700	mg/kg	936	mg/kg	366	mg/kg	7660	mg/kg
ANTIMONY	1 UJ	mg/kg	1.1 UJ	mg/kg	1 UJ	mg/kg	1 U	mg/kg	0.43 UJ	mg/kg
ARSENIC	2.1 U	mg/kg	2.2 U	mg/kg	2 U	mg/kg	2.1 U	mg/kg	0.92	mg/kg
BARIUM	11.2	mg/kg	2.2 U	mg/kg	2 U	mg/kg	2.1 U	mg/kg	8.3 J	mg/kg
BERYLLIUM	0.63 U	mg/kg	0.67 U	mg/kg	0.61 U	mg/kg	0.62 U	mg/kg	0.26 U	mg/kg
CADMIUM	0.63 U	mg/kg	0.67 U	mg/kg	0.61 U	mg/kg	0.62 U	mg/kg	0.26 U	mg/kg
CALCIUM	210 U	mg/kg	223 U	mg/kg	205 U	mg/kg	205 U	mg/kg	289	mg/kg
CHROMIUM	7.2	mg/kg	5.1	mg/kg	5.5	mg/kg	4.9	mg/kg	7	mg/kg
COBALT	1 U	mg/kg	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	0.43 U	mg/kg
COPPER	4.1	mg/kg	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	2.7	mg/kg
IRON	4220	mg/kg	1240	mg/kg	129	mg/kg	130	mg/kg	3800	mg/kg
LEAD	3.7 J	mg/kg	3.1 J	mg/kg	1.3 J	mg/kg	1	mg/kg	7.3	mg/kg
MAGNESIUM	173	mg/kg	15.4 U	mg/kg	19 U	mg/kg	13.2 U	mg/kg	79.9	mg/kg
MANGANESE	108	mg/kg	3.9	mg/kg	2.6	mg/kg	1 U	mg/kg	27.1	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03	mg/kg
NICKEL	2.3	mg/kg	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	1.2	mg/kg
POTASSIUM	133	mg/kg	44.3	mg/kg	47.6	mg/kg	25 U	mg/kg	62.4	mg/kg
SELENIUM	1 UJ	mg/kg	1.1 UJ	mg/kg	1 UJ	mg/kg	1 U	mg/kg	0.43 U	mg/kg
SILVER	0.63 U	mg/kg	0.67 U	mg/kg	0.61 U	mg/kg	0.62 U	mg/kg	0.26 U	mg/kg
SODIUM	105 U	mg/kg	111 U	mg/kg	102 U	mg/kg	103 U	mg/kg	43 U	mg/kg
THALLIUM	2.1 U	mg/kg	2.2 U	mg/kg	2 U	mg/kg	2.1 U	mg/kg	0.86 U	mg/kg
VANADIUM	11.5	mg/kg	4.9	mg/kg	1.4	mg/kg	1.3	mg/kg	11.1	mg/kg
ZINC	6.2	mg/kg	2.2 U	mg/kg	2 U	mg/kg	2.1 U	mg/kg	5.8	mg/kg

Blank spac- -icates chemical not analyzed.
A or D in -le number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00402		W04SB00403		W04SB00501		W04SB00502		W04SB00601	
LAB ID NUMBER	9803161 - 07		9803161 - 08		9803161 - 02		9803161 - 03		9802142 - 05	
SITE	4		4		4		4		4	
DATE SAMPLED	3/24/98		3/24/98		3/24/98		3/24/98		2/19/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
1,1,2-TRICHLOROETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
1,1-DICHLOROETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
1,1-DICHLOROETHENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
1,2-DICHLOROETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
1,2-DICHLOROPROPANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
2-BUTANONE	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg
2-HEXANONE	5 UJ	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg	6 U	µg/kg
4-METHYL-2-PENTANONE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
ACETONE	410	µg/kg	18 J	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg	23 J	µg/kg
BENZENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
BROMODICHLOROMETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
BROMOFORM	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
BROMOMETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
CARBON DISULFIDE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
CARBON TETRACHLORIDE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
CHLOROBENZENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
CHLOROETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
CHLOROFORM	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
CHLOROMETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
CIS-1,3-DICHLOROPROPENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
DIBROMOCHLOROMETHANE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
ETHYLBENZENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
METHYL TERT-BUTYL ETHER	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
METHYLENE CHLORIDE	7 U	µg/kg	6 U	µg/kg	8 U	µg/kg	5 U	µg/kg	23 U	µg/kg
STYRENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
TETRACHLOROETHENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
TOLUENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
TRICHLOROETHENE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
VINYL CHLORIDE	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg
XYLENES, TOTAL	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	2 J	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-CHLOROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-NITROANILINE	360 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg	350 UJ	µg/kg	370 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg	350 UJ	µg/kg	370 U	µg/kg
3-NITROANILINE	360 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg	350 UJ	µg/kg	370 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00402		W04SB00403		W04SB00501		W04SB00502		W04SB00601	
LAB ID NUMBER	9803161 - 07		9803161 - 08		9803161 - 02		9803161 - 03		9802142 - 06	
SITE	4		4		4		4		4	
DATE SAMPLED	3/24/98		3/24/98		3/24/98		3/24/98		2/19/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	360 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg	350 UJ	µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
4-NITROANILINE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
4-NITROPHENOL	360 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg	350 UJ	µg/kg	370 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
ANTHRACENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	84 J	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	80 J	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	75 J	µg/kg	39 J	µg/kg	94 J	µg/kg	65 J	µg/kg	170 J	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
CARBAZOLE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
CHRYSENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	93 J	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	31 J	µg/kg
DIBENZOFURAN	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
FLUORANTHENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	80 J	µg/kg
FLUORENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
ISOPHORONE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 UJ	µg/kg	22 UJ	µg/kg	23 UJ	µg/kg	21 UJ	µg/kg	10 J	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
NAPHTHALENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
NITROBENZENE	360 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg	350 UJ	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PHENANTHRENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PYRENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	350 U	µg/kg	73 J	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.6 U	µg/kg	3.7 U	µg/kg	3.9 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
4,4'-DDE	3.6 U	µg/kg	3.7 U	µg/kg	3.9 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
4,4'-DDT	3.6 U	µg/kg	3.7 U	µg/kg	3.9 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ALDRIN	1.8 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
AROCLOR-1016	36 U	µg/kg	37 U	µg/kg	39 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1221	72 U	µg/kg	74 U	µg/kg	78 U	µg/kg	71 U	µg/kg	74 U	µg/kg
AROCLOR-1232	36 U	µg/kg	37 U	µg/kg	39 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1242	36 U	µg/kg	37 U	µg/kg	39 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1248	36 U	µg/kg	37 U	µg/kg	39 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1254	36 U	µg/kg	37 U	µg/kg	39 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1260	36 U	µg/kg	37 U	µg/kg	39 U	µg/kg	36 U	µg/kg	37 U	µg/kg
BETA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DELTA-BHC	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 U	µg/kg

Blank spa ''cates chemical not analyzed.
A or D in ole number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00402		W04SB00403		W04SB00601		W04SB00502		W04SB00901	
LAB ID NUMBER	9803161 - 07		9803161 - 08		9803161 - 02		9803161 - 03		9802142 - 06	
SITE	4		4		4		4		4	
DATE SAMPLED	3/24/98		3/24/98		3/24/98		3/24/98		2/19/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	3.6 U	µg/kg	3.7 U	µg/kg	3.9 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDOSULFAN I	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	3.6 U	µg/kg	3.7 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDOSULFAN SULFATE	3.6 U	µg/kg	3.7 U	µg/kg	3.9 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN	3.6 U	µg/kg	3.7 U	µg/kg	3.9 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN ALDEHYDE	3.6 U	µg/kg	3.7 U	µg/kg	3.9 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN KETONE	3.6 U	µg/kg	3.7 U	µg/kg	3.9 UJ	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
GAMMA-BHC (LINDANE)	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR	1.8 U	µg/kg	1.8 U	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	18 U	µg/kg	18 U	µg/kg	19 UJ	µg/kg	18 U	µg/kg	19 U	µg/kg
TOXAPHENE	180 U	µg/kg	180 U	µg/kg	190 U	µg/kg	180 U	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg	11.2	mg/kg
TPH (C8-C40)	9.5 U	mg/kg	9.2 U	mg/kg	9.8 U	mg/kg	8.8 U	mg/kg		mg/kg
METALS										
ALUMINUM	822	mg/kg	471	mg/kg	7680	mg/kg	701	mg/kg	27400	mg/kg
ANTIMONY	0.37 UJ	mg/kg	0.33 UJ	mg/kg	0.55 UJ	mg/kg	0.31 UJ	mg/kg	1.1 UJ	mg/kg
ARSENIC	0.75 U	mg/kg	0.67 U	mg/kg	1.4	mg/kg	0.62 U	mg/kg	5.5	mg/kg
BARIUM	0.81 J	mg/kg	0.67 U	mg/kg	14.3 J	mg/kg	0.84 J	mg/kg	12.7	mg/kg
BERYLLIUM	0.22 U	mg/kg	0.2 U	mg/kg	0.33 U	mg/kg	0.19 U	mg/kg	0.67 U	mg/kg
CADMIUM	0.22 U	mg/kg	0.2 U	mg/kg	0.33 U	mg/kg	0.19	mg/kg	0.67 U	mg/kg
CALCIUM	74.6 U	mg/kg	66.9 U	mg/kg	38000	mg/kg	153	mg/kg	223 U	mg/kg
CHROMIUM	3.7	mg/kg	2.4	mg/kg	7.6	mg/kg	10.4	mg/kg	21.6	mg/kg
COBALT	0.37 U	mg/kg	0.33 U	mg/kg	0.57	mg/kg	0.31 U	mg/kg	1.1 U	mg/kg
COPPER	0.37 U	mg/kg	0.33 U	mg/kg	3.8	mg/kg	1.6	mg/kg	8.1	mg/kg
IRON	148	mg/kg	57.3	mg/kg	4660	mg/kg	284	mg/kg	14800	mg/kg
LEAD	0.62	mg/kg	0.51	mg/kg	7.5	mg/kg	1.4	mg/kg	19.2 J	mg/kg
MAGNESIUM	5.2 U	mg/kg	3.9 U	mg/kg	827	mg/kg	12.4 U	mg/kg	184	mg/kg
MANGANESE	1.3	mg/kg	0.67	mg/kg	122	mg/kg	2.2	mg/kg	30.8	mg/kg
MERCURY	0.04 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	0.37 U	mg/kg	0.33 U	mg/kg	1.4 J	mg/kg	1.8	mg/kg	3	mg/kg
POTASSIUM	18.3	mg/kg	14.4	mg/kg	84.4 UR	mg/kg	14.2	mg/kg	159	mg/kg
SELENIUM	0.37 U	mg/kg	0.33 U	mg/kg	0.55 U	mg/kg	0.31 U	mg/kg	1.1 UJ	mg/kg
SILVER	0.22 U	mg/kg	0.2 U	mg/kg	0.33 U	mg/kg	0.19 U	mg/kg	0.67 U	mg/kg
SODIUM	37.3 U	mg/kg	33.4 U	mg/kg	54.9 U	mg/kg	31 U	mg/kg	111 U	mg/kg
THALLIUM	0.75 U	mg/kg	0.67 U	mg/kg	1.1 U	mg/kg	0.62 U	mg/kg	2.2 U	mg/kg
VANADIUM	2.1	mg/kg	1.4	mg/kg	14.2	mg/kg	0.87	mg/kg	41.4	mg/kg
ZINC	0.75 U	mg/kg	0.67 U	mg/kg	6.8 J	mg/kg	1.5	mg/kg	7.5	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00602		W04SB00603		W04SB00604		W04SB00701		W04SB00702	
LAB ID NUMBER	9802142 - 02		9802142 - 04		9802142 - 05		9803070 - 02		9803070 - 03	
SITE	4		4		4		4		4	
DATE SAMPLED	2/18/98		2/19/98		2/19/98		3/11/98		3/11/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
1,1,2-TRICHLOROETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
1,1-DICHLOROETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
1,1-DICHLOROETHENE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
1,2-DICHLOROETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
1,2-DICHLOROPROPANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
2-BUTANONE	30 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg	29 UR	µg/kg
2-HEXANONE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 UJ	µg/kg	29 UJ	µg/kg
4-METHYL-2-PENTANONE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 UJ	µg/kg	29 UJ	µg/kg
ACETONE	30 U	µg/kg	17 J	µg/kg	5 UJ	µg/kg	6 U	µg/kg	210 J	µg/kg
BENZENE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
BROMODICHLOROMETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
BROMOFORM	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
BROMOMETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
CARBON DISULFIDE	30 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
CARBON TETRACHLORIDE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
CHLOROBENZENE		µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
CHLOROETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
CHLOROFORM	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
CHLOROMETHANE	17 J	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
CIS-1,3-DICHLOROPROPENE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
DIBROMOCHLOROMETHANE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
ETHYLBENZENE	13000 J	µg/kg	5 U	µg/kg	2 J	µg/kg	6 U	µg/kg	2100	µg/kg
METHYL TERT-BUTYL ETHER	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
METHYLENE CHLORIDE	30 U	µg/kg	52 U	µg/kg	43 U	µg/kg	6 U	µg/kg	29 U	µg/kg
STYRENE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
TETRACHLOROETHENE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
TOLUENE	20000 J	µg/kg	5 U	µg/kg	1 J	µg/kg	6 U	µg/kg	29 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
TRICHLOROETHENE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
VINYL CHLORIDE	30 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	29 U	µg/kg
XYLENES, TOTAL	46000 J	µg/kg	4 J	µg/kg	8	µg/kg	6 U	µg/kg	1200	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
1,2-DICHLOROBENZENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
1,3-DICHLOROBENZENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
1,4-DICHLOROBENZENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg
2,4,5-TRICHLOROPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,4,6-TRICHLOROPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,4-DICHLOROPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,4-DIMETHYLPHENOL	42 J	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,4-DINITROPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,4-DINITROTOLUENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,6-DINITROTOLUENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-CHLORONAPHTHALENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-CHLOROPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-METHYLNAPHTHALENE	40 J	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	46 J	µg/kg
2-METHYLPHENOL	310 J	µg/kg	47 J	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-NITROANILINE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-NITROPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
3,3'-DICHLOROBENZIDINE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
3-NITROANILINE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg

Blank spac' ' 'icates chemical not analyzed.
A or D in ple number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00602		W04SB00603		W04SB00604		W04SB00701		W04SB00702	
LAB ID NUMBER	9802142 - 02		9802142 - 04		9802142 - 05		9803070 - 02		9803070 - 03	
SITE	4		4		4		4		4	
DATE SAMPLED	2/19/98		2/19/98		2/19/98		3/11/98		3/11/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-CHLOROANILINE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-METHYLPHENOL	500	µg/kg	72 J	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-NITROANILINE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-NITROPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
ACENAPHTHENE	83 J	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
ACENAPHTHYLENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
ANTHRACENE	61 J	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(A)ANTHRACENE	76 J	µg/kg	360 U	µg/kg	43 J	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(A)PYRENE	56 J	µg/kg	10 J	µg/kg	110 U	µg/kg	22 J	µg/kg	120 U	µg/kg
BENZO(B)FLUORANTHENE	46 J	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(G,H,I)PERYLENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(K)FLUORANTHENE	52 J	µg/kg	360 U	µg/kg	37 J	µg/kg	370 U	µg/kg	390 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	400 U	µg/kg	100 J	µg/kg	160 J	µg/kg	45 J	µg/kg	390 U	µg/kg
BUTYLBENZYL PHTHALATE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
CARBAZOLE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
CHRYSENE	69 J	µg/kg	360 U	µg/kg	61 J	µg/kg	370 U	µg/kg	390 U	µg/kg
DI-N-BUTYL PHTHALATE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DI-N-OCTYL PHTHALATE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DIBENZO(A,H)ANTHRACENE	15 J	µg/kg	5 J	µg/kg	110 U	µg/kg	7 J	µg/kg	120 U	µg/kg
DIBENZOFURAN	51 J	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DIETHYL PHTHALATE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DIMETHYL PHTHALATE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
FLUORANTHENE	240 J	µg/kg	80 J	µg/kg	150 J	µg/kg	62 J	µg/kg	390 U	µg/kg
FLUORENE	79 J	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
HEXACHLOROBENZENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
HEXACHLOROBUTADIENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
HEXACHLOROETHANE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
INDENO(1,2,3-CD)PYRENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
ISOPHORONE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	15 J	µg/kg	22 U	µg/kg	21 U	µg/kg	22 U	µg/kg	41	µg/kg
N-NITROSODIPHENYLAMINE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
NAPHTHALENE	50 J	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
NITROBENZENE	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
PENTACHLOROPHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
PHENANTHRENE	270 J	µg/kg	62 J	µg/kg	100 J	µg/kg	370 U	µg/kg	390 U	µg/kg
PHENOL	400 U	µg/kg	360 U	µg/kg	350 U	µg/kg	370 U	µg/kg	390 U	µg/kg
PYRENE	210 J	µg/kg	88 J	µg/kg	140 J	µg/kg	59 J	µg/kg	390 U	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.7 U	µg/kg	3.9 U	µg/kg
4,4'-DDE	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	1.9 J	µg/kg	3.9 U	µg/kg
4,4'-DDT	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 J	µg/kg	3.9 U	µg/kg
ALDRIN	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-BHC	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
AROCLOR-1016	40 U	µg/kg	36 U	µg/kg	35 U	µg/kg	37 U	µg/kg	39 U	µg/kg
AROCLOR-1221	79 U	µg/kg	72 U	µg/kg	71 U	µg/kg	73 U	µg/kg	77 U	µg/kg
AROCLOR-1232	40 U	µg/kg	36 U	µg/kg	35 U	µg/kg	37 U	µg/kg	39 U	µg/kg
AROCLOR-1242	40 U	µg/kg	36 U	µg/kg	35 U	µg/kg	37 U	µg/kg	39 U	µg/kg
AROCLOR-1248	40 U	µg/kg	36 U	µg/kg	35 U	µg/kg	37 U	µg/kg	39 U	µg/kg
AROCLOR-1254	40 U	µg/kg	36 U	µg/kg	35 U	µg/kg	37 U	µg/kg	39 U	µg/kg
AROCLOR-1260	40 U	µg/kg	36 U	µg/kg	35 U	µg/kg	37 U	µg/kg	39 U	µg/kg
BETA-BHC	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DELTA-BHC	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00602		W04SB00603		W04SB00604		W04SB00701		W04SB00702	
LAB ID NUMBER	9802142 - 02		9802142 - 04		9802142 - 05		9803070 - 02		9803070 - 03	
SITE	4		4		4		4		4	
DATE SAMPLED	2/18/98		2/19/98		2/19/98		3/11/98		3/11/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	0.38 J	µg/kg	3.9 U	µg/kg
ENDOSULFAN I	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.7 U	µg/kg	3.9 U	µg/kg
ENDOSULFAN SULFATE	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.7 U	µg/kg	3.9 U	µg/kg
ENDRIN	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.7 U	µg/kg	3.9 U	µg/kg
ENDRIN ALDEHYDE	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.7 U	µg/kg	3.9 U	µg/kg
ENDRIN KETONE	4 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.7 U	µg/kg	3.9 U	µg/kg
GAMMA-BHC (LINDANE)	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	20 U	µg/kg	18 U	µg/kg	18 U	µg/kg	18 U	µg/kg	19 U	µg/kg
TOXAPHENE	200 U	µg/kg	180 U	µg/kg	180 U	µg/kg	180 U	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS	21.1	mg/kg	15.7 J	mg/kg	9.16	mg/kg		mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg	166	mg/kg	80.1	mg/kg
METALS										
ALUMINUM	8090	mg/kg	788	mg/kg	689	mg/kg	12500	mg/kg	29600	mg/kg
ANTIMONY	1.2 UJ	mg/kg	1.1 UJ	mg/kg	1 UJ	mg/kg	1.1 UJ	mg/kg	1.2 UJ	mg/kg
ARSENIC	2.4 U	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	2.5	mg/kg	6.4	mg/kg
BARIUM	13	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	16.1	mg/kg	6.9	mg/kg
BERYLLIUM	0.72 U	mg/kg	0.64 U	mg/kg	0.62 U	mg/kg	0.65 U	mg/kg	0.69 U	mg/kg
CADMIUM	0.72 U	mg/kg	0.64 U	mg/kg	0.62 U	mg/kg	0.65 U	mg/kg	0.69 U	mg/kg
CALCIUM	239 U	mg/kg	212 U	mg/kg	206 U	mg/kg	269	mg/kg	229 U	mg/kg
CHROMIUM	7.6	mg/kg	3.9	mg/kg	2.3	mg/kg	9.6 J	mg/kg	34.4 J	mg/kg
COBALT	1.2 U	mg/kg	1.1 U	mg/kg	1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
COPPER	2.1	mg/kg	1.1 U	mg/kg	1 U	mg/kg	5.6 J	mg/kg	7.3 J	mg/kg
IRON	4010	mg/kg	301	mg/kg	166	mg/kg	5730	mg/kg	17800	mg/kg
LEAD	7.9 J	mg/kg	2.1 J	mg/kg	1.2 J	mg/kg	18.7 J	mg/kg	14.7 J	mg/kg
MAGNESIUM	73.3	mg/kg	14.5 U	mg/kg	14.6 U	mg/kg	239	mg/kg	99.4	mg/kg
MANGANESE	14.8	mg/kg	5.6	mg/kg	4.1	mg/kg	161	mg/kg	19.1	mg/kg
MERCURY	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg
NICKEL	1.2 U	mg/kg	1.1 U	mg/kg	1 U	mg/kg	3.3	mg/kg	2.6	mg/kg
POTASSIUM	327	mg/kg	34.9 U	mg/kg	29 U	mg/kg	147	mg/kg	138	mg/kg
SELENIUM	1.2 UJ	mg/kg	1.1 UJ	mg/kg	1 UJ	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
SILVER	0.72 U	mg/kg	0.64 U	mg/kg	0.62 U	mg/kg	0.65 U	mg/kg	0.69 U	mg/kg
SODIUM	119 U	mg/kg	106 U	mg/kg	103 U	mg/kg	108 U	mg/kg	115 U	mg/kg
THALLIUM	2.4 U	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	2.2 U	mg/kg	2.3 U	mg/kg
VANADIUM	14.7	mg/kg	1.4	mg/kg	1 U	mg/kg	17.5	mg/kg	52.6	mg/kg
ZINC	2.4 U	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	16.9	mg/kg	5.1	mg/kg

Blank spr ʻicates chemical not analyzed.
A or D i: ːple number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00801		W04SB00802		W04SB00803		W04SB00901		W04SB00902	
LAB ID NUMBER	9802153 - 02		9802153 - 03		9802153 - 04		9802153 - 08		9802153 - 09	
SITE	4		4		4		4		4	
DATE SAMPLED	2/23/98		2/23/98		2/23/98		2/24/98		2/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
1,1,2-TRICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
1,1-DICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
1,1-DICHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
1,2-DICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
1,2-DICHLOROPROPANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
2-BUTANONE	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	28 UR	µg/kg
2-HEXANONE	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
4-METHYL-2-PENTANONE	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
ACETONE	85 J	µg/kg	5 U	µg/kg	220 J	µg/kg	6 J	µg/kg	860 J	µg/kg
BENZENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
BROMODICHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
BROMOFORM	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
BROMOMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
CARBON DISULFIDE	1 J	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
CARBON TETRACHLORIDE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
CHLOROBENZENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
CHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
CHLOROFORM	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
CHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
CIS-1,3-DICHLOROPROPENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
DIBROMOCHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
ETHYLBENZENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	560	µg/kg
METHYL TERT-BUTYL ETHER	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
METHYLENE CHLORIDE	21 U	µg/kg	28 U	µg/kg	30 U	µg/kg	43 U	µg/kg	230 U	µg/kg
STYRENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
TETRACHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
TOLUENE	1 J	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
TRICHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
VINYL CHLORIDE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	28 U	µg/kg
XYLENES, TOTAL	2 J	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	450	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2,4,5-TRICHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2,4-DINITROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2-CHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2-NITROANILINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
3-NITROANILINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00801		W04SB00802		W04SB00803		W04SB00901		W04SB00902	
LAB ID NUMBER	9802153 - 02		9802153 - 03		9802153 - 04		9802153 - 08		9802153 - 09	
SITE	4		4		4		4		4	
DATE SAMPLED	2/23/98		2/23/98		2/23/98		2/24/98		2/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
4-CHLOROANILINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
4-NITROANILINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
4-NITROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
ANTHRACENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	39 J	µg/kg	81 J	µg/kg	110 J	µg/kg	54 J	µg/kg	380 U	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
CARBAZOLE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
CHRYSENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	130 J	µg/kg	350 U	µg/kg	380 U	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
FLUORANTHENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
FLUORENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 UJ	µg/kg	380 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
ISOPHORONE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	µg/kg	22 U	µg/kg	22 U	µg/kg	22 U	µg/kg	23 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
NAPHTHALENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
NITROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
PENTACHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
PHENANTHRENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
PHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
PYRENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	350 U	µg/kg	380 U	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
4,4'-DDE	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
4,4'-DDT	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ALDRIN	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-BHC	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
AROCLOR-1016	36 UJ	µg/kg	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1221	72 UJ	µg/kg	72 U	µg/kg	72 U	µg/kg	73 U	µg/kg	76 U	µg/kg
AROCLOR-1232	36 UJ	µg/kg	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1242	36 UJ	µg/kg	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1248	36 UJ	µg/kg	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1254	36 UJ	µg/kg	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1260	36 UJ	µg/kg	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg
BETA-BHC	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DELTA-BHC	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg

Blank spac- -licates chemical not analyzed.
A or D in ple number indicates a duplicate.

CTO 0028

Rev. 1
5/4/99

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00801		W04SB00802		W04SB00803		W04SB00901		W04SB00902	
LAB ID NUMBER	9802153 - 02		9802153 - 03		9802153 - 04		9802153 - 08		9802153 - 09	
SITE	4		4		4		4		4	
DATE SAMPLED	2/23/98		2/23/98		2/23/98		2/24/98		2/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg
ENDOSULFAN I	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDOSULFAN SULFATE	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDRIN	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDRIN ALDEHYDE	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDRIN KETONE	3.6 UJ	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
GAMMA-BHC (LINDANE)	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	1.8 UJ	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	18 UJ	µg/kg	18 U	µg/kg	18 U	µg/kg	18 U	µg/kg	19 U	µg/kg
TOXAPHENE	180 UJ	µg/kg	180 U	µg/kg	180 U	µg/kg	180 U	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS	7.21 J	mg/kg	9 U	mg/kg	9 U	mg/kg	9.1 U	mg/kg	8.84 J	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS										
ALUMINUM	7580	mg/kg	2120	mg/kg	2010	mg/kg	27800	mg/kg	27700	mg/kg
ANTIMONY	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg
ARSENIC	2.1 U	mg/kg	2.2 U	mg/kg	2.2 U	mg/kg	5	mg/kg	6.4	mg/kg
BARIUM	15.5	mg/kg	2.2 U	mg/kg	2.2 U	mg/kg	7.2	mg/kg	6.2	mg/kg
BERYLLIUM	0.64 U	mg/kg	0.65 U	mg/kg	0.65 U	mg/kg	0.65 U	mg/kg	0.68 U	mg/kg
CADMIUM	0.64 U	mg/kg	0.65 U	mg/kg	0.65 U	mg/kg	0.65 U	mg/kg	0.68 U	mg/kg
CALCIUM	264	mg/kg	216 U	mg/kg	216 U	mg/kg	218 U	mg/kg	228 U	mg/kg
CHROMIUM	5.2	mg/kg	2.4	mg/kg	10.5	mg/kg	21.2	mg/kg	27.3	mg/kg
COBALT	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
COPPER	2.5	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	7.2	mg/kg	6.9	mg/kg
IRON	4240	mg/kg	183	mg/kg	238	mg/kg	14100	mg/kg	22400	mg/kg
LEAD	3.6 J	mg/kg	1 J	mg/kg	1.3 J	mg/kg	5.3 J	mg/kg	5.3 J	mg/kg
MAGNESIUM	234	mg/kg	23.6 U	mg/kg	20.7 U	mg/kg	122	mg/kg	71.6	mg/kg
MANGANESE	33.3	mg/kg	2.3	mg/kg	2.1	mg/kg	66.6	mg/kg	116	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	2	mg/kg	1.1 U	mg/kg	1.4	mg/kg	2.2	mg/kg	1.4	mg/kg
POTASSIUM	160	mg/kg	40.9	mg/kg	39	mg/kg	114	mg/kg	91.4	mg/kg
SELENIUM	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg
SILVER	0.64 U	mg/kg	0.65 U	mg/kg	0.65 U	mg/kg	0.65 U	mg/kg	0.68 U	mg/kg
SODIUM	107 U	mg/kg	108 U	mg/kg	108 U	mg/kg	109 U	mg/kg	114 U	mg/kg
THALLIUM	2.1 U	mg/kg	2.2 U	mg/kg	2.2 U	mg/kg	2.2 U	mg/kg	2.3 U	mg/kg
VANADIUM	11.2	mg/kg	2	mg/kg	2.2	mg/kg	38.9	mg/kg	47.7	mg/kg
ZINC	5.9	mg/kg	2.2 U	mg/kg	2.2 U	mg/kg	6.1	mg/kg	3.3	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00904		W04SB00905		W04SB01001		W04SB01003		W04SB01004	
LAB ID NUMBER	9802161 - 02		9802161 - 03		9802153 - 05		9802153 - 06		9802153 - 07	
SITE	4		4		4		4		4	
DATE SAMPLED	2/25/98		2/25/98		2/24/98		2/24/98		2/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1,2-TRICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROPROPANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
2-BUTANONE	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg
2-HEXANONE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
4-METHYL-2-PENTANONE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
ACETONE	48 U	µg/kg	10 U	µg/kg	980 J	µg/kg	28 J	µg/kg	53 J	µg/kg
BENZENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMODICHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMOFORM	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMOMETHANE	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CARBON DISULFIDE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CARBON TETRACHLORIDE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROBENZENE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROFORM	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CIS-1,3-DICHLOROPROPENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
DIBROMOCHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
ETHYLBENZENE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
METHYL TERT-BUTYL ETHER	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
METHYLENE CHLORIDE	64 U	µg/kg	5 U	µg/kg	50 U	µg/kg	37 U	µg/kg	37 U	µg/kg
STYRENE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
TETRACHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
TOLUENE	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TRICHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
VINYL CHLORIDE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
XYLENES, TOTAL	2 J	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4,5-TRICHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DINITROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-CHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-NITROANILINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
3-NITROANILINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg

Blank spac[illegible]dicates chemical not analyzed.
A or D in [illegible]ple number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00904		W04SB00905		W04SB01001		W04SB01003		W04SB01004	
LAB ID NUMBER	9802161 - 02		9802161 - 03		9802153 - 05		9802153 - 06		9802153 - 07	
SITE	4		4		4		4		4	
DATE SAMPLED	2/26/98		2/25/98		2/24/98		2/24/98		2/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROANILINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-NITROANILINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-NITROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ANTHRACENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	270 J	µg/kg	330 J	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
CARBAZOLE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
CHRYSENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	48 J	µg/kg	240 J	µg/kg	360 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
FLUORANTHENE	360 U	µg/kg	43 J	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
FLUORENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 UJ	µg/kg	360 UJ	µg/kg	360 UJ	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ISOPHORONE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	µg/kg	22 U	µg/kg	22 U	µg/kg	23 U	µg/kg	22 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
NAPHTHALENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
NITROBENZENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PENTACHLOROPHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PHENANTHRENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PHENOL	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PYRENE	360 U	µg/kg	360 U	µg/kg	360 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
4,4'-DDE	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
4,4'-DDT	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ALDRIN	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-CHLORDANE	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
AROCLOR-1016	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1221	73 U	µg/kg	72 U	µg/kg	71 U	µg/kg	75 U	µg/kg	72 U	µg/kg
AROCLOR-1232	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1242	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1248	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1254	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1260	36 U	µg/kg	36 U	µg/kg	36 U	µg/kg	38 U	µg/kg	36 U	µg/kg
BETA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB00904		W04SB00905		W04SB01001		W04SB01003		W04SB01004	
LAB ID NUMBER	9802161 - 02		9802161 - 03		9802153 - 05		9802153 - 06		9802153 - 07	
SITE	4		4		4		4		4	
DATE SAMPLED	2/25/98		2/25/98		2/24/98		2/24/98		2/24/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	3.6 U	µg/kg	3.6 U	µg/kg	59	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN I	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ENDOSULFAN II	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN SULFATE	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDRIN	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDRIN ALDEHYDE	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDRIN KETONE	3.6 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
GAMMA-BHC (LINDANE)	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
GAMMA-CHLORDANE	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR EPOXIDE	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
METHOXYCHLOR	18 U	µg/kg	18 U	µg/kg	18 U	µg/kg	19 U	µg/kg	18 U	µg/kg
TOXAPHENE	180 U	µg/kg	180 U	µg/kg	180 U	µg/kg	190 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS	9.85	mg/kg	15.1	mg/kg	7.79 J	mg/kg	9.5 U	mg/kg	8.9 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS										
ALUMINUM	1840	mg/kg	878	mg/kg	13600	mg/kg	3210	mg/kg	1640	mg/kg
ANTIMONY	1.1 U	mg/kg	1.1 U	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg
ARSENIC	2.2 U	mg/kg	2.2 U	mg/kg	2.6	mg/kg	2.2 U	mg/kg	2.1 U	mg/kg
BARIUM	2.2 U	mg/kg	2.2 U	mg/kg	12.3	mg/kg	3.9	mg/kg	2.1 U	mg/kg
BERYLLIUM	0.65 U	mg/kg	0.65 U	mg/kg	0.64 U	mg/kg	0.67 U	mg/kg	0.64 U	mg/kg
CADMIUM	0.65 U	mg/kg	0.65 U	mg/kg	0.64 U	mg/kg	0.67 U	mg/kg	0.64 U	mg/kg
CALCIUM	218 U	mg/kg	215 U	mg/kg	477	mg/kg	222 U	mg/kg	215 U	mg/kg
CHROMIUM	4.1	mg/kg	5.5	mg/kg	10.3	mg/kg	3.9	mg/kg	31	mg/kg
COBALT	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
COPPER	1.1 U	mg/kg	1.1 U	mg/kg	5.1	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
IRON	97.6	mg/kg	151	mg/kg	6580	mg/kg	292	mg/kg	419	mg/kg
LEAD	1	mg/kg	1.2	mg/kg	5.2 J	mg/kg	2.2 J	mg/kg	1.2 J	mg/kg
MAGNESIUM	23.1 U	mg/kg	20.6 U	mg/kg	163	mg/kg	60.9	mg/kg	18.1 U	mg/kg
MANGANESE	1.4	mg/kg	2	mg/kg	93.6	mg/kg	5.3	mg/kg	5.5	mg/kg
MERCURY	0.04 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg
NICKEL	1.1 U	mg/kg	1.1 U	mg/kg	2.3	mg/kg	1.1 U	mg/kg	2.5	mg/kg
POTASSIUM	32 U	mg/kg	34.6 U	mg/kg	142	mg/kg	93.1	mg/kg	38	mg/kg
SELENIUM	1.1 U	mg/kg	1.1 U	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg
SILVER	0.65 U	mg/kg	0.65 U	mg/kg	0.64 U	mg/kg	0.67 U	mg/kg	0.64 U	mg/kg
SODIUM	109 U	mg/kg	108 U	mg/kg	107 U	mg/kg	111 U	mg/kg	107 U	mg/kg
THALLIUM	2.2 U	mg/kg	2.2 U	mg/kg	2.1 U	mg/kg	2.2 U	mg/kg	2.1 U	mg/kg
VANADIUM	1.3	mg/kg	1.5	mg/kg	18.6	mg/kg	2.4	mg/kg	1.4	mg/kg
ZINC	4.2	mg/kg	2.2 U	mg/kg	6.8	mg/kg	2.2 U	mg/kg	7.2	mg/kg

Blank spa- -licates chemical not analyzed.
A or D ir ple number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB01101		W04SB01102		W04SB01103	
LAB ID NUMBER	9802145 - 03		9803164 - 12		9803164 - 13	
SITE	4		4		4	
DATE SAMPLED	3/25/98		3/25/98		3/25/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES						
1,1,1-TRICHLOROETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
1,1,2-TRICHLOROETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
1,1-DICHLOROETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
1,1-DICHLOROETHENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
1,2-DICHLOROETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
1,2-DICHLOROPROPANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
2-BUTANONE	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg
2-HEXANONE	5 UJ	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg
4-METHYL-2-PENTANONE	5 UJ	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg
ACETONE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
BENZENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
BROMODICHLOROMETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
BROMOFORM	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
BROMOMETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
CARBON DISULFIDE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
CARBON TETRACHLORIDE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
CHLOROBENZENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
CHLOROETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
CHLOROFORM	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
CHLOROMETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
CIS-1,3-DICHLOROPROPENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
DIBROMOCHLOROMETHANE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
ETHYLBENZENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
METHYL TERT-BUTYL ETHER	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
METHYLENE CHLORIDE	14 U	µg/kg	8 U	µg/kg	8 U	µg/kg
STYRENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
TETRACHLOROETHENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
TOLUENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
TRICHLOROETHENE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
VINYL CHLORIDE	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
XYLENES, TOTAL	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
1,2-DICHLOROBENZENE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
1,3-DICHLOROBENZENE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
1,4-DICHLOROBENZENE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 UJ	µg/kg	370 UJ	µg/kg	360 UJ	µg/kg
2,4,5-TRICHLOROPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4,6-TRICHLOROPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4-DICHLOROPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4-DIMETHYLPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4-DINITROPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4-DINITROTOLUENE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,6-DINITROTOLUENE	350 UJ	µg/kg	370 UJ	µg/kg	360 UJ	µg/kg
2-CHLORONAPHTHALENE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-CHLOROPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-METHYLNAPHTHALENE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-METHYLPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-NITROANILINE	350 UJ	µg/kg	370 UJ	µg/kg	360 UJ	µg/kg
2-NITROPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
3,3'-DICHLOROBENZIDINE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
3-NITROANILINE	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB01101		W04SB01102		W04SB01103	
LAB ID NUMBER	9802145 - 03		9803164 - 12		9803164 - 13	
SITE	4		4		4	
DATE SAMPLED	3/25/98		3/25/98		3/25/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
4-CHLORO-3-METHYLPHENOL	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
4-CHLOROANILINE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
4-METHYLPHENOL	350 U	μg/kg	370 UJ	μg/kg	360 U	μg/kg
4-NITROANILINE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
4-NITROPHENOL	350 UJ	μg/kg	370 UJ	μg/kg	360 UJ	μg/kg
ACENAPHTHENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
ACENAPHTHYLENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
ANTHRACENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
BENZO(A)ANTHRACENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
BENZO(A)PYRENE	100 U	μg/kg	110 U	μg/kg	110 U	μg/kg
BENZO(B)FLUORANTHENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
BENZO(G,H,I)PERYLENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
BENZO(K)FLUORANTHENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	350 UJ	μg/kg	370 UJ	μg/kg	360 UJ	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	250 J	μg/kg	370 U	μg/kg	360 U	μg/kg
BUTYLBENZYL PHTHALATE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
CARBAZOLE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
CHRYSENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
DI-N-BUTYL PHTHALATE	36 J	μg/kg	370 U	μg/kg	360 U	μg/kg
DI-N-OCTYL PHTHALATE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
DIBENZO(A,H)ANTHRACENE	100 U	μg/kg	110 U	μg/kg	110 U	μg/kg
DIBENZOFURAN	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
DIETHYL PHTHALATE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
DIMETHYL PHTHALATE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
FLUORANTHENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
FLUORENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
HEXACHLOROBENZENE	350 UJ	μg/kg	370 UJ	μg/kg	360 UJ	μg/kg
HEXACHLOROBUTADIENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
HEXACHLOROETHANE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
INDENO(1,2,3-CD)PYRENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
ISOPHORONE	350 UJ	μg/kg	370 U	μg/kg	360 UJ	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	21 U	μg/kg	22 U	μg/kg	22 U	μg/kg
N-NITROSODIPHENYLAMINE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
NAPHTHALENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
NITROBENZENE	350 UJ	μg/kg	370 UJ	μg/kg	360 UJ	μg/kg
PENTACHLOROPHENOL	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
PHENANTHRENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
PHENOL	350 U	μg/kg	370 UJ	μg/kg	360 U	μg/kg
PYRENE	350 U	μg/kg	370 U	μg/kg	360 U	μg/kg
PESTICIDES/PCBs						
4,4'-DDD	14 U	μg/kg	3.7 UJ	μg/kg	3.6 UJ	μg/kg
4,4'-DDE	63	μg/kg	3.7 U	μg/kg	3.6 U	μg/kg
4,4'-DDT	36 J	μg/kg	3.7 U	μg/kg	3.6 U	μg/kg
ALDRIN	7 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg
ALPHA-BHC	7 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg
ALPHA-CHLORDANE	7 U	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg
AROCLOR-1016	140 U	μg/kg	37 U	μg/kg	36 U	μg/kg
AROCLOR-1221	280 U	μg/kg	73 U	μg/kg	72 U	μg/kg
AROCLOR-1232	140 U	μg/kg	37 U	μg/kg	36 U	μg/kg
AROCLOR-1242	140 U	μg/kg	37 U	μg/kg	36 U	μg/kg
AROCLOR-1248	140 U	μg/kg	37 U	μg/kg	36 U	μg/kg
AROCLOR-1254	140 U	μg/kg	37 U	μg/kg	36 U	μg/kg
AROCLOR-1260	140 U	μg/kg	37 U	μg/kg	36 U	μg/kg
BETA-BHC	7 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg
DELTA-BHC	7 U	μg/kg	1.8 U	μg/kg	1.8 U	μg/kg

Blank spa[illegible] indicates chemical not analyzed.
A or D i[illegible] [illegible]ple number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W04SB01101		W04SB01102		W04SB01103	
LAB ID NUMBER	9802145 - 03		9803184 - 12		9803184 - 13	
SITE	4		4		4	
DATE SAMPLED	3/26/98		3/25/98		3/25/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
DIELDRIN	85	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN I	7 U	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg
ENDOSULFAN II	14 U	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg
ENDOSULFAN SULFATE	14 U	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg
ENDRIN	14 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
ENDRIN ALDEHYDE	14 U	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg
ENDRIN KETONE	14 U	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg
GAMMA-BHC (LINDANE)	7 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
GAMMA-CHLORDANE	7 U	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR	7 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR EPOXIDE	7 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
METHOXYCHLOR	70 UJ	µg/kg	18 UJ	µg/kg	18 UJ	µg/kg
TOXAPHENE	700 U	µg/kg	180 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg
TPH (C8-C40)	16	mg/kg	9 U	mg/kg	10 U	mg/kg
METALS						
ALUMINUM	9420	mg/kg	2350	mg/kg	2230	mg/kg
ANTIMONY	0.52 UJ	mg/kg	0.54 UJ	mg/kg	0.54 UJ	mg/kg
ARSENIC	1.5	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
BARIUM	11.9	mg/kg	2.4	mg/kg	1.8	mg/kg
BERYLLIUM	0.31 U	mg/kg	0.32 U	mg/kg	0.32 U	mg/kg
CADMIUM	0.31 U	mg/kg	0.32 U	mg/kg	0.32 U	mg/kg
CALCIUM	140	mg/kg	108 U	mg/kg	108 U	mg/kg
CHROMIUM	7.2	mg/kg	1.8	mg/kg	3.5	mg/kg
COBALT	0.65	mg/kg	0.54 U	mg/kg	0.54 U	mg/kg
COPPER	3.4	mg/kg	0.54 U	mg/kg	0.55	mg/kg
IRON	4530	mg/kg	112	mg/kg	84	mg/kg
LEAD	10.2 J	mg/kg	1 J	mg/kg	1.2 J	mg/kg
MAGNESIUM	136	mg/kg	24.4 U	mg/kg	19.6 U	mg/kg
MANGANESE	107	mg/kg	1.4	mg/kg	0.54 U	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	1.3	mg/kg	0.54 U	mg/kg	0.54 U	mg/kg
POTASSIUM	86.8	mg/kg	39.6	mg/kg	25.4 U	mg/kg
SELENIUM	0.52 UJ	mg/kg	0.54 UJ	mg/kg	0.54 UJ	mg/kg
SILVER	0.31 U	mg/kg	0.32 U	mg/kg	0.32 U	mg/kg
SODIUM	51.6 U	mg/kg	53.9 U	mg/kg	54.1 U	mg/kg
THALLIUM	1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
VANADIUM	12.6	mg/kg	1.3	mg/kg	0.85	mg/kg
ZINC	8.7	mg/kg	2.7	mg/kg	2.2	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

SITE 6

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB1-15-17		6SB1-20-22		6SB1-5-7		6SB2-0-2		6SB2-15-17	
LAB ID NUMBER	34587002		34587003		34587001		34587004		34587005	
SITE	6		6		6		6		6	
DATE SAMPLED	12/4/92		12/4/92		12/4/92		12/4/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
2-BUTANONE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
2-HEXANONE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
ACETONE	12 UJ	µg/kg	32 UJ	µg/kg	12 U	µg/kg	11 U	µg/kg	16 UJ	µg/kg
BENZENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMOFORM	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMOMETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROFORM	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CIS-1,3-DICHLOROPROPENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
METHYLENE CHLORIDE	12 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg
STYRENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TOLUENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
VINYL CHLORIDE	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
1,2-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
1,3-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
1,4-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,4,5-TRICHLOROPHENOL	930 U	µg/kg	860 U	µg/kg	940 U	µg/kg	900 U	µg/kg	950 U	µg/kg
2,4,6-TRICHLOROPHENOL	380 UJ	µg/kg	350 UJ	µg/kg	390 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg
2,4-DICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,4-DIMETHYLPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,4-DINITROPHENOL	930 U	µg/kg	860 U	µg/kg	940 U	µg/kg	900 U	µg/kg	950 U	µg/kg
2,4-DINITROTOLUENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2,6-DINITROTOLUENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-CHLORONAPHTHALENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-CHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-METHYLNAPHTHALENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
2-NITROANILINE	930 U	µg/kg	860 U	µg/kg	940 U	µg/kg	900 U	µg/kg	950 U	µg/kg
2-NITROPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB1-15-17		6SB1-20-22		6SB1-5-7		6SB2-0-2		6SB2-15-17	
LAB ID NUMBER	34587002		34587003		34587001		34587004		34587005	
SITE	6		6		6		6		6	
DATE SAMPLED	12/4/92		12/4/92		12/4/92		12/4/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
3,3'-DICHLOROBENZIDINE	380 UJ	µg/kg	350 UJ	µg/kg	390 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg
3-NITROANILINE	930 UJ	µg/kg	860 UJ	µg/kg	940 UJ	µg/kg	900 UJ	µg/kg	950 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	930 U	µg/kg	860 U	µg/kg	940 U	µg/kg	900 U	µg/kg	950 U	µg/kg
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-CHLOROANILINE	380 UJ	µg/kg	350 UJ	µg/kg	390 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
4-NITROANILINE	930 UJ	µg/kg	860 UJ	µg/kg	940 UJ	µg/kg	900 UJ	µg/kg	950 UJ	µg/kg
4-NITROPHENOL	930 U	µg/kg	860 U	µg/kg	940 U	µg/kg	900 U	µg/kg	950 U	µg/kg
ACENAPHTHENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
ACENAPHTHYLENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
ANTHRACENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(A)ANTHRACENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(A)PYRENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(B)FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(G,H,I)PERYLENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BENZO(K)FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	µg/kg	350 U	µg/kg	54 J	µg/kg	370 U	µg/kg	390 U	µg/kg
BUTYLBENZYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
CARBAZOLE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
CHRYSENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DI-N-BUTYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DI-N-OCTYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DIBENZO(A,H)ANTHRACENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DIBENZOFURAN	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DIETHYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
DIMETHYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
FLUORENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
HEXACHLOROBENZENE	380 UJ	µg/kg	350 UJ	µg/kg	390 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg
HEXACHLOROBUTADIENE	380 UJ	µg/kg	350 UJ	µg/kg	390 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
HEXACHLOROETHANE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
INDENO(1,2,3-CD)PYRENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
ISOPHORONE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
N-NITROSODIPHENYLAMINE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
NAPHTHALENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
NITROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
PENTACHLOROPHENOL	930 U	µg/kg	860 U	µg/kg	940 U	µg/kg	900 U	µg/kg	950 U	µg/kg
PHENANTHRENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
PHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
PYRENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	390 U	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg
4,4'-DDE	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg
4,4'-DDT	3.8 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg
ALDRIN	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
ALPHA-BHC	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
ALPHA-CHLORDANE	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
AROCLOR-1016	38 UJ	µg/kg	35 UJ	µg/kg	39 UJ	µg/kg	37 UJ	µg/kg	39 UJ	µg/kg

Blank s: icates chemical not analyzed.
A or D i. .mple number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB1-15-17		6SB1-20-22		6SB1-5-7		6SB2-0-2		6SB2-15-17	
LAB ID NUMBER	34587002		34587003		34587001		34587004		34587005	
SITE	6		6		6		6		6	
DATE SAMPLED	12/4/92		12/4/92		12/4/92		12/4/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	78 UJ	μg/kg	72 UJ	μg/kg	79 UJ	μg/kg	75 UJ	μg/kg	80 UJ	μg/kg
AROCLOR-1232	38 UJ	μg/kg	35 UJ	μg/kg	39 UJ	μg/kg	37 UJ	μg/kg	39 UJ	μg/kg
AROCLOR-1242	38 UJ	μg/kg	35 UJ	μg/kg	39 UJ	μg/kg	37 UJ	μg/kg	39 UJ	μg/kg
AROCLOR-1248	38 UJ	μg/kg	35 UJ	μg/kg	39 UJ	μg/kg	37 UJ	μg/kg	39 UJ	μg/kg
AROCLOR-1254	38 UJ	μg/kg	35 UJ	μg/kg	39 UJ	μg/kg	37 UJ	μg/kg	39 UJ	μg/kg
AROCLOR-1260	38 UJ	μg/kg	35 UJ	μg/kg	39 UJ	μg/kg	37 UJ	μg/kg	39 UJ	μg/kg
BETA-BHC	2 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg
DELTA-BHC	2 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg
DIELDRIN	3.8 UJ	μg/kg	3.5 UJ	μg/kg	13 J	μg/kg	3.7 UJ	μg/kg	3.9 UJ	μg/kg
ENDOSULFAN I	2 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg
ENDOSULFAN II	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.9 UJ	μg/kg	3.7 UJ	μg/kg	3.9 UJ	μg/kg
ENDOSULFAN SULFATE	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.9 UJ	μg/kg	3.7 UJ	μg/kg	3.9 UJ	μg/kg
ENDRIN	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.9 UJ	μg/kg	3.7 UJ	μg/kg	3.9 UJ	μg/kg
ENDRIN ALDEHYDE	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.9 UJ	μg/kg	3.7 UJ	μg/kg	3.9 UJ	μg/kg
ENDRIN KETONE	3.8 UJ	μg/kg	3.5 UJ	μg/kg	3.9 UJ	μg/kg	3.7 UJ	μg/kg	3.9 UJ	μg/kg
GAMMA-BHC (LINDANE)	2 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg
GAMMA-CHLORDANE	2 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg
HEPTACHLOR	2 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg
HEPTACHLOR EPOXIDE	2 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg
METHOXYCHLOR	20 UJ	μg/kg	18 UJ	μg/kg	20 UJ	μg/kg	19 UJ	μg/kg	20 UJ	μg/kg
TOXAPHENE	200 UJ	μg/kg	180 UJ	μg/kg	200 UJ	μg/kg	190 UJ	μg/kg	200 UJ	μg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS										
ALUMINUM	9390	mg/kg	2120	mg/kg	14300	mg/kg	20200	mg/kg	39800	mg/kg
ANTIMONY	2.8 U	mg/kg	2.6 U	mg/kg	2.8 U	mg/kg	2.7 U	mg/kg	2.9 U	mg/kg
ARSENIC	1.3 J	mg/kg	0.15 J	mg/kg	1.6 J	mg/kg	2.1 J	mg/kg	0.31 J	mg/kg
BARIUM	3.8 J	mg/kg	0.66 J	mg/kg	12.8 J	mg/kg	19.4 J	mg/kg	10.1 J	mg/kg
BERYLLIUM	0.12 U	mg/kg	0.11 U	mg/kg	0.18 J	mg/kg	0.37 J	mg/kg	0.2 J	mg/kg
CADMIUM	0.68 J	mg/kg	0.33 J	mg/kg	0.62 J	mg/kg	0.75 J	mg/kg	0.59 J	mg/kg
CALCIUM	203 J	mg/kg	101 J	mg/kg	329 J	mg/kg	500 J	mg/kg	314 J	mg/kg
CHROMIUM	27.8	mg/kg	4.9	mg/kg	14.3	mg/kg	16.3	mg/kg	39.4	mg/kg
COBALT	1.3 U	mg/kg	1.2 U	mg/kg	1.4 U	mg/kg	1.9 J	mg/kg	1.4 U	mg/kg
COPPER	4.7 J	mg/kg	1.6 J	mg/kg	5.5 J	mg/kg	6.4	mg/kg	10.3	mg/kg
CYANIDE	0.17 U	mg/kg	0.16 U	mg/kg	0.18 U	mg/kg	0.17 U	mg/kg	0.18 U	mg/kg
IRON	18900	mg/kg	4480	mg/kg	12300	mg/kg	14800	mg/kg	17600	mg/kg
LEAD	3.4	mg/kg	0.71	mg/kg	21.1	mg/kg	14.7	mg/kg	6.9	mg/kg
MAGNESIUM	72.2 J	mg/kg	15.7 J	mg/kg	81.8 J	mg/kg	145 J	mg/kg	143 J	mg/kg
MANGANESE	14.6	mg/kg	2.3 J	mg/kg	73.7	mg/kg	180	mg/kg	13.9	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.04 J	mg/kg	0.03 U	mg/kg
NICKEL	1.8 U	mg/kg	1.7 U	mg/kg	2 J	mg/kg	2.1 J	mg/kg	2.8 J	mg/kg
POTASSIUM	44.2 U	mg/kg	41.1 U	mg/kg	94.2 J	mg/kg	130 J	mg/kg	141 J	mg/kg
SELENIUM	0.12 U	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg	0.11 U	mg/kg	0.27 J	mg/kg
SILVER	0.49 UJ	mg/kg	0.45 UJ	mg/kg	0.49 UJ	mg/kg	0.47 UJ	mg/kg	0.5 U	mg/kg
SODIUM	218 J	mg/kg	143 J	mg/kg	226 J	mg/kg	162 J	mg/kg	136 J	mg/kg
THALLIUM	0.16 J	mg/kg	0.17 J	mg/kg	0.35 J	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg
VANADIUM	53.1	mg/kg	12.9	mg/kg	31.9	mg/kg	38	mg/kg	56.8	mg/kg
ZINC	6.2 J	mg/kg	1.8 J	mg/kg	13.1	mg/kg	9.2	mg/kg	8.1	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB2-20-22		6SB3-0-2		6SB3-0-2A		6SB3-10-12		6SB3-117-119	
LAB ID NUMBER	34587006		34597001		34597002		34595002		34595008	
SITE	6		6		6		6		6	
DATE SAMPLED	12/4/92		12/5/92		12/5/92		12/5/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
1,1,2-TRICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
1,1-DICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
1,1-DICHLOROETHENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	2 J	μg/kg
1,2-DICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	2 J	μg/kg
1,2-DICHLOROPROPANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
2-BUTANONE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
2-HEXANONE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
4-METHYL-2-PENTANONE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
ACETONE	11 UJ	μg/kg	12 UJ	μg/kg	12 UJ	μg/kg	11 U	μg/kg	12 U	μg/kg
BENZENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
BROMODICHLOROMETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
BROMOFORM	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
BROMOMETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
CARBON DISULFIDE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
CARBON TETRACHLORIDE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
CHLOROBENZENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
CHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
CHLOROFORM	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
CHLOROMETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
CIS-1,3-DICHLOROPROPENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
DIBROMOCHLOROMETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
ETHYLBENZENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
METHYLENE CHLORIDE	11 UJ	μg/kg	12 UJ	μg/kg	12 UJ	μg/kg	11 UJ	μg/kg	12 UJ	μg/kg
STYRENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
TETRACHLOROETHENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
TOLUENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
TRICHLOROETHENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	73	μg/kg
VINYL CHLORIDE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
XYLENES, TOTAL	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg	11 U	μg/kg	12 U	μg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
1,2-DICHLOROBENZENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
1,3-DICHLOROBENZENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
1,4-DICHLOROBENZENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2,4,5-TRICHLOROPHENOL	850 U	μg/kg	940 UJ	μg/kg	940 UJ	μg/kg	910 U	μg/kg	1000 U	μg/kg
2,4,6-TRICHLOROPHENOL	350 UJ	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2,4-DICHLOROPHENOL	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2,4-DIMETHYLPHENOL	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2,4-DINITROPHENOL	850 U	μg/kg	940 U	μg/kg	940 U	μg/kg	910 U	μg/kg	1000 U	μg/kg
2,4-DINITROTOLUENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2,6-DINITROTOLUENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2-CHLORONAPHTHALENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2-CHLOROPHENOL	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2-METHYLNAPHTHALENE	350 U	μg/kg	390 U	μg/kg	48 J	μg/kg	370 U	μg/kg	410 U	μg/kg
2-METHYLPHENOL	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
2-NITROANILINE	850 U	μg/kg	940 U	μg/kg	940 U	μg/kg	910 U	μg/kg	1000 U	μg/kg
2-NITROPHENOL	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg

Blank s| 'cates chemical not analyzed.
A or D in .mple number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB2-20-22		6SB3-0-2		6SB3-0-2A		6SB3-10-12		6SB3-117-119	
LAB ID NUMBER	34587006		34597001		34597002		34595002		34595008	
SITE	6		6		6		6		6	
DATE SAMPLED	12/4/92		12/5/92		12/5/92		12/5/92		12/5/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
3,3'-DICHLOROBENZIDINE	350 UJ	μg/kg	390 U	μg/kg	390 U	μg/kg	370 UJ	μg/kg	410 UJ	μg/kg
3-NITROANILINE	850 UJ	μg/kg	940 U	μg/kg	940 U	μg/kg	910 UJ	μg/kg	1000 UJ	μg/kg
4,6-DINITRO-2-METHYLPHENOL	850 U	μg/kg	940 U	μg/kg	940 U	μg/kg	910 U	μg/kg	1000 U	μg/kg
4-CHLORO-3-METHYLPHENOL	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
4-CHLOROANILINE	350 UJ	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	μg/kg	390 UJ	μg/kg	390 UJ	μg/kg	370 U	μg/kg	410 U	μg/kg
4-METHYLPHENOL	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
4-NITROANILINE	850 UJ	μg/kg	940 U	μg/kg	940 U	μg/kg	910 U	μg/kg	1000 U	μg/kg
4-NITROPHENOL	850 U	μg/kg	940 U	μg/kg	940 U	μg/kg	910 U	μg/kg	1000 U	μg/kg
ACENAPHTHENE	350 U	μg/kg	120 J	μg/kg	190 J	μg/kg	370 U	μg/kg	410 U	μg/kg
ACENAPHTHYLENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
ANTHRACENE	350 U	μg/kg	140 J	μg/kg	160 J	μg/kg	370 U	μg/kg	410 U	μg/kg
BENZO(A)ANTHRACENE	350 U	μg/kg	1400	μg/kg	1900	μg/kg	370 U	μg/kg	410 U	μg/kg
BENZO(A)PYRENE	350 U	μg/kg	1600	μg/kg	1900	μg/kg	370 U	μg/kg	410 U	μg/kg
BENZO(B)FLUORANTHENE	350 U	μg/kg	2100	μg/kg	2000	μg/kg	38 J	μg/kg	410 U	μg/kg
BENZO(G,H,I)PERYLENE	350 U	μg/kg	1100	μg/kg	960	μg/kg	370 U	μg/kg	410 U	μg/kg
BENZO(K)FLUORANTHENE	350 U	μg/kg	1500	μg/kg	1700	μg/kg	39 J	μg/kg	410 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	350 U	μg/kg	390 UJ	μg/kg	390 UJ	μg/kg	370 U	μg/kg	410 U	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	μg/kg	1300	μg/kg	840	μg/kg	370 UJ	μg/kg	410 U	μg/kg
BUTYLBENZYL PHTHALATE	350 U	μg/kg	150 J	μg/kg	260 J	μg/kg	370 U	μg/kg	410 U	μg/kg
CARBAZOLE	350 U	μg/kg	260 J	μg/kg	300 J	μg/kg	370 UJ	μg/kg	410 UJ	μg/kg
CHRYSENE	350 U	μg/kg	1700	μg/kg	2100	μg/kg	370 U	μg/kg	410 U	μg/kg
DI-N-BUTYL PHTHALATE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
DI-N-OCTYL PHTHALATE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
DIBENZO(A,H)ANTHRACENE	350 U	μg/kg	53 J	μg/kg	200 J	μg/kg	370 U	μg/kg	410 U	μg/kg
DIBENZOFURAN	350 U	μg/kg	47 J	μg/kg	67 J	μg/kg	370 U	μg/kg	410 U	μg/kg
DIETHYL PHTHALATE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
DIMETHYL PHTHALATE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
FLUORANTHENE	350 U	μg/kg	2400	μg/kg	2600	μg/kg	38 J	μg/kg	410 U	μg/kg
FLUORENE	350 U	μg/kg	90 J	μg/kg	140 J	μg/kg	370 U	μg/kg	410 U	μg/kg
HEXACHLOROBENZENE	350 UJ	μg/kg	390 UJ	μg/kg	390 UJ	μg/kg	370 U	μg/kg	410 U	μg/kg
HEXACHLOROBUTADIENE	350 UJ	μg/kg	390 UJ	μg/kg	390 UJ	μg/kg	370 U	μg/kg	410 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
HEXACHLOROETHANE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
INDENO(1,2,3-CD)PYRENE	350 U	μg/kg	1600	μg/kg	1400	μg/kg	370 U	μg/kg	410 U	μg/kg
ISOPHORONE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
N-NITROSODIPHENYLAMINE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
NAPHTHALENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 UJ	μg/kg	410 UJ	μg/kg
NITROBENZENE	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
PENTACHLOROPHENOL	850 U	μg/kg	940 U	μg/kg	940 U	μg/kg	910 U	μg/kg	1000 U	μg/kg
PHENANTHRENE	350 U	μg/kg	1200	μg/kg	1500	μg/kg	370 U	μg/kg	410 U	μg/kg
PHENOL	350 U	μg/kg	390 U	μg/kg	390 U	μg/kg	370 U	μg/kg	410 U	μg/kg
PYRENE	350 U	μg/kg	2000	μg/kg	2100	μg/kg	41 J	μg/kg	410 U	μg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.5 UJ	μg/kg	39 U	μg/kg	39 U	μg/kg	3.7 UJ	μg/kg	4.2 UJ	μg/kg
4,4'-DDE	3.5 UJ	μg/kg	39 U	μg/kg	39 U	μg/kg	3.7 UJ	μg/kg	4.2 UJ	μg/kg
4,4'-DDT	3.5 UJ	μg/kg	39 U	μg/kg	39 U	μg/kg	3.7 UJ	μg/kg	4.2 UJ	μg/kg
ALDRIN	1.8 UJ	μg/kg	20 U	μg/kg	20 U	μg/kg	1.9 UJ	μg/kg	2.2 UJ	μg/kg
ALPHA-BHC	1.8 UJ	μg/kg	20 U	μg/kg	20 U	μg/kg	1.9 UJ	μg/kg	2.2 UJ	μg/kg
ALPHA-CHLORDANE	1.8 UJ	μg/kg	20 U	μg/kg	20 U	μg/kg	1.9 UJ	μg/kg	2.2 UJ	μg/kg
AROCLOR-1016	35 UJ	μg/kg	390 U	μg/kg	390 U	μg/kg	37 UJ	μg/kg	42 UJ	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB2-20-22		6SB3-0-2		6SB3-0-2A		6SB3-10-12		6SB3-112-119	
LAB ID NUMBER	34587006		34597001		34597002		34595002		34595008	
SITE	6		6		6		6		6	
DATE SAMPLED	12/4/92		12/5/92		12/5/92		12/5/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	71 UJ	µg/kg	790 U	µg/kg	790 U	µg/kg	76 UJ	µg/kg	85 UJ	µg/kg
AROCLOR-1232	35 UJ	µg/kg	390 U	µg/kg	390 U	µg/kg	37 UJ	µg/kg	42 UJ	µg/kg
AROCLOR-1242	35 UJ	µg/kg	390 U	µg/kg	390 U	µg/kg	37 UJ	µg/kg	42 UJ	µg/kg
AROCLOR-1248	35 UJ	µg/kg	390 U	µg/kg	390 U	µg/kg	37 UJ	µg/kg	42 UJ	µg/kg
AROCLOR-1254	35 UJ	µg/kg	390 U	µg/kg	390 U	µg/kg	37 UJ	µg/kg	42 UJ	µg/kg
AROCLOR-1260	35 UJ	µg/kg	390 U	µg/kg	390 U	µg/kg	37 UJ	µg/kg	42 UJ	µg/kg
BETA-BHC	1.8 UJ	µg/kg	20 U	µg/kg	20 U	µg/kg	1.9 UJ	µg/kg	2.2 UJ	µg/kg
DELTA-BHC	1.8 UJ	µg/kg	20 U	µg/kg	20 U	µg/kg	1.9 UJ	µg/kg	2.2 UJ	µg/kg
DIELDRIN	3.5 UJ	µg/kg	39 U	µg/kg	39 U	µg/kg	3.7 UJ	µg/kg	4.2 UJ	µg/kg
ENDOSULFAN I	1.8 UJ	µg/kg	20 U	µg/kg	20 U	µg/kg	1.9 UJ	µg/kg	2.2 UJ	µg/kg
ENDOSULFAN II	3.5 UJ	µg/kg	39 U	µg/kg	39 U	µg/kg	3.7 UJ	µg/kg	4.2 UJ	µg/kg
ENDOSULFAN SULFATE	3.5 UJ	µg/kg	39 U	µg/kg	39 U	µg/kg	3.7 UJ	µg/kg	4.2 UJ	µg/kg
ENDRIN	3.5 UJ	µg/kg	39 U	µg/kg	39 U	µg/kg	3.7 UJ	µg/kg	4.2 UJ	µg/kg
ENDRIN ALDEHYDE	3.5 UJ	µg/kg	39 U	µg/kg	39 U	µg/kg	3.7 UJ	µg/kg	4.2 UJ	µg/kg
ENDRIN KETONE	3.5 UJ	µg/kg	39 U	µg/kg	39 U	µg/kg	3.7 UJ	µg/kg	4.2 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.8 UJ	µg/kg	20 U	µg/kg	20 U	µg/kg	1.9 UJ	µg/kg	2.2 UJ	µg/kg
GAMMA-CHLORDANE	1.8 UJ	µg/kg	20 U	µg/kg	20 U	µg/kg	1.9 UJ	µg/kg	2.2 UJ	µg/kg
HEPTACHLOR	1.8 UJ	µg/kg	20 U	µg/kg	20 U	µg/kg	1.9 UJ	µg/kg	2.2 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.8 UJ	µg/kg	20 U	µg/kg	20 U	µg/kg	1.9 UJ	µg/kg	2.2 UJ	µg/kg
METHOXYCHLOR	18 UJ	µg/kg	200 U	µg/kg	200 U	µg/kg	19 UJ	µg/kg	22 UJ	µg/kg
TOXAPHENE	180 UJ	µg/kg	2000 U	µg/kg	2000 U	µg/kg	190 UJ	µg/kg	220 UJ	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS										
ALUMINUM	337	mg/kg	11800	mg/kg	8460	mg/kg	2250	mg/kg	1750	mg/kg
ANTIMONY	2.6 U	mg/kg	2.8 U	mg/kg	2.8 U	mg/kg	2.8 U	mg/kg	3 U	mg/kg
ARSENIC	0.15 U	mg/kg	3.5	mg/kg	2.2 J	mg/kg	1.5 J	mg/kg	1.3 J	mg/kg
BARIUM	0.41 J	mg/kg	14.4 J	mg/kg	13.8 J	mg/kg	2 J	mg/kg	4 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.25 J	mg/kg	0.19 J	mg/kg	0.11 U	mg/kg	0.13 U	mg/kg
CADMIUM	0.25 U	mg/kg	1.9	mg/kg	2	mg/kg	0.41 J	mg/kg	0.3 U	mg/kg
CALCIUM	93.1 J	mg/kg	592 J	mg/kg	664 J	mg/kg	248 J	mg/kg	341 J	mg/kg
CHROMIUM	1.1 J	mg/kg	65 J	mg/kg	51.6 J	mg/kg	11.5	mg/kg	6.2	mg/kg
COBALT	1.2 U	mg/kg	1.4 U	mg/kg	1.4 U	mg/kg	1.3 U	mg/kg	1.5 U	mg/kg
COPPER	0.44 J	mg/kg	9	mg/kg	35.7	mg/kg	1.8 J	mg/kg	3.3	mg/kg
CYANIDE	0.16 U	mg/kg	0.18 U	mg/kg	0.18 U	mg/kg	0.17 U	mg/kg	0.19 U	mg/kg
IRON	237	mg/kg	13300	mg/kg	10900	mg/kg	11400	mg/kg	2450	mg/kg
LEAD	0.59 J	mg/kg	252 J	mg/kg	202 J	mg/kg	8.2	mg/kg	4.1	mg/kg
MAGNESIUM	11 J	mg/kg	108 J	mg/kg	103 J	mg/kg	24.8 J	mg/kg	86 J	mg/kg
MANGANESE	0.77 J	mg/kg	50	mg/kg	42.7	mg/kg	14.2	mg/kg	1.4 J	mg/kg
MERCURY	0.03 U	mg/kg	0.03 J	mg/kg	0.03 J	mg/kg	0.03 U	mg/kg	0.13	mg/kg
NICKEL	1.6 U	mg/kg	2.1 J	mg/kg	3.1 J	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg
POTASSIUM	40.5 U	mg/kg	82.6 UJ	mg/kg	63.1 UJ	mg/kg	43.6 U	mg/kg	178 J	mg/kg
SELENIUM	0.11 U	mg/kg	0.12 UJ	mg/kg	0.12 UJ	mg/kg	0.16 J	mg/kg	0.13 U	mg/kg
SILVER	0.44 UJ	mg/kg	0.49 UJ	mg/kg	0.69 J	mg/kg	0.48 UJ	mg/kg	0.53 UJ	mg/kg
SODIUM	150 J	mg/kg	233 J	mg/kg	198 J	mg/kg	247 J	mg/kg	239 J	mg/kg
THALLIUM	0.17 J	mg/kg	0.21 UJ	mg/kg	0.23 UJ	mg/kg	0.25 J	mg/kg	0.18 U	mg/kg
VANADIUM	1 J	mg/kg	35.4	mg/kg	28.4	mg/kg	32.2	mg/kg	12.7	mg/kg
ZINC	1.7 J	mg/kg	58.2	mg/kg	64.3	mg/kg	4.5 J	mg/kg	2.9 J	mg/kg

Blank s icates chemical not analyzed.
A or D ir. ample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB3-15-17		6SB3-25-27		6SB3-5-7		6SB3-60-62		6SB4-0-2	
LAB ID NUMBER	34595003		34595004		34595001		34595005		34587007	
SITE	6		6		6		6		6	
DATE SAMPLED	12/6/92		12/5/92		12/5/92		12/5/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
2-BUTANONE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	4 J	µg/kg
2-HEXANONE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
ACETONE	11 U	µg/kg	10 UJ	µg/kg	11 U	µg/kg	12 UJ	µg/kg	21 UJ	µg/kg
BENZENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMOFORM	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMOMETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROFORM	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
METHYLENE CHLORIDE	11 UJ	µg/kg	10 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	12 UJ	µg/kg
STYRENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TOLUENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2,4,5-TRICHLOROPHENOL	870 U	µg/kg	830 U	µg/kg	920 U	µg/kg	930 U	µg/kg	960 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 UJ	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2,4-DINITROPHENOL	870 U	µg/kg	830 U	µg/kg	920 U	µg/kg	930 U	µg/kg	960 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2-CHLOROPHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
2-NITROANILINE	870 U	µg/kg	830 U	µg/kg	920 U	µg/kg	930 U	µg/kg	960 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB3-15-17		6SB3-25-27		6SB3-5-7		6SB3-60-62		6SB4-0-2	
LAB ID NUMBER	34595003		34595004		34595001		34595005		34587007	
SITE	6		6		6		6		6	
DATE SAMPLED	12/5/92		12/5/92		12/5/92		12/5/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
3,3'-DICHLOROBENZIDINE	360 UJ	µg/kg	340 UJ	µg/kg	380 UJ	µg/kg	380 UJ	µg/kg	400 UJ	µg/kg
3-NITROANILINE	870 UJ	µg/kg	830 UJ	µg/kg	920 UJ	µg/kg	930 UJ	µg/kg	960 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	870 U	µg/kg	830 U	µg/kg	920 U	µg/kg	930 U	µg/kg	960 U	µg/kg
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
4-CHLOROANILINE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
4-NITROANILINE	870 U	µg/kg	830 U	µg/kg	920 U	µg/kg	930 U	µg/kg	960 UJ	µg/kg
4-NITROPHENOL	870 U	µg/kg	830 U	µg/kg	920 U	µg/kg	930 U	µg/kg	960 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
ANTHRACENE	360 U	µg/kg	340 U	µg/kg	110 J	µg/kg	380 U	µg/kg	400 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	340 U	µg/kg	320 J	µg/kg	380 U	µg/kg	400 U	µg/kg
BENZO(A)PYRENE	360 U	µg/kg	340 U	µg/kg	290 J	µg/kg	380 U	µg/kg	400 U	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	340 U	µg/kg	290 J	µg/kg	380 U	µg/kg	400 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	340 U	µg/kg	160 J	µg/kg	380 U	µg/kg	400 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	340 U	µg/kg	290 J	µg/kg	380 U	µg/kg	400 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	360 U	µg/kg	340 U	µg/kg	340 UJ	µg/kg	380 U	µg/kg	400 U	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
CARBAZOLE	360 UJ	µg/kg	340 UJ	µg/kg	93 J	µg/kg	380 UJ	µg/kg	400 U	µg/kg
CHRYSENE	360 U	µg/kg	340 U	µg/kg	340 J	µg/kg	380 U	µg/kg	400 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
DIBENZO(A,H)ANTHRACENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
FLUORANTHENE	360 U	µg/kg	340 U	µg/kg	750	µg/kg	380 U	µg/kg	400 U	µg/kg
FLUORENE	360 U	µg/kg	340 U	µg/kg	57 J	µg/kg	380 U	µg/kg	400 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 UJ	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 UJ	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	340 U	µg/kg	200 J	µg/kg	380 U	µg/kg	400 U	µg/kg
ISOPHORONE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
NAPHTHALENE	360 UJ	µg/kg	340 UJ	µg/kg	380 UJ	µg/kg	380 UJ	µg/kg	400 U	µg/kg
NITROBENZENE	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
PENTACHLOROPHENOL	870 U	µg/kg	830 U	µg/kg	920 U	µg/kg	930 U	µg/kg	960 U	µg/kg
PHENANTHRENE	360 U	µg/kg	340 U	µg/kg	510	µg/kg	380 U	µg/kg	400 U	µg/kg
PHENOL	360 U	µg/kg	340 U	µg/kg	380 U	µg/kg	380 U	µg/kg	400 U	µg/kg
PYRENE	360 U	µg/kg	340 U	µg/kg	590	µg/kg	380 U	µg/kg	400 U	µg/kg
PESTICIDES/PCBs										
4,4'-DDD	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	130 J	µg/kg
4,4'-DDE	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	24 J	µg/kg
4,4'-DDT	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	16 UJ	µg/kg
ALDRIN	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
ALPHA-BHC	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
ALPHA-CHLORDANE	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
AROCLOR-1016	36 UJ	µg/kg	34 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	160 UJ	µg/kg

Blank s[illegible]icates chemical not analyzed.
A or D in [illegible] sample number indicates duplicate.

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB3-15-17		6SB3-25-27		6SB3-5-7		6SB3-60-62		6SB4-0-2	
LAB ID NUMBER	34595003		34595004		34595001		34595005		34567007	
SITE	6		6		6		6		6	
DATE SAMPLED	12/5/92		12/5/92		12/5/92		12/5/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	73 UJ	µg/kg	70 UJ	µg/kg	77 UJ	µg/kg	78 UJ	µg/kg	320 UJ	µg/kg
AROCLOR-1232	36 UJ	µg/kg	34 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	160 UJ	µg/kg
AROCLOR-1242	36 UJ	µg/kg	34 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	160 UJ	µg/kg
AROCLOR-1248	36 UJ	µg/kg	34 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	160 UJ	µg/kg
AROCLOR-1254	36 UJ	µg/kg	34 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	160 UJ	µg/kg
AROCLOR-1260	36 UJ	µg/kg	34 UJ	µg/kg	38 UJ	µg/kg	38 UJ	µg/kg	600 J	µg/kg
BETA-BHC	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
DELTA-BHC	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
DIELDRIN	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	30 J	µg/kg
ENDOSULFAN I	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
ENDOSULFAN II	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	16 UJ	µg/kg
ENDOSULFAN SULFATE	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	16 UJ	µg/kg
ENDRIN	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	16 UJ	µg/kg
ENDRIN ALDEHYDE	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	16 UJ	µg/kg
ENDRIN KETONE	3.6 UJ	µg/kg	3.4 UJ	µg/kg	3.8 UJ	µg/kg	3.8 UJ	µg/kg	16 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
GAMMA-CHLORDANE	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
HEPTACHLOR	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	8.2 UJ	µg/kg
METHOXYCHLOR	18 UJ	µg/kg	18 UJ	µg/kg	20 UJ	µg/kg	20 UJ	µg/kg	82 UJ	µg/kg
TOXAPHENE	180 UJ	µg/kg	180 UJ	µg/kg	200 UJ	µg/kg	200 UJ	µg/kg	820 UJ	µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg	3580	mg/kg
METALS										
ALUMINUM	2120	mg/kg	175	mg/kg	24300	mg/kg	588	mg/kg	29100	mg/kg
ANTIMONY	2.6 U	mg/kg	2.5 U	mg/kg	2.8 U	mg/kg	2.8 U	mg/kg	2.9 U	mg/kg
ARSENIC	1.1 J	mg/kg	0.15 U	mg/kg	0.99 J	mg/kg	0.16 U	mg/kg	3.4	mg/kg
BARIUM	0.67 J	mg/kg	0.33 J	mg/kg	6 J	mg/kg	1.8 J	mg/kg	11.2 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.1 U	mg/kg	0.12 U	mg/kg	0.12 U	mg/kg	0.12 U	mg/kg
CADMIUM	0.26 U	mg/kg	0.25 U	mg/kg	0.86 J	mg/kg	0.28 U	mg/kg	2.1	mg/kg
CALCIUM	123 J	mg/kg	90.9 J	mg/kg	318 J	mg/kg	159 J	mg/kg	209 J	mg/kg
CHROMIUM	3.1	mg/kg	0.77 U	mg/kg	30	mg/kg	1.4 J	mg/kg	30	mg/kg
COBALT	1.3 U	mg/kg	1.2 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg	1.4 U	mg/kg
COPPER	1.2 J	mg/kg	0.66 J	mg/kg	7.2	mg/kg	0.73 J	mg/kg	50.5	mg/kg
CYANIDE	0.16 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg	0.17 U	mg/kg	0.18 U	mg/kg
IRON	3490	mg/kg	261	mg/kg	17500	mg/kg	427	mg/kg	10000	mg/kg
LEAD	1.2	mg/kg	0.19 J	mg/kg	19.7	mg/kg	1.2	mg/kg	18.6	mg/kg
MAGNESIUM	15.9 J	mg/kg	10.2 J	mg/kg	84.1 J	mg/kg	43 J	mg/kg	131 J	mg/kg
MANGANESE	3.9	mg/kg	1.3 J	mg/kg	27.1	mg/kg	1.3 J	mg/kg	20	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.13	mg/kg
NICKEL	1.7 U	mg/kg	1.6 U	mg/kg	1.8 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg
POTASSIUM	49.6 J	mg/kg	39.8 U	mg/kg	94.6 J	mg/kg	60.6 J	mg/kg	121 J	mg/kg
SELENIUM	0.11 U	mg/kg	0.1 U	mg/kg	0.12 U	mg/kg	0.13 J	mg/kg	0.12 UJ	mg/kg
SILVER	0.46 UJ	mg/kg	0.44 UJ	mg/kg	0.48 UJ	mg/kg	0.49 UJ	mg/kg	0.51 U	mg/kg
SODIUM	147 J	mg/kg	172 J	mg/kg	235 J	mg/kg	270 J	mg/kg	197 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.15 U	mg/kg	0.18 J	mg/kg	0.16 U	mg/kg	0.17 J	mg/kg
VANADIUM	9.7 J	mg/kg	1 J	mg/kg	48.9	mg/kg	2.9 J	mg/kg	42.2	mg/kg
ZINC	2.6 J	mg/kg	2.4 J	mg/kg	15.4	mg/kg	1.5 J	mg/kg	162	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	6SB4-10-12		6SB4-20-22		6SB4-5-7	
LAB ID NUMBER	34587009		34587010		34587008	
SITE	6		6		6	
DATE SAMPLED	12/4/92		12/4/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES						
1,1,1-TRICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2-TRICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROPROPANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-BUTANONE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-HEXANONE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
4-METHYL-2-PENTANONE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ACETONE	12 UJ	μg/kg	14 UJ	μg/kg	11 UJ	μg/kg
BENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMODICHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOFORM	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON DISULFIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON TETRACHLORIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROBENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROFORM	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CIS-1,3-DICHLOROPROPENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
DIBROMOCHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ETHYLBENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
METHYLENE CHLORIDE	12 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg
STYRENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TETRACHLOROETHENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TOLUENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRICHLOROETHENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
VINYL CHLORIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
XYLENES, TOTAL	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
1,2-DICHLOROBENZENE	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
1,3-DICHLOROBENZENE	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
1,4-DICHLOROBENZENE	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4,5-TRICHLOROPHENOL	930 U	μg/kg	910 U	μg/kg	900 U	μg/kg
2,4,6-TRICHLOROPHENOL	380 UJ	μg/kg	370 UJ	μg/kg	370 UJ	μg/kg
2,4-DICHLOROPHENOL	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4-DIMETHYLPHENOL	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4-DINITROPHENOL	930 U	μg/kg	910 U	μg/kg	900 U	μg/kg
2,4-DINITROTOLUENE	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,6-DINITROTOLUENE	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-CHLORONAPHTHALENE	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-CHLOROPHENOL	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-METHYLNAPHTHALENE	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-METHYLPHENOL	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-NITROANILINE	930 U	μg/kg	910 U	μg/kg	900 U	μg/kg
2-NITROPHENOL	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg

Blank s; 'cates chemical not analyzed.
A or D in ..mple number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB4-10-12		6SB4-20-22		6SB4-5-7	
LAB ID NUMBER	34587009		34587010		34587008	
SITE	6		6		6	
DATE SAMPLED	12/4/92		12/4/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
3,3'-DICHLOROBENZIDINE	380 U	µg/kg	370 UJ	µg/kg	370 U	µg/kg
3-NITROANILINE	930 UJ	µg/kg	910 UJ	µg/kg	900 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	930 U	µg/kg	910 U	µg/kg	900 U	µg/kg
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	380 UJ	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-NITROANILINE	930 UJ	µg/kg	910 UJ	µg/kg	900 U	µg/kg
4-NITROPHENOL	930 U	µg/kg	910 U	µg/kg	900 U	µg/kg
ACENAPHTHENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ANTHRACENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(A)PYRENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(B)FLUORANTHENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	µg/kg	64 J	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CARBAZOLE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CHRYSENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZOFURAN	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORANTHENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	380 UJ	µg/kg	370 UJ	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	380 UJ	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ISOPHORONE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSODIPHENYLAMINE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NAPHTHALENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NITROBENZENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	930 U	µg/kg	910 U	µg/kg	900 U	µg/kg
PHENANTHRENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PHENOL	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PYRENE	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PESTICIDES/PCBs						
4,4'-DDD	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
4,4'-DDE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
4,4'-DDT	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ALDRIN	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-BHC	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-CHLORDANE	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
AROCLOR-1016	38 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	6SB4-10-12		6SB4-20-22		6SB4-5-7	
LAB ID NUMBER	34587009		34587010		34587008	
SITE	6		6		6	
DATE SAMPLED	12/4/92		12/4/92		12/4/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	78 UJ	µg/kg	76 UJ	µg/kg	75 UJ	µg/kg
AROCLOR-1232	38 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1242	38 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1248	38 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1254	38 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1260	38 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
BETA-BHC	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
DELTA-BHC	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
DIELDRIN	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN I	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ENDOSULFAN II	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN SULFATE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN ALDEHYDE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN KETONE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
GAMMA-BHC (LINDANE)	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
GAMMA-CHLORDANE	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	19 UJ	µg/kg	19 UJ	µg/kg
TOXAPHENE	200 UJ	µg/kg	190 UJ	µg/kg	190 UJ	µg/kg
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS	7.1	mg/kg	24.1	mg/kg	10	mg/kg
METALS						
ALUMINUM	14800	mg/kg	2520	mg/kg	3780	mg/kg
ANTIMONY	2.8 U	mg/kg	2.8 U	mg/kg	2.7 U	mg/kg
ARSENIC	2.7	mg/kg	0.2 J	mg/kg	2.1 J	mg/kg
BARIUM	3.6 J	mg/kg	2 J	mg/kg	3 J	mg/kg
BERYLLIUM	0.12 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg
CADMIUM	0.4 J	mg/kg	0.28 J	mg/kg	0.27 U	mg/kg
CALCIUM	153 J	mg/kg	121 J	mg/kg	101 J	mg/kg
CHROMIUM	13.8	mg/kg	5.1	mg/kg	8.7	mg/kg
COBALT	1.3 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg
COPPER	5 J	mg/kg	2.8 J	mg/kg	2.7 J	mg/kg
CYANIDE	0.17 U	mg/kg	0.17 U	mg/kg	0.17 U	mg/kg
IRON	11200	mg/kg	1230	mg/kg	9840	mg/kg
LEAD	3.7	mg/kg	2.1	mg/kg	3.9	mg/kg
MAGNESIUM	52.6 J	mg/kg	29.2 J	mg/kg	23 J	mg/kg
MANGANESE	14.9	mg/kg	4.2	mg/kg	13.7	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.03 J	mg/kg
NICKEL	1.8 U	mg/kg	1.8 U	mg/kg	1.7 U	mg/kg
POTASSIUM	97.2 J	mg/kg	43.5 U	mg/kg	58.4 J	mg/kg
SELENIUM	0.12 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg
SILVER	0.49 UJ	mg/kg	0.48 UJ	mg/kg	0.47 UJ	mg/kg
SODIUM	177 J	mg/kg	184 J	mg/kg	200 J	mg/kg
THALLIUM	0.16 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg
VANADIUM	32.5	mg/kg	5.3 J	mg/kg	28.9	mg/kg
ZINC	6.1 J	mg/kg	9.8	mg/kg	4.5 J	mg/kg

Blank s[illegible]cates chemical not analyzed.
A or D i[illegible]mple number indicates duplicate.

SITE 30

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00101		30B00102		30B00103		30B00108	
LAB ID NUMBER	RB602006		RB602007		RB602008		RB603009	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		5/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
1,1,2-TRICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
1,1-DICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
1,1-DICHLOROETHENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
1,2-DICHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
1,2-DICHLOROPROPANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
2-BUTANONE	28	μg/kg	12 U	μg/kg	5 J	μg/kg		μg/kg
2-HEXANONE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
4-METHYL-2-PENTANONE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
ACETONE	100 U	μg/kg	16 U	μg/kg	120	μg/kg		μg/kg
BENZENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
BROMODICHLOROMETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
BROMOFORM	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
BROMOMETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
CARBON DISULFIDE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
CARBON TETRACHLORIDE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
CHLOROBENZENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
CHLOROETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
CHLOROFORM	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
CHLOROMETHANE	11 UJ	μg/kg	12 UJ	μg/kg	12 UJ	μg/kg		μg/kg
CIS-1,3-DICHLOROPROPENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
DIBROMOCHLOROMETHANE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
ETHYLBENZENE	11 U	μg/kg	12 U	μg/kg	8 J	μg/kg		μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
STYRENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
TETRACHLOROETHENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
TOLUENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
TRICHLOROETHENE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
VINYL CHLORIDE	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
XYLENES, TOTAL	11 U	μg/kg	12 U	μg/kg	12 U	μg/kg		μg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	350 U	μg/kg	390 U	μg/kg	400 U	μg/kg		μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00101		30B00102		30B00103		30B00108	
LAB ID NUMBER	RB602006		RB602007		RB602008		RB603009	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		5/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
1,3-DICHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
1,4-DICHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2,4,5-TRICHLOROPHENOL	870 U	µg/kg	990 U	µg/kg	1000 U	µg/kg		µg/kg
2,4,6-TRICHLOROPHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2,4-DICHLOROPHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2,4-DIMETHYLPHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2,4-DINITROPHENOL	870 U	µg/kg	990 U	µg/kg	1000 U	µg/kg		µg/kg
2,4-DINITROTOLUENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2,6-DINITROTOLUENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2-CHLORONAPHTHALENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2-CHLOROPHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2-METHYLNAPHTHALENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2-METHYLPHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
2-NITROANILINE	870 U	µg/kg	990 U	µg/kg	1000 U	µg/kg		µg/kg
2-NITROPHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
3,3'-DICHLOROBENZIDINE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
3-NITROANILINE	870 U	µg/kg	990 U	µg/kg	1000 U	µg/kg		µg/kg
4,6-DINITRO-2-METHYLPHENOL	870 U	µg/kg	990 U	µg/kg	1000 U	µg/kg		µg/kg
4-BROMOPHENYL PHENYL ETHER	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
4-CHLOROANILINE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
4-METHYLPHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
4-NITROANILINE	870 U	µg/kg	990 U	µg/kg	1000 U	µg/kg		µg/kg
4-NITROPHENOL	870 U	µg/kg	990 U	µg/kg	1000 U	µg/kg		µg/kg
ACENAPHTHENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
ACENAPHTHYLENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
ANTHRACENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
BENZO(A)ANTHRACENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
BENZO(A)PYRENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
BENZO(B)FLUORANTHENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
BENZO(G,H,I)PERYLENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
BENZO(K)FLUORANTHENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
BIS(2-CHLOROETHYL)ETHER	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or Γ e sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00101		30B00102		30B00103		30B00108	
LAB ID NUMBER	RB602006		RB602007		RB602008		RB603009	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		5/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
BUTYLBENZYL PHTHALATE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
CARBAZOLE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
CHRYSENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
DI-N-BUTYL PHTHALATE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
DI-N-OCTYL PHTHALATE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
DIBENZO(A,H)ANTHRACENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
DIBENZOFURAN	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
DIETHYL PHTHALATE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
DIMETHYL PHTHALATE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
FLUORANTHENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
FLUORENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
HEXACHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
HEXACHLOROBUTADIENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
HEXACHLOROCYCLOPENTADIENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
HEXACHLOROETHANE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
INDENO(1,2,3-CD)PYRENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
ISOPHORONE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
N-NITROSO-DI-N-PROPYLAMINE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
N-NITROSODIPHENYLAMINE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
NAPHTHALENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
NITROBENZENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
PENTACHLOROPHENOL	870 U	µg/kg	990 U	µg/kg	1000 U	µg/kg		µg/kg
PHENANTHRENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
PHENOL	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
PYRENE	350 U	µg/kg	390 U	µg/kg	400 U	µg/kg		µg/kg
PESTICIDES/PCBs								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00101		30B00102		30B00103		30B00108	
LAB ID NUMBER	RB602006		RB602007		RB602008		RB603009	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		5/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	26 U	mg/kg	30 U	mg/kg	30 U	mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or [illegible]e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	30B00101		30B00102		30B00103		30B00108	
LAB ID NUMBER	RB602006		RB602007		RB602008		RB603009	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		5/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg	923	mg/kg	53.1	mg/kg

Blank space indicates chemical not analyzed.
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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00201		30B00202		30B00202D		30B00203	
LAB ID NUMBER	RB602001		RB602002		RB602005		RB602003	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		05/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2-TRICHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROPROPANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-BUTANONE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-HEXANONE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
4-METHYL-2-PENTANONE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ACETONE	19 U	μg/kg	11 U	μg/kg	11 U	μg/kg	12 U	μg/kg
BENZENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMODICHLOROMETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOFORM	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOMETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON DISULFIDE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON TETRACHLORIDE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROBENZENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROETHANE	11 UJ	μg/kg	11 U	μg/kg	11 U	μg/kg	11 UJ	μg/kg
CHLOROFORM	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROMETHANE	11 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg
CIS-1,3-DICHLOROPROPENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
DIBROMOCHLOROMETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ETHYLBENZENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
STYRENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TETRACHLOROETHENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TOLUENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRICHLOROETHENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
VINYL CHLORIDE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
XYLENES, TOTAL	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 UJ	μg/kg

Blank space indicates chemical not analyzed.
A or D [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00201		30B00202		30B00202D		30B00203	
LAB ID NUMBER	RB602001		RB602002		RB602005		RB602003	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		05/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
1,3-DICHLOROBENZENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
1,4-DICHLOROBENZENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4,5-TRICHLOROPHENOL	910 U	μg/kg	950 U	μg/kg	920 U	μg/kg	920 U	μg/kg
2,4,6-TRICHLOROPHENOL	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4-DICHLOROPHENOL	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4-DIMETHYLPHENOL	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4-DINITROPHENOL	910 U	μg/kg	950 U	μg/kg	920 U	μg/kg	920 U	μg/kg
2,4-DINITROTOLUENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,6-DINITROTOLUENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-CHLORONAPHTHALENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-CHLOROPHENOL	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-METHYLNAPHTHALENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-METHYLPHENOL	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-NITROANILINE	910 U	μg/kg	950 U	μg/kg	920 U	μg/kg	920 U	μg/kg
2-NITROPHENOL	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
3,3'-DICHLOROBENZIDINE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
3-NITROANILINE	910 U	μg/kg	950 U	μg/kg	920 U	μg/kg	920 U	μg/kg
4,6-DINITRO-2-METHYLPHENOL	910 U	μg/kg	950 U	μg/kg	920 U	μg/kg	920 U	μg/kg
4-BROMOPHENYL PHENYL ETHER	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-CHLORO-3-METHYLPHENOL	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-CHLOROANILINE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-METHYLPHENOL	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-NITROANILINE	910 U	μg/kg	950 U	μg/kg	920 U	μg/kg	920 U	μg/kg
4-NITROPHENOL	910 U	μg/kg	950 U	μg/kg	920 U	μg/kg	920 U	μg/kg
ACENAPHTHENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
ACENAPHTHYLENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
ANTHRACENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(A)ANTHRACENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(A)PYRENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(B)FLUORANTHENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(G,H,I)PERYLENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(K)FLUORANTHENE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	μg/kg	380 U	μg/kg	370 U	μg/kg	370 U	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00201		30B00202		30B00202D		30B00203	
LAB ID NUMBER	RB602001		RB602002		RB602005		RB602003	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		05/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CARBAZOLE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CHRYSENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORANTHENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ISOPHORONE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 UJ	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NAPHTHALENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NITROBENZENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	910 U	µg/kg	950 U	µg/kg	920 U	µg/kg	920 U	µg/kg
PHENANTHRENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PHENOL	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PYRENE	360 U	µg/kg	380 U	µg/kg	370 U	µg/kg	370 UJ	µg/kg
PESTICIDES/PCBs								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or D [illegible] sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00201		30B00202		30B00202D		30B00203	
LAB ID NUMBER	RB602001		RB602002		RB602005		RB602003	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		05/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	46	mg/kg	29 U	mg/kg	28 U	mg/kg	28 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00201		30B00202		30B00202D		30B00203	
LAB ID NUMBER	RB602001		RB602002		RB602005		RB602003	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		05/23/96		05/23/96		05/23/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg	1890	mg/kg

Blank space indicates chemical not analyzed.
A or D e sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00208		30B00301		30B00302		30B00303	
LAB ID NUMBER	RB603004		MB068010		MB068011		MB068012	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)		µg/kg	160	µg/kg	310	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
2-BUTANONE		µg/kg	57 U	µg/kg	10 J	µg/kg	11 U	µg/kg
2-HEXANONE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
ACETONE		µg/kg	140 U	µg/kg	80 U	µg/kg	17 U	µg/kg
BENZENE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
BROMOFORM		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
BROMOMETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
CHLOROBENZENE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
CHLOROETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
CHLOROFORM		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
CHLOROMETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
ETHYLBENZENE		µg/kg	57 U	µg/kg	9 J	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE		µg/kg	15 J	µg/kg	10 J	µg/kg	4 J	µg/kg
STYRENE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
TOLUENE		µg/kg	9 J	µg/kg	20 J	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE		µg/kg	57 U	µg/kg	59 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL		µg/kg	25 J	µg/kg	42 J	µg/kg	11 U	µg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00208		30B00301		30B00302		30B00303	
LAB ID NUMBER	RB603004		MB068010		MB068011		MB068012	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
1,3-DICHLOROBENZENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
1,4-DICHLOROBENZENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2,4,5-TRICHLOROPHENOL		µg/kg	4700 U	µg/kg	4900 U	µg/kg	960 U	µg/kg
2,4,6-TRICHLOROPHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2,4-DICHLOROPHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2,4-DIMETHYLPHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2,4-DINITROPHENOL		µg/kg	4700 U	µg/kg	4900 U	µg/kg	960 U	µg/kg
2,4-DINITROTOLUENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2,6-DINITROTOLUENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2-CHLORONAPHTHALENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2-CHLOROPHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2-METHYLNAPHTHALENE		µg/kg	4000	µg/kg	270 J	µg/kg	150 J	µg/kg
2-METHYLPHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
2-NITROANILINE		µg/kg	4700 U	µg/kg	4900 U	µg/kg	960 U	µg/kg
2-NITROPHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
3,3'-DICHLOROBENZIDINE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
3-NITROANILINE		µg/kg	4700 U	µg/kg	4900 U	µg/kg	960 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL		µg/kg	4700 U	µg/kg	4900 U	µg/kg	960 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
4-CHLORO-3-METHYLPHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
4-CHLOROANILINE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
4-METHYLPHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
4-NITROANILINE		µg/kg	4700 U	µg/kg	4900 U	µg/kg	960 U	µg/kg
4-NITROPHENOL		µg/kg	4700 U	µg/kg	4900 U	µg/kg	960 U	µg/kg
ACENAPHTHENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
ACENAPHTHYLENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
ANTHRACENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
BENZO(A)ANTHRACENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
BENZO(A)PYRENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
BENZO(B)FLUORANTHENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
BENZO(G,H,I)PERYLENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
BENZO(K)FLUORANTHENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHYL)ETHER		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed.
A or D[illegible]e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00208		30B00301		30B00302		30B00303	
LAB ID NUMBER	RB603004		MB068010		MB068011		MB068012	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	16000 J	µg/kg
BUTYLBENZYL PHTHALATE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
CARBAZOLE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
CHRYSENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
DI-N-BUTYL PHTHALATE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
DI-N-OCTYL PHTHALATE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
DIBENZO(A,H)ANTHRACENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
DIBENZOFURAN		µg/kg	220 J	µg/kg	2000 U	µg/kg	380 U	µg/kg
DIETHYL PHTHALATE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
DIMETHYL PHTHALATE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
FLUORANTHENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
FLUORENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
HEXACHLOROBENZENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
HEXACHLOROBUTADIENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
HEXACHLOROCYCLOPENTADIENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
HEXACHLOROETHANE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
INDENO(1,2,3-CD)PYRENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
ISOPHORONE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
N-NITROSODIPHENYLAMINE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	710	µg/kg
NAPHTHALENE		µg/kg	8600	µg/kg	420 J	µg/kg	200 J	µg/kg
NITROBENZENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
PENTACHLOROPHENOL		µg/kg	4700 U	µg/kg	4900 U	µg/kg	960 U	µg/kg
PHENANTHRENE		µg/kg	300 J	µg/kg	2000 U	µg/kg	380 U	µg/kg
PHENOL		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
PYRENE		µg/kg	1900 U	µg/kg	2000 U	µg/kg	380 U	µg/kg
PESTICIDES/PCBs								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00208		30B00301		30B00302		30B00303	
LAB ID NUMBER	RB603004		MB068010		MB068011		MB068012	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS		mg/kg	45.5	mg/kg	105	mg/kg	26.6	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg

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A or [illegible] e sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00208		30B00301		30B00302		30B00303	
LAB ID NUMBER	RB603004		MB068010		MB068011		MB068012	
SITE	30		30		30		30	
DATE SAMPLED	05/23/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON	121	mg/kg		mg/kg		mg/kg	883	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00305		30B00307		30B00308		30B00401	
LAB ID NUMBER	MB068015				MB070014		MB047006	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
2-BUTANONE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
2-HEXANONE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
ACETONE	25 U	µg/kg		µg/kg		µg/kg	15 U	µg/kg
BENZENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
BROMOFORM	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
BROMOMETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
CARBON DISULFIDE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
CHLOROBENZENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
CHLOROETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
CHLOROFORM	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
CHLOROMETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
CIS-1,3-DICHLOROPROPENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
ETHYLBENZENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	4 J	µg/kg		µg/kg		µg/kg	12 U	µg/kg
STYRENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
TETRACHLOROETHENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
TOLUENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
TRICHLOROETHENE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
VINYL CHLORIDE	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
XYLENES, TOTAL	10 U	µg/kg		µg/kg		µg/kg	12 U	µg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg

Blank space indicates chemical not analyzed.
A or D ... the sample number indicates duplicate.

CTO 0028

Rev. 1
5/4/99

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00305		30B00307		30B00308		30B00401	
LAB ID NUMBER	MB068016				MB070014		MB047006	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
1,3-DICHLOROBENZENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
1,4-DICHLOROBENZENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2,4,5-TRICHLOROPHENOL	870 U	µg/kg		µg/kg		µg/kg	5000 U	µg/kg
2,4,6-TRICHLOROPHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2,4-DICHLOROPHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2,4-DIMETHYLPHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2,4-DINITROPHENOL	870 U	µg/kg		µg/kg		µg/kg	5000 U	µg/kg
2,4-DINITROTOLUENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2,6-DINITROTOLUENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2-CHLORONAPHTHALENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2-CHLOROPHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2-METHYLNAPHTHALENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2-METHYLPHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
2-NITROANILINE	870 U	µg/kg		µg/kg		µg/kg	5000 U	µg/kg
2-NITROPHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
3,3'-DICHLOROBENZIDINE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
3-NITROANILINE	870 U	µg/kg		µg/kg		µg/kg	5000 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	870 U	µg/kg		µg/kg		µg/kg	5000 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
4-CHLORO-3-METHYLPHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
4-CHLOROANILINE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
4-METHYLPHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
4-NITROANILINE	870 U	µg/kg		µg/kg		µg/kg	5000 U	µg/kg
4-NITROPHENOL	870 U	µg/kg		µg/kg		µg/kg	5000 U	µg/kg
ACENAPHTHENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
ACENAPHTHYLENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
ANTHRACENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
BENZO(A)ANTHRACENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
BENZO(A)PYRENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
BENZO(B)FLUORANTHENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
BENZO(G,H,I)PERYLENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
BENZO(K)FLUORANTHENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00305		30B00307		30B00308		30B00401	
LAB ID NUMBER	MB068015				MB070014		MB047006	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
BUTYLBENZYL PHTHALATE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
CARBAZOLE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
CHRYSENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
DI-N-BUTYL PHTHALATE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
DI-N-OCTYL PHTHALATE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
DIBENZO(A,H)ANTHRACENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
DIBENZOFURAN	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
DIETHYL PHTHALATE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
DIMETHYL PHTHALATE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
FLUORANTHENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
FLUORENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
HEXACHLOROBENZENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
HEXACHLOROBUTADIENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
HEXACHLOROETHANE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
INDENO(1,2,3-CD)PYRENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
ISOPHORONE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
N-NITROSODIPHENYLAMINE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
NAPHTHALENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
NITROBENZENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
PENTACHLOROPHENOL	870 U	µg/kg		µg/kg		µg/kg	5000 U	µg/kg
PHENANTHRENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
PHENOL	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
PYRENE	350 U	µg/kg		µg/kg		µg/kg	2000 U	µg/kg
PESTICIDES/PCBs								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00305		30B00307		30B00308		30B00401	
LAB ID NUMBER	MB068015				MB070014		MB047006	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	13.2	mg/kg	4.8	mg/kg		mg/kg	118	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00305		30B00307		30B00308		30B00401	
LAB ID NUMBER	MB068015				MB070014		MB047006	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg	92.3	mg/kg		mg/kg

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A or [illegible] the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00402		30B00403		30B00408		30B00501	
LAB ID NUMBER	MB047007		MB057008		MB057009		MB047001	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
1,1,2-TRICHLOROETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
1,1-DICHLOROETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
1,1-DICHLOROETHENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
1,2-DICHLOROETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
1,2-DICHLOROPROPANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
2-BUTANONE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
2-HEXANONE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
4-METHYL-2-PENTANONE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
ACETONE	29 U	μg/kg	11 U	μg/kg		μg/kg	14 U	μg/kg
BENZENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
BROMODICHLOROMETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
BROMOFORM	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
BROMOMETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
CARBON DISULFIDE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
CARBON TETRACHLORIDE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
CHLOROBENZENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
CHLOROETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
CHLOROFORM	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
CHLOROMETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
CIS-1,3-DICHLOROPROPENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
DIBROMOCHLOROMETHANE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
ETHYLBENZENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
STYRENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
TETRACHLOROETHENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
TOLUENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
TRICHLOROETHENE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
VINYL CHLORIDE	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
XYLENES, TOTAL	11 U	μg/kg	11 U	μg/kg		μg/kg	12 U	μg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00402		30B00403		30B00408		30B00501	
LAB ID NUMBER	MB047007		MB057008		MB057009		MB047001	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2,4,5-TRICHLOROPHENOL	940 U	µg/kg	920 U	µg/kg		µg/kg	970 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2,4-DINITROPHENOL	940 U	µg/kg	920 U	µg/kg		µg/kg	970 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2-CHLOROPHENOL	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg	370 U	µg/kg		µg/kg	550	µg/kg
2-METHYLPHENOL	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
2-NITROANILINE	940 U	µg/kg	920 U	µg/kg		µg/kg	970 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
3-NITROANILINE	940 U	µg/kg	920 U	µg/kg		µg/kg	970 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	940 U	µg/kg	920 U	µg/kg		µg/kg	970 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
4-NITROANILINE	940 U	µg/kg	920 U	µg/kg		µg/kg	970 U	µg/kg
4-NITROPHENOL	940 U	µg/kg	920 U	µg/kg		µg/kg	970 U	µg/kg
ACENAPHTHENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
ANTHRACENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
BENZO(A)PYRENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	370 U	µg/kg		µg/kg	390 U	µg/kg

Blank space indicates chemical not analyzed.
A or [illegible] e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00402		30B00403		30B00408		30B00501	
LAB ID NUMBER	MB047007		MB057008		MB057009		MB047001	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
BUTYLBENZYL PHTHALATE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
CARBAZOLE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
CHRYSENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
DI-N-BUTYL PHTHALATE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
DI-N-OCTYL PHTHALATE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
DIBENZO(A,H)ANTHRACENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
DIBENZOFURAN	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
DIETHYL PHTHALATE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
DIMETHYL PHTHALATE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
FLUORANTHENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
FLUORENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
HEXACHLOROBENZENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
HEXACHLOROBUTADIENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
HEXACHLOROETHANE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
INDENO(1,2,3-CD)PYRENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
ISOPHORONE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
N-NITROSODIPHENYLAMINE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
NAPHTHALENE	370 U	μg/kg	370 U	μg/kg		μg/kg	140 J	μg/kg
NITROBENZENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
PENTACHLOROPHENOL	940 U	μg/kg	920 U	μg/kg		μg/kg	62 J	μg/kg
PHENANTHRENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
PHENOL	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
PYRENE	370 U	μg/kg	370 U	μg/kg		μg/kg	390 U	μg/kg
PESTICIDES/PCBs								
4,4'-DDD		μg/kg		μg/kg		μg/kg		μg/kg
4,4'-DDE		μg/kg		μg/kg		μg/kg		μg/kg
4,4'-DDT		μg/kg		μg/kg		μg/kg		μg/kg
ALDRIN		μg/kg		μg/kg		μg/kg		μg/kg
ALPHA-BHC		μg/kg		μg/kg		μg/kg		μg/kg
ALPHA-CHLORDANE		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1016		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1221		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1232		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1242		μg/kg		μg/kg		μg/kg		μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00402		30B00403		30B00408		30B00501	
LAB ID NUMBER	MB047007		MB057008		MB057009		MB047001	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	13.9	mg/kg	7.2	mg/kg		mg/kg	143	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or [illegible]e sample number indicates duplicate.

CTO 0028

Rev. 1
5/4/99

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00402		30B00403		30B00408		30B00501	
LAB ID NUMBER	MB047007		MB057008		MB057009		MB047001	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg	260	mg/kg	42.7	mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00502		30B00502D		30B00503		30B00507	
LAB ID NUMBER	MB047002		MB047005		MB057003			
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
2-BUTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
ACETONE	16 U	µg/kg	14 U	µg/kg	11 U	µg/kg		µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
CHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
TRICHLOROETHENE	11 U	µg/kg	1 J	µg/kg	11 U	µg/kg		µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg		µg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	1900 UJ	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or [illegible]e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00502		30B00502D		30B00503		30B00507	
LAB ID NUMBER	MB047002		MB047005		MB057003			
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
1,3-DICHLOROBENZENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
1,4-DICHLOROBENZENE	1900 UJ	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2,4,5-TRICHLOROPHENOL	4800 U	µg/kg	4800 U	µg/kg	920 U	µg/kg		µg/kg
2,4,6-TRICHLOROPHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2,4-DICHLOROPHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2,4-DIMETHYLPHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2,4-DINITROPHENOL	4800 U	µg/kg	4800 U	µg/kg	920 U	µg/kg		µg/kg
2,4-DINITROTOLUENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2,6-DINITROTOLUENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2-CHLORONAPHTHALENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2-CHLOROPHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2-METHYLNAPHTHALENE	1900 U	µg/kg	210 J	µg/kg	150 J	µg/kg		µg/kg
2-METHYLPHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
2-NITROANILINE	4800 U	µg/kg	4800 U	µg/kg	920 U	µg/kg		µg/kg
2-NITROPHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
3,3'-DICHLOROBENZIDINE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
3-NITROANILINE	4800 U	µg/kg	4800 U	µg/kg	920 U	µg/kg		µg/kg
4,6-DINITRO-2-METHYLPHENOL	4800 U	µg/kg	4800 U	µg/kg	920 U	µg/kg		µg/kg
4-BROMOPHENYL PHENYL ETHER	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
4-CHLOROANILINE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
4-CHLOROPHENYL PHENYL ETHER	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
4-METHYLPHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
4-NITROANILINE	4800 U	µg/kg	4800 U	µg/kg	920 U	µg/kg		µg/kg
4-NITROPHENOL	4800 U	µg/kg	4800 U	µg/kg	920 U	µg/kg		µg/kg
ACENAPHTHENE	1900 UJ	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
ACENAPHTHYLENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
ANTHRACENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
BENZO(A)ANTHRACENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
BENZO(A)PYRENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
BENZO(B)FLUORANTHENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
BENZO(G,H,I)PERYLENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
BENZO(K)FLUORANTHENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
BIS(2-CHLOROETHOXY)METHANE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
BIS(2-CHLOROETHYL)ETHER	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00502		30B00502D		30B00503		30B00507	
LAB ID NUMBER	MB047002		MB047005		MB057003			
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
BUTYLBENZYL PHTHALATE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
CARBAZOLE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
CHRYSENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
DI-N-BUTYL PHTHALATE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
DI-N-OCTYL PHTHALATE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
DIBENZO(A,H)ANTHRACENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
DIBENZOFURAN	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
DIETHYL PHTHALATE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
DIMETHYL PHTHALATE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
FLUORANTHENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
FLUORENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
HEXACHLOROBENZENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
HEXACHLOROBUTADIENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
HEXACHLOROCYCLOPENTADIENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
HEXACHLOROETHANE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
INDENO(1,2,3-CD)PYRENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
ISOPHORONE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
N-NITROSO-DI-N-PROPYLAMINE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
N-NITROSODIPHENYLAMINE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
NAPHTHALENE	1900 U	µg/kg	1900 U	µg/kg	46 J	µg/kg		µg/kg
NITROBENZENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
PENTACHLOROPHENOL	4800 U	µg/kg	4800 U	µg/kg	920 U	µg/kg		µg/kg
PHENANTHRENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
PHENOL	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
PYRENE	1900 U	µg/kg	1900 U	µg/kg	370 U	µg/kg		µg/kg
PESTICIDES/PCBs								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or D [illegible] e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00502		30B00502D		30B00503		30B00507	
LAB ID NUMBER	MB047002		MB047005		MB057003			
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	1230	mg/kg	486	mg/kg	74.9	mg/kg	2 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00502		30B00502D		30B00503		30B00507	
LAB ID NUMBER	MB047002		MB047005		MB057003			
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/4/96		6/4/96		6/4/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg	453	mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D [illegible]he sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00508		30B00601		30B00602		30B00602D	
LAB ID NUMBER	MB057004		MB068004		MB068005		MB068009	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/5/96		6/5/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
2-BUTANONE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
2-HEXANONE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
ACETONE		µg/kg	70 U	µg/kg	23 U	µg/kg	31 U	µg/kg
BENZENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMOFORM		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMOMETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROBENZENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROFORM		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROMETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
ETHYLBENZENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE		µg/kg	4 J	µg/kg	5 J	µg/kg	4 J	µg/kg
STYRENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TOLUENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE		µg/kg	11 U	µg/kg	12 U	µg/kg	1 J	µg/kg
VINYL CHLORIDE		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL		µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00508		30B00601		30B00602		30B00602D	
LAB ID NUMBER	MB057004		MB068004		MB068005		MB068009	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
1,3-DICHLOROBENZENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
1,4-DICHLOROBENZENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,4,5-TRICHLOROPHENOL		µg/kg	920 U	µg/kg	970 U	µg/kg	960 U	µg/kg
2,4,6-TRICHLOROPHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,4-DICHLOROPHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,4-DIMETHYLPHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,4-DINITROPHENOL		µg/kg	920 U	µg/kg	970 U	µg/kg	960 U	µg/kg
2,4-DINITROTOLUENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,6-DINITROTOLUENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-CHLORONAPHTHALENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-CHLOROPHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-METHYLNAPHTHALENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-METHYLPHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-NITROANILINE		µg/kg	920 U	µg/kg	970 U	µg/kg	960 U	µg/kg
2-NITROPHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
3,3'-DICHLOROBENZIDINE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
3-NITROANILINE		µg/kg	920 U	µg/kg	970 U	µg/kg	960 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL		µg/kg	920 U	µg/kg	970 U	µg/kg	960 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
4-CHLORO-3-METHYLPHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
4-CHLOROANILINE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
4-METHYLPHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
4-NITROANILINE		µg/kg	920 U	µg/kg	970 U	µg/kg	960 U	µg/kg
4-NITROPHENOL		µg/kg	920 U	µg/kg	970 U	µg/kg	960 U	µg/kg
ACENAPHTHENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
ACENAPHTHYLENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
ANTHRACENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(A)ANTHRACENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(A)PYRENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(B)FLUORANTHENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(G,H,I)PERYLENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(K)FLUORANTHENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHYL)ETHER		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed.
A or D e sample number indicates duplicate.

CTO 0028

Rev. 1
5/4/99

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00508		30B00601		30B00602		30B00602D	
LAB ID NUMBER	MB057004		MB068004		MB068005		MB068009	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BUTYLBENZYL PHTHALATE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
CARBAZOLE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
CHRYSENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DI-N-BUTYL PHTHALATE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DI-N-OCTYL PHTHALATE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DIBENZO(A,H)ANTHRACENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DIBENZOFURAN		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DIETHYL PHTHALATE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DIMETHYL PHTHALATE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
FLUORANTHENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
FLUORENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
HEXACHLOROBENZENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
HEXACHLOROBUTADIENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
HEXACHLOROCYCLOPENTADIENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
HEXACHLOROETHANE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
INDENO(1,2,3-CD)PYRENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
ISOPHORONE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
N-NITROSODIPHENYLAMINE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
NAPHTHALENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
NITROBENZENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
PENTACHLOROPHENOL		µg/kg	920 U	µg/kg	970 U	µg/kg	960 U	µg/kg
PHENANTHRENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
PHENOL		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
PYRENE		µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
PESTICIDES/PCBs								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00508		30B00601		30B00602		30B00602D	
LAB ID NUMBER	MB057004		MB068004		MB068005		MB068009	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	2 U	mg/kg	2 U	mg/kg	2 U	mg/kg	2 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D [illegible]e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00508		30B00601		30B00602		30B00602D	
LAB ID NUMBER	MB057004		MB068004		MB068005		MB068009	
SITE	30		30		30		30	
DATE SAMPLED	6/4/96		6/5/96		6/5/96		6/5/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON	71.6	mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00603		30B00607		30B00608		30SB02-0-2	
LAB ID NUMBER	MB068006				MB070008		34799009	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
2-BUTANONE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
2-HEXANONE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
ACETONE	16 U	µg/kg		µg/kg		µg/kg	1400 UJ	µg/kg
BENZENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
BROMOFORM	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
BROMOMETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
CHLOROBENZENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
CHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
CHLOROFORM	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
CHLOROMETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
ETHYLBENZENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	2 J	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
STYRENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
TOLUENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg		µg/kg		µg/kg	180 J	µg/kg
VINYL CHLORIDE	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg		µg/kg		µg/kg	1400 U	µg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed.
A or D ' sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00603		30B00607		30B00608		30SB02-0-2	
LAB ID NUMBER	MB068006				MB070008		34799009	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	940 U	µg/kg		µg/kg		µg/kg	900 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	940 U	µg/kg		µg/kg		µg/kg	900 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-CHLOROPHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg		µg/kg		µg/kg	4700	µg/kg
2-METHYLPHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-NITROANILINE	940 U	µg/kg		µg/kg		µg/kg	900 U	µg/kg
2-NITROPHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
3-NITROANILINE	940 U	µg/kg		µg/kg		µg/kg	900 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	940 U	µg/kg		µg/kg		µg/kg	900 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	370 U	µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-NITROANILINE	940 U	µg/kg		µg/kg		µg/kg	900 U	µg/kg
4-NITROPHENOL	940 U	µg/kg		µg/kg		µg/kg	900 UJ	µg/kg
ACENAPHTHENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
ANTHRACENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(A)PYRENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00603		30B00607		30B00608		30SB02-0-2	
LAB ID NUMBER	MB068006				MB070008		34799009	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	µg/kg		µg/kg		µg/kg	160 J	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg		µg/kg		µg/kg	370 UJ	µg/kg
CARBAZOLE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
CHRYSENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg		µg/kg		µg/kg	370 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DIBENZOFURAN	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
FLUORANTHENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
FLUORENE	370 U	µg/kg		µg/kg		µg/kg	480 J	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
ISOPHORONE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
NAPHTHALENE	370 U	µg/kg		µg/kg		µg/kg	1100	µg/kg
NITROBENZENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	940 U	µg/kg		µg/kg		µg/kg	900 U	µg/kg
PHENANTHRENE	370 U	µg/kg		µg/kg		µg/kg	120 J	µg/kg
PHENOL	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
PYRENE	370 U	µg/kg		µg/kg		µg/kg	370 U	µg/kg
PESTICIDES/PCBs								
4,4'-DDD		µg/kg		µg/kg		µg/kg	2.6 J	µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg	75 UJ	µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00603		30B00607		30B00608		30SB02-0-2	
LAB ID NUMBER	MB068006				MB070008		34799009	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248		μg/kg		μg/kg		μg/kg	37 UJ	μg/kg
AROCLOR-1254		μg/kg		μg/kg		μg/kg	37 UJ	μg/kg
AROCLOR-1260		μg/kg		μg/kg		μg/kg	37 UJ	μg/kg
BETA-BHC		μg/kg		μg/kg		μg/kg	1.9 UJ	μg/kg
DELTA-BHC		μg/kg		μg/kg		μg/kg	1.9 UJ	μg/kg
DIELDRIN		μg/kg		μg/kg		μg/kg	1.9 J	μg/kg
ENDOSULFAN I		μg/kg		μg/kg		μg/kg	1.9 UJ	μg/kg
ENDOSULFAN II		μg/kg		μg/kg		μg/kg	3.7 UJ	μg/kg
ENDOSULFAN SULFATE		μg/kg		μg/kg		μg/kg	3.7 UJ	μg/kg
ENDRIN		μg/kg		μg/kg		μg/kg	3.7 UJ	μg/kg
ENDRIN ALDEHYDE		μg/kg		μg/kg		μg/kg	3.7 UJ	μg/kg
ENDRIN KETONE		μg/kg		μg/kg		μg/kg	3.7 UJ	μg/kg
GAMMA-BHC (LINDANE)		μg/kg		μg/kg		μg/kg	1.9 UJ	μg/kg
GAMMA-CHLORDANE		μg/kg		μg/kg		μg/kg	1.9 UJ	μg/kg
HEPTACHLOR		μg/kg		μg/kg		μg/kg	1.9 UJ	μg/kg
HEPTACHLOR EPOXIDE		μg/kg		μg/kg		μg/kg	1.9 UJ	μg/kg
METHOXYCHLOR		μg/kg		μg/kg		μg/kg	19 UJ	μg/kg
TOXAPHENE		μg/kg		μg/kg		μg/kg	190 UJ	μg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	2 U	mg/kg	2 U	mg/kg		mg/kg	9610	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg	8190	mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg	5.6 U	mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg	4	mg/kg
BARIUM		mg/kg		mg/kg		mg/kg	13.1 J	mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg	0.08 J	mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg	0.9 U	mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg	606 J	mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg	17.2	mg/kg
COBALT		mg/kg		mg/kg		mg/kg	1.6 J	mg/kg
COPPER		mg/kg		mg/kg		mg/kg	1.1 J	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg	0.48 J	mg/kg
IRON		mg/kg		mg/kg		mg/kg	13800	mg/kg
LEAD		mg/kg		mg/kg		mg/kg	26.2	mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg	112 J	mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg	146	mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30B00603		30B00607		30B00608		30SB02-0-2	
LAB ID NUMBER	MB068006				MB070008		34799009	
SITE	30		30		30		30	
DATE SAMPLED	6/5/96		6/5/96		6/5/96		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY		mg/kg		mg/kg		mg/kg	0.03 J	mg/kg
NICKEL		mg/kg		mg/kg		mg/kg	2.8 U	mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg	177 U	mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg	2.1	mg/kg
SILVER		mg/kg		mg/kg		mg/kg	0.9 J	mg/kg
SODIUM		mg/kg		mg/kg		mg/kg	12.7 U	mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg	0.5 U	mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg	37.4	mg/kg
ZINC		mg/kg		mg/kg		mg/kg	1.6 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON	839	mg/kg		mg/kg	50.5	mg/kg		mg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB02-10-12		30SB02-20-22		30SB03-0-2		30SB03-10-12	
LAB ID NUMBER	34799010		34799011		34799007		34799008	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		1/4/93		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 UJ	µg/kg	10 U	µg/kg	58 UJ	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 UJ	µg/kg	10 U	µg/kg	58 UJ	µg/kg	11 U	µg/kg
2-HEXANONE	11 UJ	µg/kg	10 U	µg/kg	58 UJ	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 UJ	µg/kg	10 U	µg/kg	58 UJ	µg/kg	11 U	µg/kg
ACETONE	26	µg/kg	9 J	µg/kg	58 U	µg/kg	670	µg/kg
BENZENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
STYRENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	10 U	µg/kg	58 U	µg/kg	11 U	µg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB02-10-12		30SB02-20-22		30SB03-0-2		30SB03-10-12	
LAB ID NUMBER	34799010		34799011		34799007		34799008	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		1/4/93		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
1,3-DICHLOROBENZENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
1,4-DICHLOROBENZENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4,5-TRICHLOROPHENOL	890 U	μg/kg	820 U	μg/kg	910 U	μg/kg	890 U	μg/kg
2,4,6-TRICHLOROPHENOL	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4-DICHLOROPHENOL	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4-DIMETHYLPHENOL	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,4-DINITROPHENOL	890 U	μg/kg	820 U	μg/kg	910 U	μg/kg	890 U	μg/kg
2,4-DINITROTOLUENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2,6-DINITROTOLUENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-CHLORONAPHTHALENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-CHLOROPHENOL	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-METHYLNAPHTHALENE	370 U	μg/kg	340 U	μg/kg	69 J	μg/kg	370 U	μg/kg
2-METHYLPHENOL	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
2-NITROANILINE	890 U	μg/kg	820 U	μg/kg	910 U	μg/kg	890 U	μg/kg
2-NITROPHENOL	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
3,3'-DICHLOROBENZIDINE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
3-NITROANILINE	890 U	μg/kg	820 U	μg/kg	910 U	μg/kg	890 U	μg/kg
4,6-DINITRO-2-METHYLPHENOL	890 U	μg/kg	820 U	μg/kg	910 U	μg/kg	890 U	μg/kg
4-BROMOPHENYL PHENYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
4-CHLORO-3-METHYLPHENOL	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-CHLOROANILINE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-METHYLPHENOL	44 J	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
4-NITROANILINE	890 U	μg/kg	820 U	μg/kg	910 U	μg/kg	890 U	μg/kg
4-NITROPHENOL	890 UJ	μg/kg	820 UJ	μg/kg	910 UJ	μg/kg	890 UJ	μg/kg
ACENAPHTHENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
ACENAPHTHYLENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
ANTHRACENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(A)ANTHRACENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(A)PYRENE	47 J	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(B)FLUORANTHENE	62 J	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(G,H,I)PERYLENE	65 J	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BENZO(K)FLUORANTHENE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	μg/kg	340 U	μg/kg	370 U	μg/kg	370 U	μg/kg

Blank space indicates chemical not analyzed.
A or D e sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB02-10-12		30SB02-20-22		30SB03-0-2		30SB03-10-12	
LAB ID NUMBER	34799010		34799011		34799007		34799008	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		1/4/93		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	370 UJ	µg/kg	340 UJ	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg
CARBAZOLE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CHRYSENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	370 UJ	µg/kg	340 UJ	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORANTHENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	71 J	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ISOPHORONE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NAPHTHALENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NITROBENZENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	890 U	µg/kg	820 U	µg/kg	910 U	µg/kg	890 U	µg/kg
PHENANTHRENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PHENOL	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PYRENE	370 U	µg/kg	340 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PESTICIDES/PCBs								
4,4'-DDD	3.7 UJ	µg/kg	3.4 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
4,4'-DDE	3.7 UJ	µg/kg	3.4 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
4,4'-DDT	3.7 UJ	µg/kg	3.4 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ALDRIN	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-CHLORDANE	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
AROCLOR-1016	37 UJ	µg/kg	34 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1221	74 UJ	µg/kg	69 UJ	µg/kg	76 UJ	µg/kg	74 UJ	µg/kg
AROCLOR-1232	37 UJ	µg/kg	34 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1242	37 UJ	µg/kg	34 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB02-10-12		30SB02-20-22		30SB03-0-2		30SB03-10-12	
LAB ID NUMBER	34799010		34799011		34799007		34799008	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		1/4/93		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248	37 UJ	µg/kg	34 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1254	37 UJ	µg/kg	34 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1260	37 UJ	µg/kg	34 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
BETA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
DELTA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
DIELDRIN	3.7 UJ	µg/kg	3.4 UJ	µg/kg	13 J	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN I	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ENDOSULFAN II	3.7 UJ	µg/kg	3.4 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN SULFATE	3.7 UJ	µg/kg	3.4 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN	3.7 UJ	µg/kg	3.4 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN ALDEHYDE	3.7 UJ	µg/kg	3.4 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN KETONE	3.7 UJ	µg/kg	3.4 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
GAMMA-CHLORDANE	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
METHOXYCHLOR	19 UJ	µg/kg	18 UJ	µg/kg	19 UJ	µg/kg	19 UJ	µg/kg
TOXAPHENE	190 UJ	µg/kg	180 UJ	µg/kg	190 UJ	µg/kg	190 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	865	mg/kg	103	mg/kg	2660	mg/kg	50.2	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	965	mg/kg	127	mg/kg	18000	mg/kg	5000	mg/kg
ANTIMONY	5.4 U	mg/kg	5.1 U	mg/kg	5.7 U	mg/kg	5.5 U	mg/kg
ARSENIC	2.2 J	mg/kg	0.44 U	mg/kg	4.5	mg/kg	1.1 J	mg/kg
BARIUM	1.2 J	mg/kg	0.1 UJ	mg/kg	12 J	mg/kg	2.7 J	mg/kg
BERYLLIUM	0.06 U	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg
CADMIUM	0.87 U	mg/kg	0.81 U	mg/kg	0.91 U	mg/kg	0.88 U	mg/kg
CALCIUM	156 J	mg/kg	34.4 J	mg/kg	473 J	mg/kg	131 J	mg/kg
CHROMIUM	0.93 J	mg/kg	0.63 J	mg/kg	20.6	mg/kg	5.1	mg/kg
COBALT	0.49 U	mg/kg	0.46 U	mg/kg	1.8 J	mg/kg	0.5 U	mg/kg
COPPER	0.37 U	mg/kg	0.6 J	mg/kg	2.2 J	mg/kg	1.1 J	mg/kg
CYANIDE	0.53 J	mg/kg	0.51 J	mg/kg	0.44 J	mg/kg	0.37 J	mg/kg
IRON	1770	mg/kg	113	mg/kg	18500	mg/kg	5520	mg/kg
LEAD	2.1	mg/kg	0.27 J	mg/kg	9.3	mg/kg	2.2	mg/kg
MAGNESIUM	14 J	mg/kg	7.3 U	mg/kg	237 J	mg/kg	31.7 J	mg/kg
MANGANESE	1.9 J	mg/kg	0.29 J	mg/kg	23.2	mg/kg	7.5	mg/kg

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Rev. 1
5/4/99

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB02-10-12		30SB02-20-22		30SB03-0-2		30SB03-10-12	
LAB ID NUMBER	34799010		34799011		34799007		34799008	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		1/4/93		1/4/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY	0.02 U	mg/kg	0.01 U	mg/kg	0.02 J	mg/kg	0.02 U	mg/kg
NICKEL	2.7 U	mg/kg	2.6 U	mg/kg	2.9 U	mg/kg	2.8 U	mg/kg
POTASSIUM	113 U	mg/kg	106 U	mg/kg	122 J	mg/kg	155 U	mg/kg
SELENIUM	0.77 U	mg/kg	0.72 U	mg/kg	1.7	mg/kg	0.78 U	mg/kg
SILVER	0.53 U	mg/kg	0.5 U	mg/kg	0.89 J	mg/kg	0.67 J	mg/kg
SODIUM	12.2 U	mg/kg	33.9 J	mg/kg	12.9 U	mg/kg	12.4 U	mg/kg
THALLIUM	0.48 U	mg/kg	0.45 U	mg/kg	0.51 U	mg/kg	0.49 U	mg/kg
VANADIUM	7.2 J	mg/kg	0.73 J	mg/kg	55	mg/kg	21.4	mg/kg
ZINC	0.35 U	mg/kg	2.5 J	mg/kg	2.5 J	mg/kg	0.64 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB04-0-2		30SB04-5-7		30SB1-10-12		30SB1-120	
LAB ID NUMBER	34799012		74799013		34607009		34617001	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		12/6/92		12/8/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
2-BUTANONE	1500 U	µg/kg	7600 UJ	µg/kg	57 U	µg/kg	12 U	µg/kg
2-HEXANONE	1500 U	µg/kg	7600 UJ	µg/kg	57 U	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
ACETONE	1500 UJ	µg/kg	7600 UJ	µg/kg	690 J	µg/kg	12 UJ	µg/kg
BENZENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
BROMOFORM	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
BROMOMETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
CHLOROETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
CHLOROFORM	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	1500 UJ	µg/kg	7600 UJ	µg/kg	57 U	µg/kg	12 U	µg/kg
CIS-1,3-DICHLOROPROPENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	1500 U	µg/kg	7600 U	µg/kg	17 UJ	µg/kg	12 UJ	µg/kg
STYRENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
TOLUENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
VINYL CHLORIDE	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	1500 U	µg/kg	7600 U	µg/kg	57 U	µg/kg	12 U	µg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg

Blank space indicates chemical not analyzed.
A or D ' ə sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB04-0-2		30SB04-5-7		30SB1-10-12		30SB1-120	
LAB ID NUMBER	34799012		74799013		34607009		34617001	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		12/8/92		12/8/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
1,3-DICHLOROBENZENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
1,4-DICHLOROBENZENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2,4,5-TRICHLOROPHENOL	960 U	µg/kg	9500 U	µg/kg	4600 U	µg/kg	30 U	µg/kg
2,4,6-TRICHLOROPHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2,4-DICHLOROPHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2,4-DIMETHYLPHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2,4-DINITROPHENOL	960 U	µg/kg	9500 U	µg/kg	4600 U	µg/kg	30 U	µg/kg
2,4-DINITROTOLUENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2,6-DINITROTOLUENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2-CHLORONAPHTHALENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2-CHLOROPHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2-METHYLNAPHTHALENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2-METHYLPHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
2-NITROANILINE	960 U	µg/kg	9500 U	µg/kg	4600 U	µg/kg	30 U	µg/kg
2-NITROPHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
3,3'-DICHLOROBENZIDINE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
3-NITROANILINE	960 U	µg/kg	9500 U	µg/kg	4600 U	µg/kg	30 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	960 U	µg/kg	9500 U	µg/kg	4600 U	µg/kg	30 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
4-CHLOROANILINE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 UJ	µg/kg
4-METHYLPHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
4-NITROANILINE	960 U	µg/kg	9500 U	µg/kg	4600 U	µg/kg	30 U	µg/kg
4-NITROPHENOL	960 UJ	µg/kg	9500 UJ	µg/kg	4600 UJ	µg/kg	30 U	µg/kg
ACENAPHTHENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
ACENAPHTHYLENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
ANTHRACENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
BENZO(A)ANTHRACENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
BENZO(A)PYRENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
BENZO(B)FLUORANTHENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
BENZO(G,H,I)PERYLENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	2 J	µg/kg
BENZO(K)FLUORANTHENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB04-0-2		30SB04-5-7		30SB1-10-12		30SB1-120	
LAB ID NUMBER	34799012		74799013		34607009		34617001	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		12/6/92		12/8/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	110 J	µg/kg	830 J	µg/kg	1900 U	µg/kg	12 U	µg/kg
BUTYLBENZYL PHTHALATE	400 UJ	µg/kg	3900 UJ	µg/kg	1900 U	µg/kg	12 U	µg/kg
CARBAZOLE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
CHRYSENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
DI-N-BUTYL PHTHALATE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
DI-N-OCTYL PHTHALATE	400 UJ	µg/kg	3900 UJ	µg/kg	1900 U	µg/kg	12 U	µg/kg
DIBENZO(A,H)ANTHRACENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
DIBENZOFURAN	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
DIETHYL PHTHALATE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
DIMETHYL PHTHALATE	400 U	µg/kg	3900 U	µg/kg	330 J	µg/kg	12 U	µg/kg
FLUORANTHENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
FLUORENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
HEXACHLOROBENZENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
HEXACHLOROBUTADIENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 UJ	µg/kg
HEXACHLOROCYCLOPENTADIENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
HEXACHLOROETHANE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
INDENO(1,2,3-CD)PYRENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
ISOPHORONE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
N-NITROSODIPHENYLAMINE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
NAPHTHALENE	400 U	µg/kg	20000	µg/kg	1900 U	µg/kg	12 U	µg/kg
NITROBENZENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
PENTACHLOROPHENOL	960 U	µg/kg	9500 U	µg/kg	4600 U	µg/kg	30 U	µg/kg
PHENANTHRENE	400 U	µg/kg	680 J	µg/kg	1900 U	µg/kg	12 U	µg/kg
PHENOL	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
PYRENE	400 U	µg/kg	3900 U	µg/kg	1900 U	µg/kg	12 U	µg/kg
PESTICIDES/PCBs								
4,4'-DDD	4 UJ	µg/kg	3.9 UJ	µg/kg	6.3 J	µg/kg	4.1 UJ	µg/kg
4,4'-DDE	4 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
4,4'-DDT	4 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ALDRIN	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
ALPHA-BHC	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
ALPHA-CHLORDANE	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
AROCLOR-1016	40 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg
AROCLOR-1221	81 UJ	µg/kg	80 UJ	µg/kg	77 UJ	µg/kg	83 UJ	µg/kg
AROCLOR-1232	40 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg
AROCLOR-1242	40 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or D e sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB04-0-2		30SB04-6-7		30SB1-10-12		30SB1-120	
LAB ID NUMBER	34799012		74799013		34607009		34617001	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		12/6/92		12/8/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248	40 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg
AROCLOR-1254	40 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg
AROCLOR-1260	40 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg
BETA-BHC	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
DELTA-BHC	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
DIELDRIN	4 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDOSULFAN I	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
ENDOSULFAN II	4 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDOSULFAN SULFATE	4 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDRIN	4 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDRIN ALDEHYDE	4 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDRIN KETONE	4 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
GAMMA-BHC (LINDANE)	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
GAMMA-CHLORDANE	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
HEPTACHLOR	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	20 UJ	µg/kg	20 UJ	µg/kg	21 UJ	µg/kg
TOXAPHENE	200 UJ	µg/kg	200 UJ	µg/kg	200 UJ	µg/kg	210 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	855	mg/kg	21200	mg/kg	5300	mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	12000	mg/kg	6550	mg/kg	999	mg/kg	1270	mg/kg
ANTIMONY	5.9 U	mg/kg	6 U	mg/kg	2.8 U	mg/kg	3 U	mg/kg
ARSENIC	5.2	mg/kg	0.67 J	mg/kg	1 J	mg/kg	0.17 U	mg/kg
BARIUM	10 J	mg/kg	8.4 J	mg/kg	0.8 J	mg/kg	3.3 J	mg/kg
BERYLLIUM	0.09 J	mg/kg	0.07 U	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg
CADMIUM	0.95	mg/kg	0.97 U	mg/kg	0.27 U	mg/kg	0.71 J	mg/kg
CALCIUM	137 J	mg/kg	190 J	mg/kg	250 J	mg/kg	175 J	mg/kg
CHROMIUM	14.8	mg/kg	9.5	mg/kg	2.2 J	mg/kg	4.4	mg/kg
COBALT	2 J	mg/kg	1 J	mg/kg	1.3 U	mg/kg	1.4 U	mg/kg
COPPER	1.8 J	mg/kg	1.1 J	mg/kg	1.9 J	mg/kg	3 J	mg/kg
CYANIDE	0.49 J	mg/kg	0.51 J	mg/kg	0.17 U	mg/kg	0.19 U	mg/kg
IRON	16300	mg/kg	12400	mg/kg	2390	mg/kg	17800	mg/kg
LEAD	66	mg/kg	22	mg/kg	1.5	mg/kg	1.4	mg/kg
MAGNESIUM	61.2 J	mg/kg	36 J	mg/kg	22.1 J	mg/kg	50.5 J	mg/kg
MANGANESE	15.9	mg/kg	26.3	mg/kg	2.4 J	mg/kg	4.4	mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB04-0-2		30SB04-5-7		30SB1-10-12		30SB1-120	
LAB ID NUMBER	34799012		74799013		34607009		34617001	
SITE	30		30		30		30	
DATE SAMPLED	1/4/93		1/4/93		12/6/92		12/8/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY	0.02 U	mg/kg	0.03 J	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	3 U	mg/kg	3 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg
POTASSIUM	202 J	mg/kg	126 U	mg/kg	98.2 J	mg/kg	135 J	mg/kg
SELENIUM	2.1	mg/kg	0.85 U	mg/kg	0.11 U	mg/kg	0.4 J	mg/kg
SILVER	0.77 J	mg/kg	0.94 J	mg/kg	0.48 U	mg/kg	0.52 U	mg/kg
SODIUM	13.4 U	mg/kg	13.6 U	mg/kg	199 J	mg/kg	257 J	mg/kg
THALLIUM	0.53 U	mg/kg	0.54 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg
VANADIUM	44.6	mg/kg	32.6	mg/kg	11.5	mg/kg	12.3 J	mg/kg
ZINC	3.1 J	mg/kg	1.2 J	mg/kg	2 J	mg/kg	10.5 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-15-17		30SB1-2-4		30SB1-2-4A		30SB1-35-37	
LAB ID NUMBER	34607010		34607006		34607007		34607013	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-BUTANONE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-HEXANONE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ACETONE	53 J	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg
BENZENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOFORM	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOMETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROFORM	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	13 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg
STYRENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TOLUENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	53 U	µg/kg	38	µg/kg	41	µg/kg	11 U	µg/kg
VINYL CHLORIDE	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	53 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg

Blank space indicates chemical not analyzed.
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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-15-17		30SB1-2-4		30SB1-2-4A		30SB1-35-37	
LAB ID NUMBER	34607010		34607006		34607007		34607013	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,3-DICHLOROBENZENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,4-DICHLOROBENZENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4,5-TRICHLOROPHENOL	850 U	µg/kg	990 U	µg/kg	920 U	µg/kg	840 U	µg/kg
2,4,6-TRICHLOROPHENOL	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DICHLOROPHENOL	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DIMETHYLPHENOL	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DINITROPHENOL	850 U	µg/kg	990 U	µg/kg	920 U	µg/kg	840 U	µg/kg
2,4-DINITROTOLUENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,6-DINITROTOLUENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-CHLORONAPHTHALENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-CHLOROPHENOL	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-METHYLNAPHTHALENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-METHYLPHENOL	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-NITROANILINE	850 U	µg/kg	990 U	µg/kg	920 U	µg/kg	840 U	µg/kg
2-NITROPHENOL	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
3,3'-DICHLOROBENZIDINE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
3-NITROANILINE	850 U	µg/kg	990 U	µg/kg	920 U	µg/kg	840 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	850 U	µg/kg	990 U	µg/kg	920 U	µg/kg	840 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-CHLOROANILINE	350 UJ	µg/kg	410 UJ	µg/kg	380 UJ	µg/kg	350 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-METHYLPHENOL	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-NITROANILINE	850 U	µg/kg	990 U	µg/kg	920 U	µg/kg	840 U	µg/kg
4-NITROPHENOL	850 U	µg/kg	990 U	µg/kg	920 U	µg/kg	840 U	µg/kg
ACENAPHTHENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ACENAPHTHYLENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ANTHRACENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(A)ANTHRACENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(A)PYRENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(B)FLUORANTHENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(G,H,I)PERYLENE	350 U	µg/kg	410 U	µg/kg	92 J	µg/kg	150 J	µg/kg
BENZO(K)FLUORANTHENE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	350 U	µg/kg	410 U	µg/kg	380 U	µg/kg	350 U	µg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-15-17		30SB1-2-4		30SB1-2-4A		30SB1-35-37	
LAB ID NUMBER	34607010		34607006		34607007		34607013	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	350 UJ	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BUTYLBENZYL PHTHALATE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
CARBAZOLE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
CHRYSENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DI-N-BUTYL PHTHALATE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DI-N-OCTYL PHTHALATE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DIBENZO(A,H)ANTHRACENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DIBENZOFURAN	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DIETHYL PHTHALATE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DIMETHYL PHTHALATE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
FLUORANTHENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
FLUORENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
HEXACHLOROBENZENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
HEXACHLOROBUTADIENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	350 UJ	μg/kg	410 UJ	μg/kg	380 UJ	μg/kg	350 U	μg/kg
HEXACHLOROETHANE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
INDENO(1,2,3-CD)PYRENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
ISOPHORONE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
N-NITROSODIPHENYLAMINE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
NAPHTHALENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
NITROBENZENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
PENTACHLOROPHENOL	850 UJ	μg/kg	990 UJ	μg/kg	920 UJ	μg/kg	840 UJ	μg/kg
PHENANTHRENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
PHENOL	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
PYRENE	350 U	μg/kg	410 U	μg/kg	380 U	μg/kg	350 U	μg/kg
PESTICIDES/PCBs								
4,4'-DDD	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
4,4'-DDE	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
4,4'-DDT	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
ALDRIN	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
ALPHA-BHC	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
ALPHA-CHLORDANE	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
AROCLOR-1016	35 UJ	μg/kg	41 UJ	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg
AROCLOR-1221	71 UJ	μg/kg	83 UJ	μg/kg	77 UJ	μg/kg	71 UJ	μg/kg
AROCLOR-1232	35 UJ	μg/kg	41 UJ	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg
AROCLOR-1242	35 UJ	μg/kg	41 UJ	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-15-17		30SB1-2-4		30SB1-2-4A		30SB1-35-37	
LAB ID NUMBER	34607010		34607006		34607007		34607013	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248	35 UJ	μg/kg	41 UJ	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg
AROCLOR-1254	35 UJ	μg/kg	41 UJ	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg
AROCLOR-1260	35 UJ	μg/kg	41 UJ	μg/kg	38 UJ	μg/kg	35 UJ	μg/kg
BETA-BHC	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
DELTA-BHC	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
DIELDRIN	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
ENDOSULFAN I	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
ENDOSULFAN II	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
ENDOSULFAN SULFATE	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
ENDRIN	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
ENDRIN ALDEHYDE	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
ENDRIN KETONE	3.5 UJ	μg/kg	4.1 UJ	μg/kg	3.8 UJ	μg/kg	3.5 UJ	μg/kg
GAMMA-BHC (LINDANE)	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
GAMMA-CHLORDANE	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
HEPTACHLOR	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
HEPTACHLOR EPOXIDE	1.8 UJ	μg/kg	2.1 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
METHOXYCHLOR	18 UJ	μg/kg	21 UJ	μg/kg	20 UJ	μg/kg	18 UJ	μg/kg
TOXAPHENE	180 UJ	μg/kg	210 UJ	μg/kg	200 UJ	μg/kg	180 UJ	μg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	460	mg/kg	244	mg/kg	122	mg/kg	21.6	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	814	mg/kg	14600	mg/kg	15700	mg/kg	138	mg/kg
ANTIMONY	2.6 U	mg/kg	3 U	mg/kg	2.8 U	mg/kg	2.6 U	mg/kg
ARSENIC	0.19 J	mg/kg	2.5	mg/kg	1.5 J	mg/kg	0.15 U	mg/kg
BARIUM	0.51 J	mg/kg	15.8 J	mg/kg	17.4 J	mg/kg	0.37 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.12 U	mg/kg	0.12 U	mg/kg	0.11 U	mg/kg
CADMIUM	0.26 U	mg/kg	0.5 J	mg/kg	0.65 J	mg/kg	0.25 U	mg/kg
CALCIUM	116 J	mg/kg	567 J	mg/kg	548 J	mg/kg	118 J	mg/kg
CHROMIUM	2.7	mg/kg	14.6	mg/kg	15.3	mg/kg	1.1 J	mg/kg
COBALT	1.2 U	mg/kg	1.4 U	mg/kg	1.3 U	mg/kg	1.2 U	mg/kg
COPPER	0.98 J	mg/kg	4.8 J	mg/kg	5 J	mg/kg	0.62 J	mg/kg
CYANIDE	0.16 U	mg/kg	0.19 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg
IRON	846	mg/kg	12800	mg/kg	13800	mg/kg	199	mg/kg
LEAD	0.36 J	mg/kg	7.7	mg/kg	7.8	mg/kg	0.23 J	mg/kg
MAGNESIUM	10.4 J	mg/kg	180 J	mg/kg	191 J	mg/kg	11.3 J	mg/kg
MANGANESE	2.4 J	mg/kg	82.3	mg/kg	140	mg/kg	0.96 J	mg/kg

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A or [illegible] the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-15-17		30SB1-2-4		30SB1-2-4A		30SB1-35-37	
LAB ID NUMBER	34607010		34607006		34607007		34607013	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY	0.03 U	mg/kg	0.04 J	mg/kg	0.05 J	mg/kg	0.03 U	mg/kg
NICKEL	1.6 U	mg/kg	1.9 U	mg/kg	2.3 J	mg/kg	1.6 U	mg/kg
POTASSIUM	65.9 J	mg/kg	171 J	mg/kg	215 J	mg/kg	49.2 J	mg/kg
SELENIUM	0.11 U	mg/kg	0.76 J	mg/kg	0.15 J	mg/kg	0.11 U	mg/kg
SILVER	0.45 U	mg/kg	0.52	mg/kg	0.48 U	mg/kg	0.44 U	mg/kg
SODIUM	172 J	mg/kg	201 J	mg/kg	168 J	mg/kg	203 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg
VANADIUM	3.1 J	mg/kg	34.6	mg/kg	36.2	mg/kg	0.77 J	mg/kg
ZINC	1.9 J	mg/kg	7.7	mg/kg	6.8	mg/kg	3 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-5-7		30SB1-60-62		30SB4-10-12		30SB4-15-17	
LAB ID NUMBER	34607008		34607014		34807008		30SB4-15-17	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
1,1,2-TRICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
1,1-DICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
1,1-DICHLOROETHENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
1,2-DICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
1,2-DICHLOROPROPANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
2-BUTANONE	12 U	μg/kg	11 U	μg/kg	6 J	μg/kg	1300 U	μg/kg
2-HEXANONE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
4-METHYL-2-PENTANONE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
ACETONE	64 J	μg/kg	11 UJ	μg/kg	86	μg/kg	1300 UJ	μg/kg
BENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
BROMODICHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
BROMOFORM	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
BROMOMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
CARBON DISULFIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
CARBON TETRACHLORIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
CHLOROBENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
CHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
CHLOROFORM	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
CHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 UJ	μg/kg
CIS-1,3-DICHLOROPROPENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
DIBROMOCHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
ETHYLBENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE	12 UJ	μg/kg	11 UJ	μg/kg	11 U	μg/kg	1300 U	μg/kg
STYRENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
TETRACHLOROETHENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
TOLUENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
TRICHLOROETHENE	160	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
VINYL CHLORIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
XYLENES, TOTAL	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	1300 U	μg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	380 U	μg/kg	350 U	μg/kg	390 U	μg/kg	1700 U	μg/kg

Blank space indicates chemical not analyzed.
A or [illegible] e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-5-7		30SB1-60-62		30SB4-10-12		30SB4-15-17	
LAB ID NUMBER	34607008		34607014		34807008		30SB4-15-17	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
1,3-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
1,4-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2,4,5-TRICHLOROPHENOL	930 U	µg/kg	850 U	µg/kg	940 U	µg/kg	4200 U	µg/kg
2,4,6-TRICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2,4-DICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2,4-DIMETHYLPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2,4-DINITROPHENOL	930 U	µg/kg	850 U	µg/kg	940 UJ	µg/kg	4200 UJ	µg/kg
2,4-DINITROTOLUENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2,6-DINITROTOLUENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2-CHLORONAPHTHALENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2-CHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2-METHYLNAPHTHALENE	380 U	µg/kg	350 U	µg/kg	42 J	µg/kg	1700 U	µg/kg
2-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
2-NITROANILINE	930 U	µg/kg	850 U	µg/kg	940 U	µg/kg	4200 U	µg/kg
2-NITROPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
3,3'-DICHLOROBENZIDINE	380 U	µg/kg	350 U	µg/kg	390 UJ	µg/kg	1700 UJ	µg/kg
3-NITROANILINE	930 U	µg/kg	850 U	µg/kg	940 U	µg/kg	4200 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	930 U	µg/kg	850 U	µg/kg	940 U	µg/kg	4200 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
4-CHLOROANILINE	380 UJ	µg/kg	350 UJ	µg/kg	390 UJ	µg/kg	1700 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
4-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
4-NITROANILINE	930 U	µg/kg	850 U	µg/kg	940 UJ	µg/kg	4200 UJ	µg/kg
4-NITROPHENOL	930 U	µg/kg	850 U	µg/kg	940 UJ	µg/kg	4200 UJ	µg/kg
ACENAPHTHENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
ACENAPHTHYLENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
ANTHRACENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
BENZO(A)ANTHRACENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
BENZO(A)PYRENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
BENZO(B)FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
BENZO(G,H,I)PERYLENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
BENZO(K)FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg

Blank space indicates chemical not analyzed.
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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-5-7		30SB1-60-62		30SB4-10-12		30SB4-15-17	
LAB ID NUMBER	34607008		34607014		34807008		30SB4-15-17	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 UJ	µg/kg	1700 UJ	µg/kg
BUTYLBENZYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 UJ	µg/kg	1700 UJ	µg/kg
CARBAZOLE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
CHRYSENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
DI-N-BUTYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
DI-N-OCTYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 UJ	µg/kg	1700 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
DIBENZOFURAN	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
DIETHYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
DIMETHYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
FLUORENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
HEXACHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
HEXACHLOROBUTADIENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	380 UJ	µg/kg	350 UJ	µg/kg	390 U	µg/kg	1700 U	µg/kg
HEXACHLOROETHANE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
INDENO(1,2,3-CD)PYRENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
ISOPHORONE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
N-NITROSODIPHENYLAMINE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
NAPHTHALENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
NITROBENZENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
PENTACHLOROPHENOL	930 UJ	µg/kg	850 UJ	µg/kg	940 U	µg/kg	4200 U	µg/kg
PHENANTHRENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
PHENOL	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	1700 U	µg/kg
PYRENE	380 U	µg/kg	350 U	µg/kg	390 U	µg/kg	330 J	µg/kg
PESTICIDES/PCBs								
4,4'-DDD	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
4,4'-DDE	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
4,4'-DDT	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
ALDRIN	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
ALPHA-BHC	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
ALPHA-CHLORDANE	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
AROCLOR-1016	38 UJ	µg/kg	36 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1221	78 UJ	µg/kg	73 UJ	µg/kg	79 UJ	µg/kg	71 UJ	µg/kg
AROCLOR-1232	38 UJ	µg/kg	36 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1242	38 UJ	µg/kg	36 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-5-7		30SB1-60-62		30SB4-10-12		30SB4-15-17	
LAB ID NUMBER	34607008		34607014		34807008		30SB4-15-17	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248	38 UJ	µg/kg	36 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1254	38 UJ	µg/kg	36 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1260	38 UJ	µg/kg	36 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg
BETA-BHC	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
DELTA-BHC	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
DIELDRIN	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
ENDOSULFAN I	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
ENDOSULFAN II	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
ENDOSULFAN SULFATE	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN ALDEHYDE	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN KETONE	3.8 UJ	µg/kg	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg
GAMMA-BHC (LINDANE)	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
GAMMA-CHLORDANE	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	18 UJ	µg/kg	20 UJ	µg/kg	18 UJ	µg/kg
TOXAPHENE	200 UJ	µg/kg	180 UJ	µg/kg	200 UJ	µg/kg	180 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	65.8	mg/kg	5.7	mg/kg	89.7	mg/kg	3760	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	11000	mg/kg	618	mg/kg	15900	mg/kg	115	mg/kg
ANTIMONY	2.8 U	mg/kg	2.6 U	mg/kg	5.7 U	mg/kg	5.3 U	mg/kg
ARSENIC	1.3 J	mg/kg	0.15 U	mg/kg	2.1 J	mg/kg	0.22 UJ	mg/kg
BARIUM	17.1 J	mg/kg	0.6 J	mg/kg	4.5 J	mg/kg	0.2 J	mg/kg
BERYLLIUM	0.12 U	mg/kg	0.11 U	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg
CADMIUM	0.4 J	mg/kg	0.25 U	mg/kg	0.92 U	mg/kg	0.85 U	mg/kg
CALCIUM	787 J	mg/kg	108 J	mg/kg	99.5 J	mg/kg	139 J	mg/kg
CHROMIUM	11.1	mg/kg	1.5 J	mg/kg	15.6	mg/kg	1.5 J	mg/kg
COBALT	1.8 J	mg/kg	1.2 U	mg/kg	1.2 J	mg/kg	0.48 U	mg/kg
COPPER	3.9 J	mg/kg	0.83 J	mg/kg	4.4 J	mg/kg	4.6 J	mg/kg
CYANIDE	0.17 U	mg/kg	0.16 U	mg/kg	0.45 J	mg/kg	0.48 J	mg/kg
IRON	10400	mg/kg	104	mg/kg	13900	mg/kg	231	mg/kg
LEAD	8.1	mg/kg	0.3 J	mg/kg	4	mg/kg	0.27 U	mg/kg
MAGNESIUM	146 J	mg/kg	13.5 J	mg/kg	56.6 J	mg/kg	70.7 J	mg/kg
MANGANESE	177	mg/kg	1.2 J	mg/kg	10	mg/kg	0.7 J	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB1-5-7		30SB1-60-62		30SB4-10-12		30SB4-15-17	
LAB ID NUMBER	34607008		34607014		34807008		30SB4-15-17	
SITE	30		30		30		30	
DATE SAMPLED	12/6/92		12/6/92		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY	0.04 J	mg/kg	0.03 U	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg
NICKEL	1.8 U	mg/kg	1.6 U	mg/kg	2.9 U	mg/kg	2.7 U	mg/kg
POTASSIUM	97.8 J	mg/kg	83.8 J	mg/kg	119 U	mg/kg	110 U	mg/kg
SELENIUM	0.18 J	mg/kg	0.11 U	mg/kg	0.97 J	mg/kg	0.46 U	mg/kg
SILVER	0.49 U	mg/kg	0.45 U	mg/kg	0.56 U	mg/kg	0.52 U	mg/kg
SODIUM	214 J	mg/kg	134 J	mg/kg	12.9 U	mg/kg	11.9 U	mg/kg
THALLIUM	0.16 U	mg/kg	0.15 U	mg/kg	0.59 U	mg/kg	0.54 U	mg/kg
VANADIUM	27.3	mg/kg	0.87 J	mg/kg	39.7	mg/kg	0.99 J	mg/kg
ZINC	6.7	mg/kg	1.4 J	mg/kg	0.86 J	mg/kg	2.3 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

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A or ʳ ʰhe sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB4-25-27		30SB5-0-2		30SB5-16-17		30SB6-0-2	
LAB ID NUMBER	34807010		34807023		34807024		34807021	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2-TRICHLOROETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROPROPANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-BUTANONE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-HEXANONE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
4-METHYL-2-PENTANONE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ACETONE	52	μg/kg	32	μg/kg	27	μg/kg	60	μg/kg
BENZENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMODICHLOROMETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOFORM	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOMETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON DISULFIDE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON TETRACHLORIDE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROBENZENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROFORM	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROMETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CIS-1,3-DICHLOROPROPENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
DIBROMOCHLOROMETHANE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ETHYLBENZENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
STYRENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TETRACHLOROETHENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TOLUENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRICHLOROETHENE	10 U	μg/kg	5 J	μg/kg	11 U	μg/kg	11 U	μg/kg
VINYL CHLORIDE	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
XYLENES, TOTAL	10 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB4-25-27		30SB5-0-2		30SB5-15-17		30SB6-0-2	
LAB ID NUMBER	34807010		34807023		34807024		34807021	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
1,3-DICHLOROBENZENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
1,4-DICHLOROBENZENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2,4,5-TRICHLOROPHENOL	830 U	μg/kg	940 U	μg/kg	840 U	μg/kg	910 U	μg/kg
2,4,6-TRICHLOROPHENOL	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2,4-DICHLOROPHENOL	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2,4-DIMETHYLPHENOL	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2,4-DINITROPHENOL	830 UJ	μg/kg	940 U	μg/kg	840 U	μg/kg	910 U	μg/kg
2,4-DINITROTOLUENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2,6-DINITROTOLUENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2-CHLORONAPHTHALENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2-CHLOROPHENOL	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2-METHYLNAPHTHALENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2-METHYLPHENOL	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
2-NITROANILINE	830 U	μg/kg	940 U	μg/kg	840 U	μg/kg	910 U	μg/kg
2-NITROPHENOL	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
3,3'-DICHLOROBENZIDINE	340 UJ	μg/kg	390 UJ	μg/kg	350 UJ	μg/kg	370 UJ	μg/kg
3-NITROANILINE	830 U	μg/kg	940 U	μg/kg	840 U	μg/kg	910 U	μg/kg
4,6-DINITRO-2-METHYLPHENOL	830 U	μg/kg	940 U	μg/kg	840 U	μg/kg	910 U	μg/kg
4-BROMOPHENYL PHENYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
4-CHLORO-3-METHYLPHENOL	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
4-CHLOROANILINE	340 UJ	μg/kg	390 UJ	μg/kg	350 UJ	μg/kg	370 UJ	μg/kg
4-CHLOROPHENYL PHENYL ETHER	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
4-METHYLPHENOL	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
4-NITROANILINE	830 UJ	μg/kg	940 U	μg/kg	840 U	μg/kg	910 U	μg/kg
4-NITROPHENOL	830 UJ	μg/kg	940 U	μg/kg	840 U	μg/kg	910 U	μg/kg
ACENAPHTHENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
ACENAPHTHYLENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
ANTHRACENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
BENZO(A)ANTHRACENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
BENZO(A)PYRENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
BENZO(B)FLUORANTHENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
BENZO(G,H,I)PERYLENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
BENZO(K)FLUORANTHENE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	340 U	μg/kg	390 U	μg/kg	350 U	μg/kg	370 U	μg/kg

Blank space indicates chemical not analyzed.
A or [illegible] the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB4-25-27		30SB5-0-2		30SB6-15-17		30SB6-0-2	
LAB ID NUMBER	34807010		34807023		34807024		34807021	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	340 UJ	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	340 UJ	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
CARBAZOLE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
CHRYSENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	340 UJ	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIBENZOFURAN	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	36 J	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
FLUORANTHENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
FLUORENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
ISOPHORONE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
N-NITROSODIPHENYLAMINE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
NAPHTHALENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
NITROBENZENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	830 U	µg/kg	940 U	µg/kg	840 U	µg/kg	910 U	µg/kg
PHENANTHRENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PHENOL	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PYRENE	340 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PESTICIDES/PCBs								
4,4'-DDD	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
4,4'-DDE	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
4,4'-DDT	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
ALDRIN	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-BHC	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-CHLORDANE	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
AROCLOR-1016	34 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1221	70 UJ	µg/kg	79 UJ	µg/kg	71 UJ	µg/kg	76 UJ	µg/kg
AROCLOR-1232	34 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1242	34 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg

Blank space indicates chemical not analyzed.
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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB4-25-27		30SB5-0-2		30SB5-16-17		30SB6-0-2	
LAB ID NUMBER	34807010		34807023		34807024		34807021	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		1/5/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248	34 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1254	34 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1260	34 UJ	µg/kg	39 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg
BETA-BHC	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
DELTA-BHC	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
DIELDRIN	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN I	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
ENDOSULFAN II	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN SULFATE	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN ALDEHYDE	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN KETONE	3.4 UJ	µg/kg	3.9 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
GAMMA-CHLORDANE	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
METHOXYCHLOR	18 UJ	µg/kg	20 UJ	µg/kg	18 UJ	µg/kg	19 UJ	µg/kg
TOXAPHENE	180 UJ	µg/kg	200 UJ	µg/kg	180 UJ	µg/kg	190 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	97.8	mg/kg	1.9 U	mg/kg	2.7	mg/kg	20.8	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	105	mg/kg	12200	mg/kg	2720	mg/kg	12600	mg/kg
ANTIMONY	5.1 U	mg/kg	5.7 U	mg/kg	5.7 U	mg/kg	5.6 U	mg/kg
ARSENIC	0.32 UJ	mg/kg	2.8	mg/kg	2 J	mg/kg	4.4	mg/kg
BARIUM	0.1 U	mg/kg	22.3 J	mg/kg	1.8 J	mg/kg	20.4 J	mg/kg
BERYLLIUM	0.06 U	mg/kg	0.13 J	mg/kg	0.06 U	mg/kg	0.14 J	mg/kg
CADMIUM	0.82 U	mg/kg	0.91 U	mg/kg	0.91 U	mg/kg	0.9 U	mg/kg
CALCIUM	16.5 J	mg/kg	1850	mg/kg	7.6 U	mg/kg	262 J	mg/kg
CHROMIUM	1.7 J	mg/kg	12.1	mg/kg	4.4	mg/kg	10.5	mg/kg
COBALT	0.47 U	mg/kg	2.3 J	mg/kg	0.52 U	mg/kg	4.4 J	mg/kg
COPPER	0.75 J	mg/kg	2.5 J	mg/kg	0.48 J	mg/kg	1.4 J	mg/kg
CYANIDE	0.48 J	mg/kg	0.53 J	mg/kg	0.46 J	mg/kg	0.55 J	mg/kg
IRON	114	mg/kg	11100	mg/kg	4500	mg/kg	12700	mg/kg
LEAD	0.21 U	mg/kg	16	mg/kg	1.9	mg/kg	9.5	mg/kg
MAGNESIUM	7.4 U	mg/kg	126 J	mg/kg	8.9 J	mg/kg	87.2 J	mg/kg
MANGANESE	0.12 U	mg/kg	558	mg/kg	9	mg/kg	336	mg/kg

Blank space indicates chemical not analyzed.
A or ' 'he sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB4-25-27		30SB5-0-2		30SB5-16-17		30SB6-0-2	
LAB ID NUMBER	34807010		34807023		34807024		34807021	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/6/93		1/6/93		1/6/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY	0.02 U	mg/kg	0.06	mg/kg	0.04 J	mg/kg	0.04 J	mg/kg
NICKEL	2.6 U	mg/kg	3 J	mg/kg	2.9 U	mg/kg	2.8 U	mg/kg
POTASSIUM	107 U	mg/kg	127 J	mg/kg	119 U	mg/kg	117 U	mg/kg
SELENIUM	0.44 U	mg/kg	0.49 U	mg/kg	4.9 U	mg/kg	1.4	mg/kg
SILVER	0.5 U	mg/kg	0.56 U	mg/kg	0.56 U	mg/kg	0.55 U	mg/kg
SODIUM	11.6 U	mg/kg	14.3 J	mg/kg	12.9 U	mg/kg	12.7 U	mg/kg
THALLIUM	0.53 U	mg/kg	0.59 U	mg/kg	0.59 U	mg/kg	0.58 U	mg/kg
VANADIUM	1.1 J	mg/kg	29.3	mg/kg	12.4	mg/kg	33	mg/kg
ZINC	0.56 J	mg/kg	4.6	mg/kg	0.5 J	mg/kg	2.2 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB6-10-12		30SB7-0-2		30SB7-10-12		W30SB00801	
LAB ID NUMBER	34807022		34807011		34807012		9803153 - 15	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
1,1,2-TRICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
1,1-DICHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
1,1-DICHLOROETHENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
1,2-DICHLOROETHANE	12 U	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	6 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
1,2-DICHLOROPROPANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
2-BUTANONE	12 U	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	6 UR	μg/kg
2-HEXANONE	12 U	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	6 UJ	μg/kg
4-METHYL-2-PENTANONE	12 U	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	6 U	μg/kg
ACETONE	45	μg/kg	11 U	μg/kg	380	μg/kg	11 J	μg/kg
BENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
BROMODICHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
BROMOFORM	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
BROMOMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
CARBON DISULFIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
CARBON TETRACHLORIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
CHLOROBENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
CHLOROETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
CHLOROFORM	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
CHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
CIS-1,3-DICHLOROPROPENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
DIBROMOCHLOROMETHANE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
ETHYLBENZENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg	6 U	μg/kg
METHYLENE CHLORIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	8 U	μg/kg
STYRENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
TETRACHLOROETHENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
TOLUENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
TRICHLOROETHENE	12 U	μg/kg	30	μg/kg	11 U	μg/kg	6 U	μg/kg
VINYL CHLORIDE	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
XYLENES, TOTAL	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg	6 U	μg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg

Blank space indicates chemical not analyzed.
A or D [illegible] e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB6-10-12		30SB7-0-2		30SB7-10-12		W30SB00801	
LAB ID NUMBER	34807022		34807011		34807012		9803153-15	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
1,3-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
1,4-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2,4,5-TRICHLOROPHENOL	930 U	µg/kg	910 U	µg/kg	920 U	µg/kg	410 U	µg/kg
2,4,6-TRICHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2,4-DICHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2,4-DIMETHYLPHENOL	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2,4-DINITROPHENOL	930 U	µg/kg	910 U	µg/kg	920 U	µg/kg	410 U	µg/kg
2,4-DINITROTOLUENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2,6-DINITROTOLUENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2-CHLORONAPHTHALENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2-CHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2-METHYLNAPHTHALENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
2-NITROANILINE	930 U	µg/kg	910 U	µg/kg	920 U	µg/kg	410 U	µg/kg
2-NITROPHENOL	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
3,3'-DICHLOROBENZIDINE	380 UJ	µg/kg	370 UJ	µg/kg	380 UJ	µg/kg	410 U	µg/kg
3-NITROANILINE	930 U	µg/kg	910 U	µg/kg	920 U	µg/kg	410 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	930 U	µg/kg	910 U	µg/kg	920 U	µg/kg	410 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg	410 U	µg/kg
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
4-CHLOROANILINE	380 UJ	µg/kg	370 U	µg/kg	380 U	µg/kg	410 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
4-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
4-NITROANILINE	930 U	µg/kg	910 U	µg/kg	920 U	µg/kg	410 U	µg/kg
4-NITROPHENOL	930 U	µg/kg	910 U	µg/kg	920 U	µg/kg	410 UJ	µg/kg
ACENAPHTHENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
ACENAPHTHYLENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
ANTHRACENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
BENZO(A)ANTHRACENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
BENZO(A)PYRENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	120 U	µg/kg
BENZO(B)FLUORANTHENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
BENZO(G,H,I)PERYLENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
BENZO(K)FLUORANTHENE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	µg/kg	370 U	µg/kg	380 U	µg/kg	410 U	µg/kg

Blank space indicates chemical not analyzed.
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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB6-10-12		30SB7-0-2		30SB7-10-12		W30SB00801	
LAB ID NUMBER	34807022		34807011		34807012		9803153-15	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	380 UJ	μg/kg	370 UJ	μg/kg	380 U	μg/kg	410 UJ	μg/kg
BUTYLBENZYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 UJ	μg/kg
CARBAZOLE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
CHRYSENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
DI-N-BUTYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
DI-N-OCTYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 UJ	μg/kg
DIBENZO(A,H)ANTHRACENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	120 U	μg/kg
DIBENZOFURAN	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
DIETHYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
DIMETHYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
FLUORANTHENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
FLUORENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
HEXACHLOROBENZENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 UJ	μg/kg
HEXACHLOROBUTADIENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
HEXACHLOROETHANE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
INDENO(1,2,3-CD)PYRENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
ISOPHORONE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	25 U	μg/kg
N-NITROSODIPHENYLAMINE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
NAPHTHALENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
NITROBENZENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
PENTACHLOROPHENOL	930 U	μg/kg	910 U	μg/kg	920 U	μg/kg	410 U	μg/kg
PHENANTHRENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
PHENOL	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
PYRENE	380 U	μg/kg	370 U	μg/kg	380 U	μg/kg	410 U	μg/kg
PESTICIDES/PCBs								
4,4'-DDD	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg
4,4'-DDE	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg
4,4'-DDT	3.8 UJ	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	4.1 UJ	μg/kg
ALDRIN	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg
ALPHA-BHC	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg
ALPHA-CHLORDANE	2 UJ	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2.1 UJ	μg/kg
AROCLOR-1016	38 UJ	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg
AROCLOR-1221	78 UJ	μg/kg	76 UJ	μg/kg	77 UJ	μg/kg	83 UJ	μg/kg
AROCLOR-1232	38 UJ	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg
AROCLOR-1242	38 UJ	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	41 UJ	μg/kg

Blank space indicates chemical not analyzed.
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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB6-10-12		30SB7-0-2		30SB7-10-12		W30SB00801	
LAB ID NUMBER	34807022		34807011		34807012		9803163 - 15	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg
AROCLOR-1254	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg
AROCLOR-1260	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	41 UJ	µg/kg
BETA-BHC	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
DELTA-BHC	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
DIELDRIN	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDOSULFAN I	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
ENDOSULFAN II	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDOSULFAN SULFATE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDRIN	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDRIN ALDEHYDE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
ENDRIN KETONE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	4.1 UJ	µg/kg
GAMMA-BHC (LINDANE)	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
GAMMA-CHLORDANE	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
HEPTACHLOR	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2.1 UJ	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	19 UJ	µg/kg	20 UJ	µg/kg	21 UJ	µg/kg
TOXAPHENE	200 UJ	µg/kg	190 UJ	µg/kg	200 UJ	µg/kg	210 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	1.9 U	mg/kg	2.7	mg/kg	4.3	mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg	9.6 U	mg/kg
METALS								
ALUMINUM	3230	mg/kg	12200	mg/kg	5720	mg/kg	392	mg/kg
ANTIMONY	5.7 U	mg/kg	5.7 U	mg/kg	5.7 U	mg/kg	0.21 UJ	mg/kg
ARSENIC	8.6	mg/kg	3.3	mg/kg	6	mg/kg	0.43 U	mg/kg
BARIUM	4.7 J	mg/kg	26.1 J	mg/kg	6.8 J	mg/kg	0.43 U	mg/kg
BERYLLIUM	0.06 U	mg/kg	0.13 J	mg/kg	0.06 U	mg/kg	0.13 U	mg/kg
CADMIUM	0.92 U	mg/kg	0.91 U	mg/kg	0.91 U	mg/kg	0.13 U	mg/kg
CALCIUM	7.6 U	mg/kg	976 J	mg/kg	65.4 J	mg/kg	42.6 U	mg/kg
CHROMIUM	7.5	mg/kg	8.4	mg/kg	15.4	mg/kg	3.1	mg/kg
COBALT	2.3 J	mg/kg	2.4 J	mg/kg	1.9 J	mg/kg	0.21 U	mg/kg
COPPER	0.39 U	mg/kg	2.7 J	mg/kg	0.39 U	mg/kg	0.21 U	mg/kg
CYANIDE	0.53 J	mg/kg	0.6 J	mg/kg	0.52 J	mg/kg		mg/kg
IRON	19800	mg/kg	8250	mg/kg	15900	mg/kg	67	mg/kg
LEAD	9.4	mg/kg	7.4	mg/kg	7.1	mg/kg	0.51	mg/kg
MAGNESIUM	43.9 J	mg/kg	110 J	mg/kg	49.7 J	mg/kg	3.6 U	mg/kg
MANGANESE	88.1	mg/kg	898	mg/kg	26.7	mg/kg	0.43	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	30SB6-10-12		30SB7-0-2		30SB7-10-12		W30SB00801	
LAB ID NUMBER	34807022		34807011		34807012		9803163 - 15	
SITE	30		30		30		30	
DATE SAMPLED	1/5/93		1/5/93		1/5/93		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY	0.02 J	mg/kg	0.05 J	mg/kg	0.02 J	mg/kg	0.03 U	mg/kg
NICKEL	2.9 U	mg/kg	3.3 J	mg/kg	2.9 U	mg/kg	0.35	mg/kg
POTASSIUM	120 U	mg/kg	185 J	mg/kg	118 U	mg/kg	8.6	mg/kg
SELENIUM	1.8	mg/kg	1.9	mg/kg	3.1	mg/kg	0.21 U	mg/kg
SILVER	0.84 J	mg/kg	0.56 U	mg/kg	0.56 U	mg/kg	0.13 U	mg/kg
SODIUM	12.9 U	mg/kg	13.7 J	mg/kg	12.8 U	mg/kg	21.3 U	mg/kg
THALLIUM	5.9 U	mg/kg	0.58 U	mg/kg	0.58 U	mg/kg	0.43 U	mg/kg
VANADIUM	40.4	mg/kg	21.1	mg/kg	43.9	mg/kg	0.35	mg/kg
ZINC	0.37 U	mg/kg	4.1 J	mg/kg	0.88 J	mg/kg	0.43 U	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D [illegible] sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB00901		W30SB00902		W30SB01001		W30SB01101	
LAB ID NUMBER	9803153 - 09		9803153 - 10		9803153 - 14		9803153 - 12	
SITE	30		30		30		30	
DATE SAMPLED	3/23/98		3/23/98		3/23/98		3/21/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,1,2-TRICHLOROETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,1-DICHLOROETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,1-DICHLOROETHENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,2-DICHLOROETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,2-DICHLOROPROPANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
2-BUTANONE	6 UR	μg/kg	5 UR	μg/kg	6 UR	μg/kg	6 UR	μg/kg
2-HEXANONE	6 U	μg/kg	5 U	μg/kg	6 UJ	μg/kg	6 U	μg/kg
4-METHYL-2-PENTANONE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
ACETONE	6 UJ	μg/kg	23 J	μg/kg	5 J	μg/kg	4 J	μg/kg
BENZENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
BROMODICHLOROMETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
BROMOFORM	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
BROMOMETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CARBON DISULFIDE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CARBON TETRACHLORIDE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CHLOROBENZENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CHLOROETHANE	6 UJ	μg/kg	5 UJ	μg/kg	6 U	μg/kg	6 UJ	μg/kg
CHLOROFORM	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CHLOROMETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CIS-1,3-DICHLOROPROPENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
DIBROMOCHLOROMETHANE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
ETHYLBENZENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
METHYL TERT-BUTYL ETHER	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
METHYLENE CHLORIDE	24 U	μg/kg	18 U	μg/kg	6 U	μg/kg	6 U	μg/kg
STYRENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
TETRACHLOROETHENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
TOLUENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
TRICHLOROETHENE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
VINYL CHLORIDE	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
XYLENES, TOTAL	6 U	μg/kg	5 U	μg/kg	6 U	μg/kg	6 U	μg/kg
SEMIVOLATILES								
1,2,4-TRICHLOROBENZENE	380 U	μg/kg	350 U	μg/kg	430 U	μg/kg	420 U	μg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB00901		W30SB00902		W30SB01001		W30SB01101	
LAB ID NUMBER	9803153 - 09		9803153 - 10		9803153 - 14		9803153 - 12	
SITE	30		30		30		30	
DATE SAMPLED	3/23/98		3/23/98		3/23/98		3/21/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
1,3-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
1,4-DICHLOROBENZENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2,4,5-TRICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2,4,6-TRICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2,4-DICHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2,4-DIMETHYLPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2,4-DINITROPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2,4-DINITROTOLUENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2,6-DINITROTOLUENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2-CHLORONAPHTHALENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2-CHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2-METHYLNAPHTHALENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2-NITROANILINE	380 UJ	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
2-NITROPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
3,3'-DICHLOROBENZIDINE	380 UJ	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
3-NITROANILINE	380 UJ	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
4-CHLOROANILINE	380 UJ	µg/kg	350 UJ	µg/kg	430 UJ	µg/kg	420 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
4-METHYLPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
4-NITROANILINE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
4-NITROPHENOL	380 UJ	µg/kg	350 UJ	µg/kg	430 UJ	µg/kg	420 UJ	µg/kg
ACENAPHTHENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
ACENAPHTHYLENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
ANTHRACENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
BENZO(A)ANTHRACENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	110 U	µg/kg	130 U	µg/kg	120 U	µg/kg
BENZO(B)FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
BENZO(G,H,I)PERYLENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
BENZO(K)FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB00901		W30SB00902		W30SB01001		W30SB01101	
LAB ID NUMBER	9803153 - 09		9803153 - 10		9803153 - 14		9803153 - 12	
SITE	30		30		30		30	
DATE SAMPLED	3/23/98		3/23/98		3/23/98		3/21/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	46 J	µg/kg	39 J	µg/kg	430 UJ	µg/kg	42 J	µg/kg
BUTYLBENZYL PHTHALATE	380 U	µg/kg	350 UJ	µg/kg	430 UJ	µg/kg	420 UJ	µg/kg
CARBAZOLE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
CHRYSENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
DI-N-BUTYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
DI-N-OCTYL PHTHALATE	380 U	µg/kg	350 UJ	µg/kg	430 UJ	µg/kg	420 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	110 U	µg/kg	130 U	µg/kg	120 U	µg/kg
DIBENZOFURAN	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
DIETHYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
DIMETHYL PHTHALATE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
FLUORANTHENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
FLUORENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
HEXACHLOROBENZENE	380 U	µg/kg	350 UJ	µg/kg	430 UJ	µg/kg	420 UJ	µg/kg
HEXACHLOROBUTADIENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
HEXACHLOROETHANE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
INDENO(1,2,3-CD)PYRENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
ISOPHORONE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	23 UJ	µg/kg	21 U	µg/kg	26 U	µg/kg	25 U	µg/kg
N-NITROSODIPHENYLAMINE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
NAPHTHALENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
NITROBENZENE	380 UJ	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
PENTACHLOROPHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
PHENANTHRENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
PHENOL	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
PYRENE	380 U	µg/kg	350 U	µg/kg	430 U	µg/kg	420 U	µg/kg
PESTICIDES/PCBs								
4,4'-DDD	3.8 UJ	µg/kg	3.5 U	µg/kg	4.3 U	µg/kg	4.2 U	µg/kg
4,4'-DDE	3.8 UJ	µg/kg	3.5 U	µg/kg	4.3 U	µg/kg	4.2 U	µg/kg
4,4'-DDT	3.8 UJ	µg/kg	3.5 UJ	µg/kg	4.3 UJ	µg/kg	4.2 UJ	µg/kg
ALDRIN	1.9 UJ	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
ALPHA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
ALPHA-CHLORDANE	1.9 U	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
AROCLOR-1016	38 U	µg/kg	35 U	µg/kg	43 U	µg/kg	42 U	µg/kg
AROCLOR-1221	76 U	µg/kg	70 U	µg/kg	86 U	µg/kg	84 U	µg/kg
AROCLOR-1232	38 U	µg/kg	35 U	µg/kg	43 U	µg/kg	42 U	µg/kg
AROCLOR-1242	38 U	µg/kg	35 U	µg/kg	43 U	µg/kg	42 U	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB00901		W30SB00902		W30SB01001		W30SB01101	
LAB ID NUMBER	9803153 - 09		9803153 - 10		9803153 - 14		9803153 - 12	
SITE	30		30		30		30	
DATE SAMPLED	3/23/98		3/23/98		3/23/98		3/21/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248	38 U	µg/kg	35 U	µg/kg	43 U	µg/kg	42 U	µg/kg
AROCLOR-1254	38 U	µg/kg	35 U	µg/kg	43 U	µg/kg	42 U	µg/kg
AROCLOR-1260	38 U	µg/kg	35 U	µg/kg	43 U	µg/kg	42 U	µg/kg
BETA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
DELTA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	2.1 UJ	µg/kg	2.1 UJ	µg/kg
DIELDRIN	9.3 J	µg/kg	3.5 U	µg/kg	4.3 U	µg/kg	4.2 U	µg/kg
ENDOSULFAN I	1.9 U	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
ENDOSULFAN II	3.8 U	µg/kg	3.5 U	µg/kg	4.3 U	µg/kg	4.2 U	µg/kg
ENDOSULFAN SULFATE	3.8 UJ	µg/kg	3.5 U	µg/kg	4.3 U	µg/kg	4.2 U	µg/kg
ENDRIN	3.8 UJ	µg/kg	3.5 U	µg/kg	4.3 U	µg/kg	4.2 U	µg/kg
ENDRIN ALDEHYDE	3.8 UJ	µg/kg	3.5 U	µg/kg	4.3 U	µg/kg	4.2 U	µg/kg
ENDRIN KETONE	3.8 UJ	µg/kg	3.5 U	µg/kg	4.3 U	µg/kg	4.2 U	µg/kg
GAMMA-BHC (LINDANE)	1.9 U	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
GAMMA-CHLORDANE	0.4 J	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
HEPTACHLOR	1.9 UJ	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	1.8 U	µg/kg	2.1 U	µg/kg	2.1 U	µg/kg
METHOXYCHLOR	19 UJ	µg/kg	18 UJ	µg/kg	21 UJ	µg/kg	21 UJ	µg/kg
TOXAPHENE	190 U	µg/kg	180 U	µg/kg	210 U	µg/kg	210 U	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)	9.8 U	mg/kg	8.9 U	mg/kg	10 U	mg/kg	9.4 U	mg/kg
METALS								
ALUMINUM	11700	mg/kg	436	mg/kg	269	mg/kg	37000	mg/kg
ANTIMONY	0.53 UJ	mg/kg	0.38 UJ	mg/kg	0.36 UJ	mg/kg	0.46 UJ	mg/kg
ARSENIC	2.5	mg/kg	2.8	mg/kg	0.73 U	mg/kg	5.4	mg/kg
BARIUM	13.6 J	mg/kg	0.76 U	mg/kg	0.73 U	mg/kg	6.9 J	mg/kg
BERYLLIUM	0.32 U	mg/kg	0.23 U	mg/kg	0.22 U	mg/kg	0.28 U	mg/kg
CADMIUM	0.32 U	mg/kg	0.23 U	mg/kg	0.22 U	mg/kg	0.28 U	mg/kg
CALCIUM	344	mg/kg	76.1 U	mg/kg	72.6 U	mg/kg	92.8 U	mg/kg
CHROMIUM	13	mg/kg	3	mg/kg	4.1	mg/kg	28	mg/kg
COBALT	0.56	mg/kg	0.38 U	mg/kg	0.36 U	mg/kg	0.46 U	mg/kg
COPPER	4	mg/kg	0.76	mg/kg	0.36 U	mg/kg	7.4	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg
IRON	7870	mg/kg	1330	mg/kg	309	mg/kg	19300	mg/kg
LEAD	27.9	mg/kg	0.84	mg/kg	0.56	mg/kg	6	mg/kg
MAGNESIUM	117	mg/kg	6.5 U	mg/kg	4.3 U	mg/kg	98.2	mg/kg
MANGANESE	67.6	mg/kg	0.47	mg/kg	3.2	mg/kg	29.8	mg/kg

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A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB00901		W30SB00902		W30SB01001		W30SB01101	
LAB ID NUMBER	9803153 - 09		9803153 - 10		9803153 - 14		9803153 - 12	
SITE	30		30		30		30	
DATE SAMPLED	3/23/98		3/23/98		3/23/98		3/21/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY	0.03	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg
NICKEL	2.1	mg/kg	0.38 U	mg/kg	0.4	mg/kg	2.6 J	mg/kg
POTASSIUM	82.2	mg/kg	18.2	mg/kg	10.9	mg/kg	44.7 UR	mg/kg
SELENIUM	0.53 U	mg/kg	0.38 U	mg/kg	0.36 U	mg/kg	0.46 U	mg/kg
SILVER	0.32 U	mg/kg	0.23 U	mg/kg	0.22 U	mg/kg	0.28 U	mg/kg
SODIUM	52.7 U	mg/kg	38.1 U	mg/kg	36.3 U	mg/kg	46.4 U	mg/kg
THALLIUM	1.1 U	mg/kg	0.76 U	mg/kg	0.73 U	mg/kg	0.93 U	mg/kg
VANADIUM	20.3	mg/kg	7.1	mg/kg	1.7	mg/kg	52	mg/kg
ZINC	8.8	mg/kg	0.76 U	mg/kg	0.93	mg/kg	3.7 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB01201		W30SB01301		W30SB01303	
LAB ID NUMBER	9803153 - 13		9803153 - 08		9803153 - 08	
SITE	30		30		30	
DATE SAMPLED	3/21/98		3/23/98		3/23/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES						
1,1,1-TRICHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1,2-TRICHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROPROPANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
2-BUTANONE	6 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg
2-HEXANONE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
4-METHYL-2-PENTANONE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
ACETONE	6 U	µg/kg	4 J	µg/kg	5 J	µg/kg
BENZENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMODICHLOROMETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMOFORM	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMOMETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CARBON DISULFIDE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CARBON TETRACHLORIDE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROBENZENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROETHANE	6 U	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg
CHLOROFORM	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROMETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CIS-1,3-DICHLOROPROPENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
DIBROMOCHLOROMETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
ETHYLBENZENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
METHYL TERT-BUTYL ETHER	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
METHYLENE CHLORIDE	8 U	µg/kg	13 U	µg/kg	17 U	µg/kg
STYRENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TETRACHLOROETHENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TOLUENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TRICHLOROETHENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
VINYL CHLORIDE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
XYLENES, TOTAL	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg

Blank space indicates chemical not analyzed.
A or D [illegible]e sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB01201		W30SB01301		W30SB01303	
LAB ID NUMBER	9803153 - 13		9803153 - 08		9803153 - 08	
SITE	30		30		30	
DATE SAMPLED	3/21/98		3/23/98		3/23/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
1,3-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
1,4-DICHLOROBENZENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	µg/kg	370 UJ	µg/kg	360 U	µg/kg
2,4,5-TRICHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4,6-TRICHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4-DICHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4-DIMETHYLPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4-DINITROPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,4-DINITROTOLUENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2,6-DINITROTOLUENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-CHLORONAPHTHALENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-CHLOROPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-METHYLNAPHTHALENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
2-NITROANILINE	380 U	µg/kg	370 UJ	µg/kg	360 U	µg/kg
2-NITROPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
3,3'-DICHLOROBENZIDINE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
3-NITROANILINE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
4-CHLORO-3-METHYLPHENOL	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
4-CHLOROANILINE	380 UJ	µg/kg	370 U	µg/kg	360 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
4-METHYLPHENOL	380 U	µg/kg	370 UJ	µg/kg	360 U	µg/kg
4-NITROANILINE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
4-NITROPHENOL	380 UJ	µg/kg	370 U	µg/kg	360 UJ	µg/kg
ACENAPHTHENE	380 U	µg/kg	370 UJ	µg/kg	360 U	µg/kg
ACENAPHTHYLENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
ANTHRACENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
BENZO(A)ANTHRACENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
BENZO(G,H,I)PERYLENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
BENZO(K)FLUORANTHENE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	380 U	µg/kg	370 U	µg/kg	360 U	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB01201		W30SB01301		W30SB01303	
LAB ID NUMBER	9803153 - 13		9803153 - 08		9803153 - 08	
SITE	30		30		30	
DATE SAMPLED	3/21/98		3/23/98		3/23/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-ETHYLHEXYL)PHTHALATE	380 UJ	μg/kg	57 J	μg/kg	55 J	μg/kg
BUTYLBENZYL PHTHALATE	380 UJ	μg/kg	370 U	μg/kg	360 UJ	μg/kg
CARBAZOLE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
CHRYSENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
DI-N-BUTYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
DI-N-OCTYL PHTHALATE	380 UJ	μg/kg	370 U	μg/kg	360 UJ	μg/kg
DIBENZO(A,H)ANTHRACENE	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg
DIBENZOFURAN	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
DIETHYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
DIMETHYL PHTHALATE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
FLUORANTHENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
FLUORENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
HEXACHLOROBENZENE	380 UJ	μg/kg	370 U	μg/kg	360 UJ	μg/kg
HEXACHLOROBUTADIENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
HEXACHLOROETHANE	380 U	μg/kg	370 UJ	μg/kg	360 U	μg/kg
INDENO(1,2,3-CD)PYRENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
ISOPHORONE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	23 U	μg/kg	22 U	μg/kg	22 U	μg/kg
N-NITROSODIPHENYLAMINE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
NAPHTHALENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
NITROBENZENE	380 U	μg/kg	370 UJ	μg/kg	360 U	μg/kg
PENTACHLOROPHENOL	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
PHENANTHRENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
PHENOL	380 U	μg/kg	370 UJ	μg/kg	360 U	μg/kg
PYRENE	380 U	μg/kg	370 U	μg/kg	360 U	μg/kg
PESTICIDES/PCBs						
4,4'-DDD	3.8 U	μg/kg	3.8 U	μg/kg	3.6 U	μg/kg
4,4'-DDE	3.8 U	μg/kg	3.8 U	μg/kg	3.6 U	μg/kg
4,4'-DDT	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ALDRIN	1.9 U	μg/kg	1.9 U	μg/kg	1.8 U	μg/kg
ALPHA-BHC	1.9 U	μg/kg	1.9 U	μg/kg	1.8 U	μg/kg
ALPHA-CHLORDANE	1.9 U	μg/kg	1.9 U	μg/kg	1.8 U	μg/kg
AROCLOR-1016	38 U	μg/kg	38 U	μg/kg	36 U	μg/kg
AROCLOR-1221	75 U	μg/kg	75 U	μg/kg	72 U	μg/kg
AROCLOR-1232	38 U	μg/kg	38 U	μg/kg	36 U	μg/kg
AROCLOR-1242	38 U	μg/kg	38 U	μg/kg	36 U	μg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB01201		W30SB01301		W30SB01303	
LAB ID NUMBER	9803153 - 13		9803153 - 08		9803153 - 08	
SITE	30		30		30	
DATE SAMPLED	3/21/98		3/23/98		3/23/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1248	38 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1254	38 U	µg/kg	38 U	µg/kg	36 U	µg/kg
AROCLOR-1260	38 U	µg/kg	38 U	µg/kg	36 U	µg/kg
BETA-BHC	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
DIELDRIN	3.8 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN I	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ENDOSULFAN II	3.8 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN SULFATE	3.8 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDRIN	3.8 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDRIN ALDEHYDE	3.8 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
ENDRIN KETONE	3.8 U	µg/kg	3.8 U	µg/kg	3.6 U	µg/kg
GAMMA-BHC (LINDANE)	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
GAMMA-CHLORDANE	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
METHOXYCHLOR	19 UJ	µg/kg	19 UJ	µg/kg	18 UJ	µg/kg
TOXAPHENE	190 U	µg/kg	190 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg
TPH (C8-C40)	9.8 U	mg/kg	55.8	mg/kg	11.8	mg/kg
METALS						
ALUMINUM	41800	mg/kg	41600	mg/kg	5150	mg/kg
ANTIMONY	0.46 UJ	mg/kg	0.47 UJ	mg/kg	0.4 UJ	mg/kg
ARSENIC	6.6	mg/kg	4.8	mg/kg	1.3	mg/kg
BARIUM	7.5 J	mg/kg	10.9 J	mg/kg	1.5 J	mg/kg
BERYLLIUM	0.28 U	mg/kg	0.28 U	mg/kg	0.24 U	mg/kg
CADMIUM	0.28 U	mg/kg	0.28 U	mg/kg	0.24 U	mg/kg
CALCIUM	181	mg/kg	486	mg/kg	80.9 U	mg/kg
CHROMIUM	37.8	mg/kg	30.7	mg/kg	12.3	mg/kg
COBALT	0.46 U	mg/kg	0.47 U	mg/kg	0.4 U	mg/kg
COPPER	9.1	mg/kg	8.4	mg/kg	1.5	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg
IRON	24500	mg/kg	24100	mg/kg	7210	mg/kg
LEAD	5.8	mg/kg	6.8	mg/kg	1.6	mg/kg
MAGNESIUM	115	mg/kg	147 U	mg/kg	16.1 U	mg/kg
MANGANESE	17.7	mg/kg	42.7	mg/kg	3.6	mg/kg

Blank space indicates chemical not analyzed.
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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W30SB01201		W30SB01301		W30SB01303	
LAB ID NUMBER	9803153 - 13		9803153 - 08		9803153 - 08	
SITE	30		30		30	
DATE SAMPLED	3/21/98		3/23/98		3/23/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MERCURY	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	3.3 J	mg/kg	3.2 J	mg/kg	0.53	mg/kg
POTASSIUM	61.1 UR	mg/kg	113 UR	mg/kg	7.3	mg/kg
SELENIUM	0.46 U	mg/kg	0.47 U	mg/kg	0.4 U	mg/kg
SILVER	0.28 U	mg/kg	0.28 U	mg/kg	0.24 U	mg/kg
SODIUM	51.4	mg/kg	46.9 U	mg/kg	40.4 U	mg/kg
THALLIUM	0.93 U	mg/kg	0.94 U	mg/kg	0.81 U	mg/kg
VANADIUM	63.5	mg/kg	63.7	mg/kg	16.3	mg/kg
ZINC	3.4 J	mg/kg	3.6 J	mg/kg	0.98	mg/kg
TOTAL ORGANIC CARBON						
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D [illegible] sample number indicates duplicate.

SITE 32

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB1-1-2		32SB1-10-12		32SB1-15-17		32SB1-15-17A		32SB1-20-22		32SB1-26-27	
LAB ID NUMBER	34836005		34836009						34848016		34848009	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/9/93		1/9/93		1/11/93		1/11/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
2-BUTANONE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
2-HEXANONE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
ACETONE	12 U	µg/kg	12 U	µg/kg		µg/kg	8	µg/kg	65	µg/kg	34	µg/kg
BENZENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMOFORM	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMOMETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROFORM	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	12 UJ	µg/kg	12 UJ	µg/kg		µg/kg	4	µg/kg	11 U	µg/kg	12 U	µg/kg
STYRENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TOLUENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	2 J	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
VINYL CHLORIDE	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	12 U	µg/kg	12 U	µg/kg		µg/kg	12 U	µg/kg	11 U	µg/kg	12 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	940 U	µg/kg	930 U	µg/kg	920 U	µg/kg	930 U	µg/kg	850 U	µg/kg	890 U	µg/kg
2,4,6-TRICHLOROPHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	940 U	µg/kg	930 U	µg/kg	920 U	µg/kg	930 U	µg/kg	850 UJ	µg/kg	890 U	µg/kg
2,4-DINITROTOLUENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB1-1-2		32SB1-10-12		32SB1-15-17		32SB1-15-17A		32SB1-20-22		32SB1-26-27	
LAB ID NUMBER	34836005		34836009						34848016		34848009	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/9/93		1/9/93		1/11/93		1/11/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-METHYLPHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
2-NITROANILINE	940 U	µg/kg	930 U	µg/kg	920 U	µg/kg	930 U	µg/kg	850 U	µg/kg	890 U	µg/kg
2-NITROPHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	390 UJ	µg/kg	380 UJ	µg/kg	380 U	µg/kg	380 U	µg/kg	350 UJ	µg/kg	370 U	µg/kg
3-NITROANILINE	940 U	µg/kg	930 U	µg/kg	920 U	µg/kg	930 U	µg/kg	850 UJ	µg/kg	890 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	940 U	µg/kg	930 U	µg/kg	920 U	µg/kg	930 U	µg/kg	850 U	µg/kg	890 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg	380 U	µg/kg	380 U	µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 UJ	µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
4-NITROANILINE	940 U	µg/kg	930 U	µg/kg	920 U	µg/kg	930 U	µg/kg	850 UJ	µg/kg	890 U	µg/kg
4-NITROPHENOL	940 U	µg/kg	930 U	µg/kg	920 U	µg/kg	930 U	µg/kg	850 U	µg/kg	890 U	µg/kg
ACENAPHTHENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
ANTHRACENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BENZO(A)PYRENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BENZO(B)FLUORANTHENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 UJ	µg/kg
BUTYLBENZYL PHTHALATE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
CARBAZOLE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
CHRYSENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 UJ	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIBENZOFURAN	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
FLUORANTHENE	390 UJ	µg/kg	380 UJ	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
FLUORENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	390 UJ	µg/kg	380 UJ	µg/kg		µg/kg		µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	390 UJ	µg/kg	380 UJ	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
ISOPHORONE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
N-NITROSODIPHENYLAMINE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
NAPHTHALENE	390 UJ	µg/kg	380 UJ	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
NITROBENZENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	940 U	µg/kg	930 U	µg/kg	920 U	µg/kg	930 U	µg/kg	850 UJ	µg/kg	890 U	µg/kg
PHENANTHRENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg

Blank s[illegible] indicates chemical not analyzed for.
A or [illegible] sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB1-1-2		32SB1-10-12		32SB1-15-17		32SB1-15-17A		32SB1-20-22		32SB1-25-27	
LAB ID NUMBER	34836005		34836009						34848016		34848009	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/9/93		1/9/93		1/11/93		1/11/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PYRENE	390 U	µg/kg	380 U	µg/kg	380 U	µg/kg	380 U	µg/kg	350 U	µg/kg	370 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
4,4'-DDE	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
4,4'-DDT	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
ALDRIN	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
ALPHA-BHC	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
ALPHA-CHLORDANE	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
AROCLOR-1016	39 UJ	µg/kg	38 UJ	µg/kg	38 U	µg/kg	38 U	µg/kg	35 U	µg/kg	37 UJ	µg/kg
AROCLOR-1221	79 UJ	µg/kg	78 UJ	µg/kg	77 U	µg/kg	77 U	µg/kg	71 U	µg/kg	74 UJ	µg/kg
AROCLOR-1232	39 UJ	µg/kg	38 UJ	µg/kg	38 U	µg/kg	38 U	µg/kg	35 U	µg/kg	37 UJ	µg/kg
AROCLOR-1242	39 UJ	µg/kg	38 UJ	µg/kg	38 U	µg/kg	38 U	µg/kg	35 U	µg/kg	37 UJ	µg/kg
AROCLOR-1248	39 UJ	µg/kg	38 UJ	µg/kg	38 U	µg/kg	38 U	µg/kg	35 U	µg/kg	37 UJ	µg/kg
AROCLOR-1254	39 UJ	µg/kg	38 UJ	µg/kg	38 U	µg/kg	38 U	µg/kg	35 U	µg/kg	37 UJ	µg/kg
AROCLOR-1260	39 UJ	µg/kg	38 UJ	µg/kg	38 U	µg/kg	38 U	µg/kg	35 U	µg/kg	37 UJ	µg/kg
BETA-BHC	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
DELTA-BHC	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
DIELDRIN	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN I	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
ENDOSULFAN II	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN SULFATE	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
ENDRIN	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
ENDRIN ALDEHYDE	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
ENDRIN KETONE	3.9 UJ	µg/kg	3.8 UJ	µg/kg	3.8 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg	3.7 UJ	µg/kg
GAMMA-BHC (LINDANE)	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
GAMMA-CHLORDANE	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	2 UJ	µg/kg	2 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 UJ	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	20 UJ	µg/kg	20 U	µg/kg	20 U	µg/kg	18 U	µg/kg	19 UJ	µg/kg
TOXAPHENE	200 UJ	µg/kg	200 UJ	µg/kg	200 U	µg/kg	200 U	µg/kg	180 U	µg/kg	190 UJ	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.8 U	mg/kg	2.1 U	mg/kg	2 U	mg/kg	1.9 U	mg/kg	1.7 U	mg/kg	1.9 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	11000	mg/kg	4450	mg/kg	2410	mg/kg	3120	mg/kg	277	mg/kg	376	mg/kg
ANTIMONY	5.4 U	mg/kg	5.7 U	mg/kg	5.7 U	mg/kg	5.7 U	mg/kg	2.6 U	mg/kg	2.7 U	mg/kg
ARSENIC	0.76 J	mg/kg	0.5 U	mg/kg	0.49 U	mg/kg	0.49 U	mg/kg	0.15 U	mg/kg	0.16 U	mg/kg
BARIUM	11.1 J	mg/kg	6 J	mg/kg	5.6	mg/kg	5.9	mg/kg	0.47 J	mg/kg	1.1 J	mg/kg
BERYLLIUM	0.06 J	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.11 UJ	mg/kg	0.11 U	mg/kg
CADMIUM	0.87 U	mg/kg	0.92 U	mg/kg	0.91 U	mg/kg	0.91 U	mg/kg	0.26 U	mg/kg	0.27 U	mg/kg
CALCIUM	257 J	mg/kg	32 J	mg/kg	28.6	mg/kg	25.5	mg/kg	93.1 J	mg/kg	77.9 J	mg/kg
CHROMIUM	22.5	mg/kg	4.3	mg/kg	4.6	mg/kg	4.2	mg/kg	0.79 U	mg/kg	0.91 J	mg/kg
COBALT	1.1 J	mg/kg	0.53 J	mg/kg	0.52 U	mg/kg	0.75	mg/kg	1.5 U	mg/kg	1.3 U	mg/kg
COPPER	1.6 J	mg/kg	0.98 J	mg/kg	0.49	mg/kg	1.1	mg/kg	0.85 J	mg/kg	1.1 J	mg/kg
CYANIDE	0.58 J	mg/kg	0.55 J	mg/kg	0.48	mg/kg	0.68	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg
IRON	9290	mg/kg	7120	mg/kg	3540	mg/kg	1970	mg/kg	121	mg/kg	232	mg/kg
LEAD	2.8	mg/kg	2	mg/kg	2	mg/kg	2.1	mg/kg	0.6 J	mg/kg	0.38 J	mg/kg
MAGNESIUM	81.7 J	mg/kg	60.9 J	mg/kg	52	mg/kg	65.5	mg/kg	15.4 J	mg/kg	24.6 J	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB1-1-2		32SB1-10-12		32SB1-15-17		32SB1-15-17A		32SB1-20-22		32SB1-25-27	
LAB ID NUMBER	34836005		34836009						34848016		34846009	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/9/93		1/9/93		1/11/93		1/11/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	37.4	mg/kg	6.7	mg/kg	4.3	mg/kg	4.7	mg/kg	0.86 J	mg/kg	1.7 J	mg/kg
MERCURY	0.03 J	mg/kg	0.02 J	mg/kg	0.02	mg/kg	0.02 U	mg/kg	0.04 J	mg/kg	0.03 J	mg/kg
NICKEL	3.9 J	mg/kg	2.9 U	mg/kg	2.9 U	mg/kg	2.9 U	mg/kg	1.6 U	mg/kg	1.7 U	mg/kg
POTASSIUM	198 J	mg/kg	320 J	mg/kg	242	mg/kg	412	mg/kg	41.9 J	mg/kg	72.3 J	mg/kg
SELENIUM	0.77 U	mg/kg	0.81 U	mg/kg	0.8 U	mg/kg	0.8 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg
SILVER	0.69 J	mg/kg	0.96 J	mg/kg	0.91	mg/kg	0.91	mg/kg	0.45 U	mg/kg	0.47 U	mg/kg
SODIUM	12.3 U	mg/kg	76.8 J	mg/kg	19.7	mg/kg	20.1	mg/kg	160 J	mg/kg	184 J	mg/kg
THALLIUM	0.49 U	mg/kg	0.51 U	mg/kg	0.51 U	mg/kg	0.51 U	mg/kg	0.15 U	mg/kg	0.16 U	mg/kg
VANADIUM	25.3	mg/kg	28.3	mg/kg	15.6	mg/kg	12.5	mg/kg	0.53 J	mg/kg	1.4 J	mg/kg
ZINC	1.9 J	mg/kg	3.7 U	mg/kg	0.42	mg/kg	0.8	mg/kg	2.1 J	mg/kg	2.8 J	mg/kg

Blank [illegible]e indicates chemical not analyzed for.
A or [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB1-35-37		32SB1-35-37A		32SB1-5-7		32SB1-50-52		32SB2-0-2		32SB2-12-14	
LAB ID NUMBER	34848017		34848018		34836008		34846010		34836010		34846008	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/9/93		1/12/93		1/9/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
2-BUTANONE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
2-HEXANONE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
ACETONE	69	µg/kg	44	µg/kg	2 J	µg/kg	44	µg/kg	3 J	µg/kg	130	µg/kg
BENZENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMOFORM	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
BROMOMETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROFORM	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 UJ	µg/kg	11 U	µg/kg	12 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	10 U	µg/kg	11 U	µg/kg	12 UJ	µg/kg	11 U	µg/kg	11 UJ	µg/kg	12 U	µg/kg
STYRENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TOLUENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	1 J	µg/kg	12 U	µg/kg
VINYL CHLORIDE	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	10 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
1,2-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
1,3-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
1,4-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2,4,5-TRICHLOROPHENOL	850 U	µg/kg	850 U	µg/kg	950 U	µg/kg	850 U	µg/kg	900 U	µg/kg	930 U	µg/kg
2,4,6-TRICHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2,4-DICHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2,4-DIMETHYLPHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2,4-DINITROPHENOL	850 UJ	µg/kg	850 UJ	µg/kg	950 U	µg/kg	850 U	µg/kg	900 U	µg/kg	930 U	µg/kg
2,4-DINITROTOLUENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2,6-DINITROTOLUENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2-CHLORONAPHTHALENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB1-35-37		32SB1-35-37A		32SB1-5-7		32SB1-50-52		32SB2-0-2		32SB2-12-14	
LAB ID NUMBER	34848017		34848018		34836008		34846010		34836010		34846008	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/9/93		1/12/93		1/9/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2-METHYLNAPHTHALENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
2-NITROANILINE	850 U	µg/kg	850 U	µg/kg	950 U	µg/kg	850 U	µg/kg	900 U	µg/kg	930 U	µg/kg
2-NITROPHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
3,3'-DICHLOROBENZIDINE	350 UJ	µg/kg	350 UJ	µg/kg	390 UJ	µg/kg	350 UJ	µg/kg	370 UJ	µg/kg	380 U	µg/kg
3-NITROANILINE	850 UJ	µg/kg	850 UJ	µg/kg	950 U	µg/kg	850 U	µg/kg	900 U	µg/kg	930 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	850 U	µg/kg	850 U	µg/kg	950 U	µg/kg	850 U	µg/kg	900 U	µg/kg	930 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
4-CHLOROANILINE	350 UJ	µg/kg	350 UJ	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
4-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
4-NITROANILINE	850 UJ	µg/kg	850 UJ	µg/kg	950 U	µg/kg	850 U	µg/kg	900 U	µg/kg	930 U	µg/kg
4-NITROPHENOL	850 U	µg/kg	850 U	µg/kg	950 U	µg/kg	850 U	µg/kg	900 U	µg/kg	930 U	µg/kg
ACENAPHTHENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
ACENAPHTHYLENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
ANTHRACENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
BENZO(A)ANTHRACENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
BENZO(A)PYRENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
BENZO(B)FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
BENZO(G,H,I)PERYLENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
BENZO(K)FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 UJ	µg/kg
BUTYLBENZYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
CARBAZOLE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 UJ	µg/kg	370 U	µg/kg	380 U	µg/kg
CHRYSENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
DI-N-BUTYL PHTHALATE	350 UJ	µg/kg	350 UJ	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
DI-N-OCTYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
DIBENZO(A,H)ANTHRACENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
DIBENZOFURAN	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
DIETHYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
DIMETHYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	390 UJ	µg/kg	350 U	µg/kg	370 UJ	µg/kg	380 U	µg/kg
FLUORENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
HEXACHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	390 UJ	µg/kg	350 U	µg/kg	370 UJ	µg/kg	380 U	µg/kg
HEXACHLOROBUTADIENE	350 U	µg/kg	350 U	µg/kg	390 UJ	µg/kg	350 U	µg/kg	370 UJ	µg/kg	380 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
HEXACHLOROETHANE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
INDENO(1,2,3-CD)PYRENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
ISOPHORONE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
N-NITROSODIPHENYLAMINE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
NAPHTHALENE	350 U	µg/kg	350 U	µg/kg	390 UJ	µg/kg	350 U	µg/kg	370 UJ	µg/kg	380 U	µg/kg
NITROBENZENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
PENTACHLOROPHENOL	850 UJ	µg/kg	850 UJ	µg/kg	950 U	µg/kg	850 U	µg/kg	900 U	µg/kg	930 U	µg/kg
PHENANTHRENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg

Blank sp--e indicates chemical not analyzed for.
A or D sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB1-35-37		32SB1-35-37A		32SB1-5-7		32SB1-50-52		32SB2-0-2		32SB2-12-14	
LAB ID NUMBER	34848017		34848018		34836008		34846010		34836010		34848008	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/9/93		1/12/93		1/9/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
PYRENE	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
4,4'-DDE	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
4,4'-DDT	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
ALDRIN	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
ALPHA-BHC	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
ALPHA-CHLORDANE	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
AROCLOR-1016	35 UJ	µg/kg	35 U	µg/kg		µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1221	71 UJ	µg/kg	71 U	µg/kg		µg/kg	71 UJ	µg/kg	75 UJ	µg/kg	78 UJ	µg/kg
AROCLOR-1232	35 UJ	µg/kg	35 U	µg/kg		µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1242	35 UJ	µg/kg	35 U	µg/kg		µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1248	35 UJ	µg/kg	35 U	µg/kg		µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1254	35 UJ	µg/kg	35 U	µg/kg		µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1260	35 UJ	µg/kg	35 U	µg/kg		µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg
BETA-BHC	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
DELTA-BHC	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
DIELDRIN	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
ENDOSULFAN I	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
ENDOSULFAN II	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
ENDOSULFAN SULFATE	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
ENDRIN	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
ENDRIN ALDEHYDE	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
ENDRIN KETONE	3.5 UJ	µg/kg	3.5 U	µg/kg		µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
GAMMA-CHLORDANE	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
HEPTACHLOR	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.8 UJ	µg/kg	1.8 U	µg/kg		µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
METHOXYCHLOR	18 UJ	µg/kg	18 U	µg/kg		µg/kg	18 UJ	µg/kg	19 UJ	µg/kg	20 UJ	µg/kg
TOXAPHENE	180 UJ	µg/kg	180 U	µg/kg		µg/kg	180 UJ	µg/kg	190 UJ	µg/kg	200 UJ	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.7 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg	1.7 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	379	mg/kg	6.9 J	mg/kg	2630	mg/kg	215	mg/kg	21900	mg/kg	3920	mg/kg
ANTIMONY	2.6 U	mg/kg	2.6 U	mg/kg	5.8 U	mg/kg	2.6 U	mg/kg	6 J	mg/kg	2.8 U	mg/kg
ARSENIC	0.15 U	mg/kg	0.15 U	mg/kg	0.91 J	mg/kg	0.15 U	mg/kg	0.48 U	mg/kg	1 J	mg/kg
BARIUM	0.06 J	mg/kg	0.02 U	mg/kg	5.5 J	mg/kg	0.12 J	mg/kg	10.6 J	mg/kg	6.2 J	mg/kg
BERYLLIUM	0.11 UJ	mg/kg	0.11 UJ	mg/kg	0.06 U	mg/kg	0.11 U	mg/kg	0.12 J	mg/kg	0.12 U	mg/kg
CADMIUM	0.25 U	mg/kg	0.4 J	mg/kg	0.93 U	mg/kg	0.25 U	mg/kg	0.89 U	mg/kg	0.28 U	mg/kg
CALCIUM	82.6 J	mg/kg	21.9 U	mg/kg	42.6 J	mg/kg	63 J	mg/kg	611 J	mg/kg	204 J	mg/kg
CHROMIUM	1.1 J	mg/kg	0.79 U	mg/kg	4.3	mg/kg	0.79 U	mg/kg	18	mg/kg	10.2	mg/kg
COBALT	1.2 U	mg/kg	1.2 U	mg/kg	1 J	mg/kg	1.2 U	mg/kg	1.8 J	mg/kg	1.3 U	mg/kg
COPPER	0.8 J	mg/kg	0.19 U	mg/kg	0.71 J	mg/kg	0.79 J	mg/kg	3 J	mg/kg	2.1 J	mg/kg
CYANIDE	0.16 U	mg/kg	0.16 U	mg/kg	0.51 J	mg/kg	0.16 U	mg/kg	0.47 J	mg/kg	0.17 U	mg/kg
IRON	176	mg/kg	0.49 U	mg/kg	5520	mg/kg	29.8	mg/kg	13200	mg/kg	4960	mg/kg
LEAD	0.42 J	mg/kg	0.43 J	mg/kg	3.1	mg/kg	0.13 J	mg/kg	3.9	mg/kg	3	mg/kg
MAGNESIUM	13.1 J	mg/kg	20 J	mg/kg	59 J	mg/kg	14.7 J	mg/kg	130 J	mg/kg	52.1 J	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB1-35-37		32SB1-35-37A		32SB1-5-7		32SB1-50-52		32SB2-0-2		32SB2-12-14	
LAB ID NUMBER	34848017		34848018		34836008		34846010		34836010		34846008	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/9/93		1/12/93		1/9/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	1.8 J	mg/kg	0.17 UJ	mg/kg	8.2	mg/kg	0.56 J	mg/kg	32.9	mg/kg	14.4	mg/kg
MERCURY	0.04 J	mg/kg	0.06 J	mg/kg	0.03 J	mg/kg	0.03 J	mg/kg	0.03 J	mg/kg	0.04	mg/kg
NICKEL	1.6 U	mg/kg	1.6 U	mg/kg	2.9 U	mg/kg	1.6 U	mg/kg	4 J	mg/kg	1.8 U	mg/kg
POTASSIUM	54.2 J	mg/kg	75.7 J	mg/kg	281 J	mg/kg	63.8 J	mg/kg	273 J	mg/kg	130 J	mg/kg
SELENIUM	0.11 U	mg/kg	0.11 U	mg/kg	1.2	mg/kg	0.11 U	mg/kg	0.79 U	mg/kg	0.12 U	mg/kg
SILVER	0.44 U	mg/kg	0.45 U	mg/kg	0.89 J	mg/kg	0.45 U	mg/kg	1.2 J	mg/kg	0.49 U	mg/kg
SODIUM	166 J	mg/kg	2.6 U	mg/kg	75.6 J	mg/kg	140 J	mg/kg	13 J	mg/kg	234 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.15 U	mg/kg	0.52 U	mg/kg	0.15 U	mg/kg	0.5 U	mg/kg	0.16 U	mg/kg
VANADIUM	0.56 J	mg/kg	0.5 J	mg/kg	18.7	mg/kg	0.4 U	mg/kg	36.8	mg/kg	15.2	mg/kg
ZINC	2 J	mg/kg	0.47 U	mg/kg	0.52 J	mg/kg	2.9 J	mg/kg	3.5 J	mg/kg	4.1 J	mg/kg

Blank s- -e indicates chemical not analyzed for.
A or [sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB2-5-7		32SB3-0-2		32SB3-0-2A		32SB3-10-12		32SB3-20-22		32SB3-30-32	
LAB ID NUMBER	34846006		34846002		34846003		34846004		34846005		34846001	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2-TRICHLOROETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROPROPANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-BUTANONE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	8 J	μg/kg	11 U	μg/kg	11 U	μg/kg
2-HEXANONE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
4-METHYL-2-PENTANONE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ACETONE	110	μg/kg	200	μg/kg	150	μg/kg	230	μg/kg	110	μg/kg	58	μg/kg
BENZENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMODICHLOROMETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOFORM	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOMETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON DISULFIDE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON TETRACHLORIDE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROBENZENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROFORM	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROMETHANE	11 UJ	μg/kg	55 UJ	μg/kg	55 UJ	μg/kg	12 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg
CIS-1,3-DICHLOROPROPENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
DIBROMOCHLOROMETHANE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ETHYLBENZENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
STYRENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TETRACHLOROETHENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TOLUENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRICHLOROETHENE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
VINYL CHLORIDE	11 U	μg/kg	55 U	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
XYLENES, TOTAL	11 U	μg/kg	11 J	μg/kg	55 U	μg/kg	12 U	μg/kg	11 U	μg/kg	11 U	μg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
1,2-DICHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
1,3-DICHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
1,4-DICHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
2,4,5-TRICHLOROPHENOL	900 U	μg/kg	860 U	μg/kg	860 U	μg/kg	940 U	μg/kg	910 U	μg/kg	860 U	μg/kg
2,4,6-TRICHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
2,4-DICHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
2,4-DIMETHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
2,4-DINITROPHENOL	900 U	μg/kg	860 U	μg/kg	860 U	μg/kg	940 U	μg/kg	910 U	μg/kg	860 UJ	μg/kg
2,4-DINITROTOLUENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
2,6-DINITROTOLUENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg
2-CHLORONAPHTHALENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	350 U	μg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB2-6-7		32SB3-0-2		32SB3-0-2A		32SB3-10-12		32SB3-20-22		32SB3-30-32	
LAB ID NUMBER	34846006		34846002		34846003		34846004		34846005		34846001	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg	810	µg/kg	620	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
2-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
2-NITROANILINE	900 U	µg/kg	860 U	µg/kg	860 U	µg/kg	940 U	µg/kg	910 U	µg/kg	860 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
3-NITROANILINE	900 U	µg/kg	860 U	µg/kg	860 U	µg/kg	940 U	µg/kg	910 U	µg/kg	860 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	900 U	µg/kg	860 U	µg/kg	860 U	µg/kg	940 U	µg/kg	910 U	µg/kg	860 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
4-NITROANILINE	900 U	µg/kg	860 U	µg/kg	860 U	µg/kg	940 U	µg/kg	910 U	µg/kg	860 UJ	µg/kg
4-NITROPHENOL	900 U	µg/kg	860 U	µg/kg	860 U	µg/kg	940 U	µg/kg	910 U	µg/kg	860 U	µg/kg
ACENAPHTHENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
ANTHRACENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BENZO(A)PYRENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 UJ	µg/kg	350 UJ	µg/kg	350 UJ	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
CARBAZOLE	39 J	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
CHRYSENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
DI-N-BUTYL PHTHALATE	370 UJ	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
DI-N-OCTYL PHTHALATE	40 J	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
DIBENZO(A,H)ANTHRACENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
FLUORANTHENE	370 U	µg/kg	53 J	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
FLUORENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
ISOPHORONE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
NAPHTHALENE	370 U	µg/kg	1700	µg/kg	1400	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
NITROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
PENTACHLOROPHENOL	900 U	µg/kg	860 U	µg/kg	860 U	µg/kg	940 U	µg/kg	910 U	µg/kg	860 UJ	µg/kg
PHENANTHRENE	370 U	µg/kg	120 J	µg/kg	63 J	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg

Blank space indicates chemical not analyzed for.
A or [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB2-6-7		32SB3-0-2		32SB3-0-2A		32SB3-10-12		32SB3-20-22		32SB3-30-32	
LAB ID NUMBER	34846006		34846002		34846003		34846004		34846005		34846001	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
PYRENE	370 U	µg/kg	36 J	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	350 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
4,4'-DDE	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
4,4'-DDT	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
ALDRIN	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
ALPHA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
ALPHA-CHLORDANE	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
AROCLOR-1016	37 UJ	µg/kg	35 UJ	µg/kg	35 UJ	µg/kg	39 UJ	µg/kg	37 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1221	75 UJ	µg/kg	72 UJ	µg/kg	72 UJ	µg/kg	79 UJ	µg/kg	76 UJ	µg/kg	72 UJ	µg/kg
AROCLOR-1232	37 UJ	µg/kg	35 UJ	µg/kg	35 UJ	µg/kg	39 UJ	µg/kg	37 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1242	37 UJ	µg/kg	35 UJ	µg/kg	35 UJ	µg/kg	39 UJ	µg/kg	37 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1248	37 UJ	µg/kg	35 UJ	µg/kg	35 UJ	µg/kg	39 UJ	µg/kg	37 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1254	37 UJ	µg/kg	35 UJ	µg/kg	35 UJ	µg/kg	39 UJ	µg/kg	37 UJ	µg/kg	35 UJ	µg/kg
AROCLOR-1260	37 UJ	µg/kg	35 UJ	µg/kg	35 UJ	µg/kg	39 UJ	µg/kg	37 UJ	µg/kg	35 UJ	µg/kg
BETA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
DELTA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
DIELDRIN	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
ENDOSULFAN I	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
ENDOSULFAN II	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
ENDOSULFAN SULFATE	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN ALDEHYDE	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
ENDRIN KETONE	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.9 UJ	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
GAMMA-CHLORDANE	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg
METHOXYCHLOR	19 UJ	µg/kg	18 UJ	µg/kg	18 UJ	µg/kg	20 UJ	µg/kg	19 UJ	µg/kg	18 UJ	µg/kg
TOXAPHENE	190 UJ	µg/kg	180 UJ	µg/kg	180 UJ	µg/kg	200 UJ	µg/kg	190 UJ	µg/kg	180 UJ	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.8 U	mg/kg	401	mg/kg	784	mg/kg	63.2	mg/kg	1.9 U	mg/kg	1.8 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	14500	mg/kg	5740	mg/kg	9280	mg/kg	6070	mg/kg	1940	mg/kg	640	mg/kg
ANTIMONY	2.7 U	mg/kg	2.6 U	mg/kg	2.6 U	mg/kg	2.8 U	mg/kg	2.7 U	mg/kg	2.6 U	mg/kg
ARSENIC	0.81 J	mg/kg	0.91 J	mg/kg	0.71 J	mg/kg	1.3 J	mg/kg	0.18 J	mg/kg	0.15 U	mg/kg
BARIUM	13.1 J	mg/kg	7.6 J	mg/kg	9.9 J	mg/kg	6.5 J	mg/kg	3.6 J	mg/kg	1.2 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg	0.11 U	mg/kg	0.11 UJ	mg/kg
CADMIUM	0.27 U	mg/kg	0.26 U	mg/kg	2.6 U	mg/kg	0.28 U	mg/kg	0.27 U	mg/kg	0.26	mg/kg
CALCIUM	308 J	mg/kg	493 J	mg/kg	931 J	mg/kg	132 J	mg/kg	77.8 J	mg/kg	133 J	mg/kg
CHROMIUM	10	mg/kg	4.9	mg/kg	7.1	mg/kg	5.5	mg/kg	2.7	mg/kg	0.94 J	mg/kg
COBALT	1.3 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg	1.4 U	mg/kg	1.3 U	mg/kg	1.2 U	mg/kg
COPPER	4 J	mg/kg	3.1 J	mg/kg	5.7	mg/kg	4.2 J	mg/kg	1.3 J	mg/kg	7.8	mg/kg
CYANIDE	0.17 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg	0.18 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg
IRON	8950	mg/kg	4160	mg/kg	5250	mg/kg	3950	mg/kg	647	mg/kg	88.8	mg/kg
LEAD	3.3	mg/kg	3	mg/kg	2.6	mg/kg	3.8	mg/kg	1.1	mg/kg	0.32 J	mg/kg
MAGNESIUM	119 J	mg/kg	44.4 J	mg/kg	84.4 J	mg/kg	81.5 J	mg/kg	42.7 J	mg/kg	24.5 J	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB2-6-7		32SB3-0-2		32SB3-0-2A		32SB3-10-12		32SB3-20-22		32SB3-30-32	
LAB ID NUMBER	34846006		34846002		34846003		34846004		34846005		34846001	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	39.3	mg/kg	91.5	mg/kg	95	mg/kg	6.2	mg/kg	3.5	mg/kg	0.87 J	mg/kg
MERCURY	0.04	mg/kg	0.03	mg/kg	0.04	mg/kg	0.03	mg/kg	0.03 J	mg/kg	0.03 J	mg/kg
NICKEL	2 J	mg/kg	1.7 U	mg/kg	1.7 U	mg/kg	2.3 J	mg/kg	1.7 U	mg/kg	1.7 J	mg/kg
POTASSIUM	165 J	mg/kg	180 J	mg/kg	210 J	mg/kg	672 J	mg/kg	144 J	mg/kg	41 U	mg/kg
SELENIUM	0.11 J	mg/kg	0.22 J	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg
SILVER	0.47 U	mg/kg	0.45 U	mg/kg	0.45 U	mg/kg	0.49 U	mg/kg	0.48 U	mg/kg	0.45 U	mg/kg
SODIUM	181 J	mg/kg	172 J	mg/kg	159 J	mg/kg	214 J	mg/kg	196 J	mg/kg	173 J	mg/kg
THALLIUM	0.16 U	mg/kg	0.15 U	mg/kg	0.15 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg
VANADIUM	20.4	mg/kg	9.8 J	mg/kg	13.2	mg/kg	15.8	mg/kg	6.6 J	mg/kg	0.6 J	mg/kg
ZINC	7.5 J	mg/kg	3.5 J	mg/kg	4.9 J	mg/kg	2.9 J	mg/kg	2.6 J	mg/kg	2.7 J	mg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB3-5-7		32SB4-0-2		32SB4-15-17		32SB4-20-22		32SB4-20-22A		32SB4-25-27	
LAB ID NUMBER	34846001		34848008		34848009		34848010		34848011		34848012	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-BUTANONE	6 J	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ACETONE	170	µg/kg	18	µg/kg	55	µg/kg	100	µg/kg	58	µg/kg	48	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	880 U	µg/kg	860 U	µg/kg	950 U	µg/kg	910 U	µg/kg	910 U	µg/kg	900 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	880 U	µg/kg	860 UJ	µg/kg	950 UJ	µg/kg	910 UJ	µg/kg	910 UJ	µg/kg	900 UJ	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB3-5-7		32SB4-0-2		32SB4-15-17		32SB4-20-22		32SB4-20-22A		32SB4-25-27	
LAB ID NUMBER	34846001		34848008		34848009		34848010		34848011		34848012	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-NITROANILINE	880 U	µg/kg	860 U	µg/kg	950 U	µg/kg	910 U	µg/kg	910 U	µg/kg	900 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg
3-NITROANILINE	880 U	µg/kg	860 U	µg/kg	950 U	µg/kg	910 U	µg/kg	910 UJ	µg/kg	900 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	880 U	µg/kg	860 U	µg/kg	950 U	µg/kg	910 U	µg/kg	910 U	µg/kg	900 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-NITROANILINE	880 U	µg/kg	860 UJ	µg/kg	950 UJ	µg/kg	910 UJ	µg/kg	910 UJ	µg/kg	900 UJ	µg/kg
4-NITROPHENOL	880 U	µg/kg	860 U	µg/kg	950 U	µg/kg	910 U	µg/kg	910 U	µg/kg	900 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ANTHRACENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(A)PYRENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	360 U	µg/kg	350 UJ	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CARBAZOLE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CHRYSENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	350 UJ	µg/kg	390 UJ	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORANTHENE	39 J	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ISOPHORONE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NAPHTHALENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NITROBENZENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	880 U	µg/kg	860 UJ	µg/kg	950 UJ	µg/kg	910 UJ	µg/kg	910 UJ	µg/kg	900 UJ	µg/kg
PHENANTHRENE	360 U	µg/kg	350 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed for.
A or [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB3-5-7		32SB4-0-2		32SB4-15-17		32SB4-20-22		32SB4-20-22A		32SB4-25-27	
LAB ID NUMBER	34846001		34848008		34848009		34848010		34848011		34848012	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	360 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	370 U	μg/kg	370 U	μg/kg
PYRENE	360 U	μg/kg	350 U	μg/kg	390 U	μg/kg	370 U	μg/kg	370 U	μg/kg	370 U	μg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
4,4'-DDE	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
4,4'-DDT	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
ALDRIN	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
ALPHA-BHC	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
ALPHA-CHLORDANE	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
AROCLOR-1016	36 UJ	μg/kg	35 U	μg/kg	39 U	μg/kg	37 UJ	μg/kg	37 U	μg/kg	37 UJ	μg/kg
AROCLOR-1221	74 UJ	μg/kg	72 U	μg/kg	80 U	μg/kg	76 UJ	μg/kg	76 U	μg/kg	75 UJ	μg/kg
AROCLOR-1232	36 UJ	μg/kg	35 U	μg/kg	39 U	μg/kg	37 UJ	μg/kg	37 U	μg/kg	37 UJ	μg/kg
AROCLOR-1242	36 UJ	μg/kg	35 U	μg/kg	39 U	μg/kg	37 UJ	μg/kg	37 U	μg/kg	37 UJ	μg/kg
AROCLOR-1248	36 UJ	μg/kg	35 U	μg/kg	39 U	μg/kg	37 UJ	μg/kg	37 U	μg/kg	37 UJ	μg/kg
AROCLOR-1254	36 UJ	μg/kg	35 U	μg/kg	39 U	μg/kg	37 UJ	μg/kg	37 U	μg/kg	37 UJ	μg/kg
AROCLOR-1260	36 UJ	μg/kg	35 U	μg/kg	39 U	μg/kg	37 UJ	μg/kg	37 U	μg/kg	37 UJ	μg/kg
BETA-BHC	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
DELTA-BHC	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
DIELDRIN	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
ENDOSULFAN I	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
ENDOSULFAN II	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
ENDOSULFAN SULFATE	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
ENDRIN	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
ENDRIN ALDEHYDE	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
ENDRIN KETONE	3.6 UJ	μg/kg	3.5 U	μg/kg	3.9 U	μg/kg	3.7 UJ	μg/kg	3.7 U	μg/kg	3.7 UJ	μg/kg
GAMMA-BHC (LINDANE)	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
GAMMA-CHLORDANE	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
HEPTACHLOR	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
HEPTACHLOR EPOXIDE	1.9 UJ	μg/kg	1.8 U	μg/kg	2 U	μg/kg	1.9 UJ	μg/kg	1.9 U	μg/kg	1.9 UJ	μg/kg
METHOXYCHLOR	19 UJ	μg/kg	18 U	μg/kg	20 U	μg/kg	19 UJ	μg/kg	19 U	μg/kg	19 UJ	μg/kg
TOXAPHENE	190 UJ	μg/kg	180 U	μg/kg	200 U	μg/kg	190 UJ	μg/kg	190 U	μg/kg	190 UJ	μg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	13	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg	1.8 U	mg/kg	1.9 U	mg/kg	1.8 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	10800	mg/kg	6580	mg/kg	8900	mg/kg	951	mg/kg	1100	mg/kg	751	mg/kg
ANTIMONY	2.6 U	mg/kg	2.6 U	mg/kg	2.9 U	mg/kg	2.8 U	mg/kg	2.7 U	mg/kg	2.7 U	mg/kg
ARSENIC	1.1 J	mg/kg	0.71 J	mg/kg	2.1 J	mg/kg	0.16 U	mg/kg	0.18 J	mg/kg	0.16 U	mg/kg
BARIUM	13.7 J	mg/kg	10.1 J	mg/kg	7 J	mg/kg	2.5 J	mg/kg	2.8 J	mg/kg	2.1 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.11 UJ	mg/kg	0.12 UJ	mg/kg	0.11 UJ	mg/kg	0.11 UJ	mg/kg	0.11 UJ	mg/kg
CADMIUM	0.26 U	mg/kg	0.26 U	mg/kg	0.28 U	mg/kg	0.27 U	mg/kg	0.27 U	mg/kg	0.27 U	mg/kg
CALCIUM	155 J	mg/kg	293 J	mg/kg	151 J	mg/kg	98 J	mg/kg	95.6 J	mg/kg	96.5 J	mg/kg
CHROMIUM	8.9	mg/kg	5.6	mg/kg	24.6	mg/kg	1.7 J	mg/kg	1.6 J	mg/kg	0.83 U	mg/kg
COBALT	1.5 J	mg/kg	1.2 U	mg/kg	1.4 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg
COPPER	4.3 J	mg/kg	3.3 J	mg/kg	5.3 J	mg/kg	1.1 J	mg/kg	1.4 J	mg/kg	1.4 J	mg/kg
CYANIDE	0.16 U	mg/kg	0.16 U	mg/kg	0.18 U	mg/kg	0.17 U	mg/kg	0.17 U	mg/kg	0.17 U	mg/kg
IRON	6130	mg/kg	3970	mg/kg	13300	mg/kg	1230	mg/kg	1190	mg/kg	324	mg/kg
LEAD	3.8	mg/kg	2.5	mg/kg	2.8	mg/kg	1.2	mg/kg	1.2	mg/kg	0.7	mg/kg
MAGNESIUM	117 J	mg/kg	114 J	mg/kg	74.6 J	mg/kg	31 J	mg/kg	31 J	mg/kg	28.6 J	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB3-5-7		32SB4-0-2		32SB4-15-17		32SB4-20-22		32SB4-20-22A		32SB4-25-27	
LAB ID NUMBER	34846001		34848008		34848009		34848010		34848011		34848012	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	21.2	mg/kg	11.2	mg/kg	8.9	mg/kg	2.3 J	mg/kg	2.1 J	mg/kg	0.18 UJ	mg/kg
MERCURY	0.03	mg/kg	0.04 J	mg/kg	0.04 J	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.04 J	mg/kg
NICKEL	2.3 J	mg/kg	4 J	mg/kg	1.8 U	mg/kg	1.8 U	mg/kg	1.7 U	mg/kg	1.7 U	mg/kg
POTASSIUM	541 J	mg/kg	161 J	mg/kg	76.5 J	mg/kg	116 J	mg/kg	69.4 J	mg/kg	59.4 J	mg/kg
SELENIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.12 J	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg
SILVER	0.46 U	mg/kg	0.45 U	mg/kg	0.5 U	mg/kg	0.48 U	mg/kg	0.48 U	mg/kg	0.47 U	mg/kg
SODIUM	196 J	mg/kg	175 J	mg/kg	209 J	mg/kg	162 J	mg/kg	183 J	mg/kg	199 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.15 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg
VANADIUM	15.5	mg/kg	9.7 J	mg/kg	50.5	mg/kg	8.4 J	mg/kg	7.8 J	mg/kg	2.3 J	mg/kg
ZINC	5.6	mg/kg	5.1	mg/kg	5.9 J	mg/kg	1.9 J	mg/kg	2.5 J	mg/kg	1.8 J	mg/kg

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A or D sample number indicates duplicate.

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB4-35-37		32SB4-45-47		32SB5-1-2		32SB5-10-12		32SB5-20-22		32SB5-45-47	
LAB ID NUMBER	34848013		34848014		34925008		34925011		34925010		34925012	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/19/93		1/19/93		1/19/93		1/19/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg	4 J	µg/kg	12 UJ	µg/kg	13 J	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg
ACETONE	53	µg/kg	33	µg/kg	11 U	µg/kg	34	µg/kg	20	µg/kg	22 J	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 UJ	µg/kg	11 UJ	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 UJ	µg/kg
TRICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,2-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,3-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,4-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4,5-TRICHLOROPHENOL	840 U	µg/kg	850 U	µg/kg	890 U	µg/kg	930 U	µg/kg	930 U	µg/kg	880 U	µg/kg
2,4,6-TRICHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DICHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DIMETHYLPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DINITROPHENOL	840 UJ	µg/kg	850 UJ	µg/kg	890 U	µg/kg	930 U	µg/kg	930 U	µg/kg	880 U	µg/kg
2,4-DINITROTOLUENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,6-DINITROTOLUENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-CHLORONAPHTHALENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB4-35-37		32SB4-45-47		32SB5-1-2		32SB5-10-12		32SB5-20-22		32SB5-46-47	
LAB ID NUMBER	34848013		34848014		34926008		34926011		34926010		34926012	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/19/93		1/19/93		1/19/93		1/19/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-METHYLNAPHTHALENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-NITROANILINE	840 U	µg/kg	850 U	µg/kg	890 U	µg/kg	930 U	µg/kg	930 U	µg/kg	880 U	µg/kg
2-NITROPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
3,3'-DICHLOROBENZIDINE	350 UJ	µg/kg	350 UJ	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
3-NITROANILINE	840 UJ	µg/kg	850 UJ	µg/kg	890 U	µg/kg	930 U	µg/kg	930 U	µg/kg	880 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	840 U	µg/kg	850 U	µg/kg	890 U	µg/kg	930 U	µg/kg	930 U	µg/kg	880 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROANILINE	350 UJ	µg/kg	350 UJ	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-NITROANILINE	840 UJ	µg/kg	850 UJ	µg/kg	890 U	µg/kg	930 U	µg/kg	930 U	µg/kg	880 U	µg/kg
4-NITROPHENOL	840 U	µg/kg	850 U	µg/kg	890 U	µg/kg	930 U	µg/kg	930 U	µg/kg	880 U	µg/kg
ACENAPHTHENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ACENAPHTHYLENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ANTHRACENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(A)ANTHRACENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(A)PYRENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(B)FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(G,H,I)PERYLENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(K)FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BUTYLBENZYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
CARBAZOLE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
CHRYSENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DI-N-BUTYL PHTHALATE	420 UJ	µg/kg	440 UJ	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DI-N-OCTYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIBENZO(A,H)ANTHRACENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIBENZOFURAN	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIETHYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIMETHYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
FLUORENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROBUTADIENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROETHANE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
INDENO(1,2,3-CD)PYRENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ISOPHORONE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
N-NITROSODIPHENYLAMINE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
NAPHTHALENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
NITROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PENTACHLOROPHENOL	840 UJ	µg/kg	850 UJ	µg/kg	890 UJ	µg/kg	930 UJ	µg/kg	930 UJ	µg/kg	880 UJ	µg/kg
PHENANTHRENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	380 U	µg/kg	380 U	µg/kg	360 U	µg/kg

Blank sp--e indicates chemical not analyzed for.
A or D ample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB4-35-37		32SB4-45-47		32SB5-1-2		32SB5-10-12		32SB5-20-22		32SB5-45-47	
LAB ID NUMBER	34848013		34848014		34925008		34925011		34925010		34925012	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/19/93		1/19/93		1/19/93		1/19/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	350 U	μg/kg	350 U	μg/kg	370 U	μg/kg	380 U	μg/kg	380 U	μg/kg	360 U	μg/kg
PYRENE	350 U	μg/kg	350 U	μg/kg	370 U	μg/kg	380 U	μg/kg	380 U	μg/kg	360 U	μg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
4,4'-DDE	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
4,4'-DDT	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ALDRIN	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
ALPHA-BHC	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
ALPHA-CHLORDANE	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
AROCLOR-1016	35 U	μg/kg	35 U	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	38 UJ	μg/kg	36 UJ	μg/kg
AROCLOR-1221	71 U	μg/kg	71 U	μg/kg	74 UJ	μg/kg	78 UJ	μg/kg	78 UJ	μg/kg	74 UJ	μg/kg
AROCLOR-1232	35 U	μg/kg	35 U	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	38 UJ	μg/kg	36 UJ	μg/kg
AROCLOR-1242	35 U	μg/kg	35 U	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	38 UJ	μg/kg	36 UJ	μg/kg
AROCLOR-1248	35 U	μg/kg	35 U	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	38 UJ	μg/kg	36 UJ	μg/kg
AROCLOR-1254	35 U	μg/kg	35 U	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	38 UJ	μg/kg	36 UJ	μg/kg
AROCLOR-1260	35 U	μg/kg	35 U	μg/kg	37 UJ	μg/kg	38 UJ	μg/kg	38 UJ	μg/kg	36 UJ	μg/kg
BETA-BHC	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
DELTA-BHC	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
DIELDRIN	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ENDOSULFAN I	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
ENDOSULFAN II	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ENDOSULFAN SULFATE	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ENDRIN	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ENDRIN ALDEHYDE	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
ENDRIN KETONE	3.5 U	μg/kg	3.5 U	μg/kg	3.7 UJ	μg/kg	3.8 UJ	μg/kg	3.8 UJ	μg/kg	3.6 UJ	μg/kg
GAMMA-BHC (LINDANE)	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
GAMMA-CHLORDANE	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
HEPTACHLOR	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
HEPTACHLOR EPOXIDE	1.8 U	μg/kg	1.8 U	μg/kg	1.9 UJ	μg/kg	2 UJ	μg/kg	2 UJ	μg/kg	1.9 UJ	μg/kg
METHOXYCHLOR	18 U	μg/kg	18 U	μg/kg	19 UJ	μg/kg	20 UJ	μg/kg	20 UJ	μg/kg	19 UJ	μg/kg
TOXAPHENE	180 U	μg/kg	180 U	μg/kg	190 UJ	μg/kg	200 UJ	μg/kg	200 UJ	μg/kg	190 UJ	μg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	2	mg/kg	1.7 U	mg/kg	27.1	mg/kg	1.9 U	mg/kg	1.9 U	mg/kg	1.8 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	458	mg/kg	156	mg/kg	21600	mg/kg	6650	mg/kg	4920	mg/kg	1500	mg/kg
ANTIMONY	2.6 U	mg/kg	2.6 U	mg/kg	5.5 U	mg/kg	5.7 U	mg/kg	5.8 U	mg/kg	5.3 U	mg/kg
ARSENIC	0.15 U	mg/kg	0.15 U	mg/kg	2.3 J	mg/kg	1.8 J	mg/kg	1.6 J	mg/kg	1.1 J	mg/kg
BARIUM	1.1 J	mg/kg	0.06 J	mg/kg	15.9 J	mg/kg	6.3 J	mg/kg	6.4 J	mg/kg	1.3 J	mg/kg
BERYLLIUM	0.11 UJ	mg/kg	0.11 UJ	mg/kg	0.22 J	mg/kg	0.08 J	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg
CADMIUM	0.25 U	mg/kg	0.26 U	mg/kg	0.88 U	mg/kg	0.91 U	mg/kg	0.92 U	mg/kg	0.86 U	mg/kg
CALCIUM	105 J	mg/kg	91.1 J	mg/kg	339 J	mg/kg	365 J	mg/kg	24.5 J	mg/kg	7.1 U	mg/kg
CHROMIUM	0.92 J	mg/kg	0.79 U	mg/kg	16.1	mg/kg	7.4	mg/kg	5.4	mg/kg	1.4 J	mg/kg
COBALT	1.2 U	mg/kg	1.2 U	mg/kg	0.75 J	mg/kg	0.52 U	mg/kg	0.53 U	mg/kg	0.49 U	mg/kg
COPPER	0.97 J	mg/kg	0.8 J	mg/kg	5.1 J	mg/kg	2.1 J	mg/kg	0.98 J	mg/kg	0.36 U	mg/kg
CYANIDE	0.16 U	mg/kg	0.16 U	mg/kg	0.48 J	mg/kg	0.56 J	mg/kg	0.58 J	mg/kg	0.51 J	mg/kg
IRON	75.7	mg/kg	44.6 J	mg/kg	10800	mg/kg	5440	mg/kg	1420	mg/kg	79.7	mg/kg
LEAD	0.25 J	mg/kg	0.19 J	mg/kg	3.1	mg/kg	2.1 J	mg/kg	1.7	mg/kg	0.42 J	mg/kg
MAGNESIUM	14.7 J	mg/kg	10.4 J	mg/kg	207 J	mg/kg	54.2 J	mg/kg	53.4 J	mg/kg	7.7 U	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB4-35-37		32SB4-45-47		32SB5-1-2		32SB5-10-12		32SB5-20-22		32SB5-45-47	
LAB ID NUMBER	34848013		34848014		34925008		34925011		34925010		34925012	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/19/93		1/19/93		1/19/93		1/18/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	0.21 J	mg/kg	0.17 UJ	mg/kg	95.5	mg/kg	27.1	mg/kg	4.6	mg/kg	1.3 J	mg/kg
MERCURY	0.03 J	mg/kg	0.05 J	mg/kg	0.02 J	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg
NICKEL	2.2 J	mg/kg	1.8 J	mg/kg	2.8 U	mg/kg	2.9 U	mg/kg	2.9 U	mg/kg	2.7 U	mg/kg
POTASSIUM	43.4 J	mg/kg	54.3 J	mg/kg	119 J	mg/kg	223 J	mg/kg	145 J	mg/kg	111 U	mg/kg
SELENIUM	0.11 U	mg/kg	0.11 U	mg/kg	3.7	mg/kg	0.53 J	mg/kg	0.59 J	mg/kg	0.46 U	mg/kg
SILVER	0.44 U	mg/kg	0.45 U	mg/kg	0.54 U	mg/kg	0.56 U	mg/kg	0.57 U	mg/kg	0.52 U	mg/kg
SODIUM	174 J	mg/kg	157 J	mg/kg	14 J	mg/kg	18 J	mg/kg	20.4 J	mg/kg	14.9 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.15 U	mg/kg	0.56 U	mg/kg	0.59 U	mg/kg	0.59 U	mg/kg	0.55 U	mg/kg
VANADIUM	0.4 U	mg/kg	0.4 U	mg/kg	29.3	mg/kg	25.4	mg/kg	11.6 J	mg/kg	0.95 J	mg/kg
ZINC	1.9 J	mg/kg	3.7 J	mg/kg	6.8	mg/kg	1.9 J	mg/kg	1.1 J	mg/kg	0.91 J	mg/kg

Blank sp--e indicates chemical not analyzed for.
A or D sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB5-45-47A		32SB6-5-7		32SB5-61-63		32SB5-95-97		32SB6-0-2		32SB6-10-12	
LAB ID NUMBER	34846012		34925009		34938007		34938008		34846016		34846014	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/19/93		1/19/93		1/19/93		1/19/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	11 UJ	µg/kg	12 UJ	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
2-BUTANONE	9 J	µg/kg	12 UJ	µg/kg	50 J	µg/kg	11 UJ	µg/kg	1400 UJ	µg/kg	12 U	µg/kg
2-HEXANONE	11 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	1400 UJ	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	11 UJ	µg/kg	12 UJ	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	1400 U	µg/kg	12 U	µg/kg
ACETONE	11	µg/kg	12 U	µg/kg	57 J	µg/kg	35 J	µg/kg	1400 UJ	µg/kg	75	µg/kg
BENZENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
BROMOFORM	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
BROMOMETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CHLOROETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CHLOROFORM	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 UJ	µg/kg	12 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
STYRENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
TOLUENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
2,4,5-TRICHLOROPHENOL	870 U	µg/kg	940 U	µg/kg	860 U	µg/kg	870 U	µg/kg	18000 U	µg/kg	960 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	1500 J	µg/kg	400 U	µg/kg
2,4-DINITROPHENOL	870 U	µg/kg	940 U	µg/kg	860 U	µg/kg	870 U	µg/kg	18000 U	µg/kg	960 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB5-46-47A		32SB5-5-7		32SB5-61-63		32SB5-95-97		32SB6-0-2		32SB6-10-12	
LAB ID NUMBER	34846012		34925009		34938007		34938008		34846016		34846014	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/19/93		1/19/93		1/19/93		1/19/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	15000	µg/kg	400 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
2-NITROANILINE	870 U	µg/kg	940 U	µg/kg	860 U	µg/kg	870 U	µg/kg	18000 U	µg/kg	960 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 UJ	µg/kg	400 UJ	µg/kg
3-NITROANILINE	870 U	µg/kg	940 U	µg/kg	860 U	µg/kg	870 U	µg/kg	18000 U	µg/kg	960 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	870 U	µg/kg	940 U	µg/kg	860 U	µg/kg	870 U	µg/kg	18000 U	µg/kg	960 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
4-CHLOROANILINE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
4-NITROANILINE	870 U	µg/kg	940 U	µg/kg	860 U	µg/kg	870 U	µg/kg	18000 U	µg/kg	960 U	µg/kg
4-NITROPHENOL	870 U	µg/kg	940 U	µg/kg	860 U	µg/kg	870 U	µg/kg	18000 U	µg/kg	960 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	1400 J	µg/kg	400 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
ANTHRACENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
BENZO(A)PYRENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	390 U	µg/kg	350 UJ	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	360 U	µg/kg	390 U	µg/kg	350 UJ	µg/kg	600 J	µg/kg	7300 U	µg/kg	400 UJ	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	390 U	µg/kg	350 UJ	µg/kg	360 UJ	µg/kg	7300 U	µg/kg	400 U	µg/kg
CARBAZOLE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 UJ	µg/kg	400 UJ	µg/kg
CHRYSENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	390 U	µg/kg	350 UJ	µg/kg	360 UJ	µg/kg	7300 U	µg/kg	400 U	µg/kg
DIBENZO(A,H)ANTHRACENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
FLUORANTHENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
FLUORENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	2600 J	µg/kg	400 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
ISOPHORONE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	1600 J	µg/kg	400 U	µg/kg
NAPHTHALENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	2500 J	µg/kg	400 U	µg/kg
NITROBENZENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
PENTACHLOROPHENOL	870 UJ	µg/kg	940 UJ	µg/kg	860 U	µg/kg	870 U	µg/kg	18000 U	µg/kg	960 U	µg/kg
PHENANTHRENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	5100 J	µg/kg	400 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB5-45-47A		32SB5-5-7		32SB5-61-63		32SB5-95-97		32SB6-0-2		32SB6-10-12	
LAB ID NUMBER	34846012		34925009		34938007		34938008		34846016		34846014	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/19/93		1/19/93		1/19/93		1/19/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	7300 U	µg/kg	400 U	µg/kg
PYRENE	360 U	µg/kg	390 U	µg/kg	350 U	µg/kg	360 U	µg/kg	1200 J	µg/kg	400 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
4,4'-DDE	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
4,4'-DDT	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
ALDRIN	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
ALPHA-BHC	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
ALPHA-CHLORDANE	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
AROCLOR-1016	36 UJ	µg/kg	39 UJ	µg/kg	35 U	µg/kg	36 U	µg/kg	36 UJ	µg/kg	40 UJ	µg/kg
AROCLOR-1221	73 UJ	µg/kg	79 UJ	µg/kg	71 U	µg/kg	74 U	µg/kg	74 UJ	µg/kg	81 UJ	µg/kg
AROCLOR-1232	36 UJ	µg/kg	39 UJ	µg/kg	35 U	µg/kg	36 U	µg/kg	36 UJ	µg/kg	40 UJ	µg/kg
AROCLOR-1242	36 UJ	µg/kg	39 UJ	µg/kg	35 U	µg/kg	36 U	µg/kg	36 UJ	µg/kg	40 UJ	µg/kg
AROCLOR-1248	36 UJ	µg/kg	39 UJ	µg/kg	35 U	µg/kg	36 U	µg/kg	36 UJ	µg/kg	40 UJ	µg/kg
AROCLOR-1254	36 UJ	µg/kg	39 UJ	µg/kg	35 U	µg/kg	36 U	µg/kg	160 J	µg/kg	40 UJ	µg/kg
AROCLOR-1260	36 UJ	µg/kg	39 UJ	µg/kg	35 U	µg/kg	36 U	µg/kg	36 UJ	µg/kg	40 UJ	µg/kg
BETA-BHC	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
DELTA-BHC	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
DIELDRIN	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
ENDOSULFAN I	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
ENDOSULFAN II	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
ENDOSULFAN SULFATE	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
ENDRIN	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
ENDRIN ALDEHYDE	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
ENDRIN KETONE	3.6 UJ	µg/kg	3.9 UJ	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 UJ	µg/kg	4 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
GAMMA-CHLORDANE	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
HEPTACHLOR	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg
METHOXYCHLOR	18 UJ	µg/kg	20 UJ	µg/kg	18 U	µg/kg	19 U	µg/kg	19 UJ	µg/kg	20 UJ	µg/kg
TOXAPHENE	180 UJ	µg/kg	200 UJ	µg/kg	180 U	µg/kg	190 U	µg/kg	190 UJ	µg/kg	200 UJ	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.8 U	mg/kg	5.8	mg/kg	1.7 U	mg/kg	1.8 U	mg/kg	12300	mg/kg	62.5	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	838	mg/kg	33200	mg/kg	343	mg/kg	789	mg/kg	6980	mg/kg	26100	mg/kg
ANTIMONY	5.3 U	mg/kg	5.7 U	mg/kg	5.3 U	mg/kg	5.5 U	mg/kg	2.7 U	mg/kg	2.9 U	mg/kg
ARSENIC	1.4 J	mg/kg	2.1 J	mg/kg	0.4 J	mg/kg	0.37 J	mg/kg	0.46 J	mg/kg	3.3	mg/kg
BARIUM	1.6 J	mg/kg	16.5 J	mg/kg	0.14 J	mg/kg	1.9 J	mg/kg	10.1 J	mg/kg	14.7 J	mg/kg
BERYLLIUM	0.06 U	mg/kg	0.21 J	mg/kg	0.06 U	mg/kg	0.06 U	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg
CADMIUM	0.85 U	mg/kg	0.92 U	mg/kg	0.84 U	mg/kg	0.89 U	mg/kg	0.26 U	mg/kg	0.44 J	mg/kg
CALCIUM	7.1 U	mg/kg	251 J	mg/kg	32 J	mg/kg	8.2 J	mg/kg	497 J	mg/kg	138 J	mg/kg
CHROMIUM	1 J	mg/kg	26.3	mg/kg	2.3	mg/kg	2 J	mg/kg	8.4	mg/kg	24	mg/kg
COBALT	0.49 U	mg/kg	0.52 U	mg/kg	0.51 J	mg/kg	0.88 J	mg/kg	1.4 J	mg/kg	1.4 U	mg/kg
COPPER	0.58 J	mg/kg	7.2	mg/kg	0.53 J	mg/kg	1.3 J	mg/kg	3.9 J	mg/kg	8.4	mg/kg
CYANIDE	0.51 J	mg/kg	0.56 J	mg/kg	0.4 J	mg/kg	0.45 J	mg/kg	0.16 U	mg/kg	0.18 U	mg/kg
IRON	79.1	mg/kg	16000	mg/kg	190	mg/kg	98.2	mg/kg	3350	mg/kg	12100	mg/kg
LEAD	0.7	mg/kg	3	mg/kg	0.2 J	mg/kg	1.2 J	mg/kg	9.8	mg/kg	3.4	mg/kg
MAGNESIUM	7.9 J	mg/kg	243 J	mg/kg	8.7 J	mg/kg	16.6 J	mg/kg	131 J	mg/kg	234 J	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB5-45-47A		32SB5-5-7		32SB5-61-63		32SB5-95-97		32SB6-0-2		32SB6-10-12	
LAB ID NUMBER	34846012		34925009		34938007		34938008		34846016		34846014	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/19/93		1/19/93		1/19/93		1/19/93		1/12/93		1/12/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	0.92 J	mg/kg	53.5	mg/kg	1.1 J	mg/kg	1.1 J	mg/kg	61.4	mg/kg	10.7	mg/kg
MERCURY	0.02 U	mg/kg	0.02 J	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.04	mg/kg	0.04	mg/kg
NICKEL	2.7 U	mg/kg	4.4 J	mg/kg	2.7 U	mg/kg	2.8 U	mg/kg	2.5 J	mg/kg	2.8 J	mg/kg
POTASSIUM	111 U	mg/kg	146 J	mg/kg	109 U	mg/kg	115 U	mg/kg	203 J	mg/kg	474 J	mg/kg
SELENIUM	0.52 J	mg/kg	0.97 J	mg/kg	0.45 U	mg/kg	0.99 J	mg/kg	0.11 U	mg/kg	0.23 J	mg/kg
SILVER	0.52 U	mg/kg	0.56 U	mg/kg	0.52 U	mg/kg	0.77 J	mg/kg	0.46 U	mg/kg	0.5 U	mg/kg
SODIUM	12 U	mg/kg	23.5 J	mg/kg	11.9 U	mg/kg	12.5 U	mg/kg	193 J	mg/kg	235 J	mg/kg
THALLIUM	0.55 U	mg/kg	0.59 U	mg/kg	0.54 U	mg/kg	0.57 U	mg/kg	0.15 U	mg/kg	0.17 U	mg/kg
VANADIUM	0.95 J	mg/kg	43.1	mg/kg	0.9 J	mg/kg	1.4 J	mg/kg	8.8 J	mg/kg	42.4	mg/kg
ZINC	1.3 J	mg/kg	9.1	mg/kg	3.4 J	mg/kg	0.44 J	mg/kg	8.5	mg/kg	8.5	mg/kg

Blank space indicates chemical not analyzed for.
A or D sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB6-20-22		32SB6-30-32		32SB6-45-47		32SB6-45-47A		32SB6-5-7		32SB6-5-7A	
LAB ID NUMBER	34846015		34846013		34846011		34846012		34847001		34847002	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/11/93		1/11/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	3 J	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
ACETONE	47	µg/kg	49	µg/kg	72	µg/kg	95	µg/kg	54 J	µg/kg	75	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 UJ	µg/kg	11 UJ	µg/kg	11 U	µg/kg	11 UJ	µg/kg	58 UJ	µg/kg	11 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	58 U	µg/kg	11 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	840 U	µg/kg	840 U	µg/kg	910 U	µg/kg	870 U	µg/kg	910 U	µg/kg	900 U	µg/kg
2,4,6-TRICHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	840 U	µg/kg	840 U	µg/kg	910 U	µg/kg	870 U	µg/kg	910 U	µg/kg	900 U	µg/kg
2,4-DINITROTOLUENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB6-20-22		32SB6-30-32		32SB6-45-47		32SB6-45-47A		32SB6-5-7		32SB6-5-7A	
LAB ID NUMBER	34846015		34846013		34846011		34846012		34847001		34847002	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/11/93		1/11/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	52 J	µg/kg	370 U	µg/kg
2-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-NITROANILINE	840 U	µg/kg	840 U	µg/kg	910 U	µg/kg	870 U	µg/kg	910 U	µg/kg	900 U	µg/kg
2-NITROPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	350 UJ	µg/kg	350 UJ	µg/kg	370 UJ	µg/kg	360 UJ	µg/kg	370 U	µg/kg	370 U	µg/kg
3-NITROANILINE	840 U	µg/kg	840 U	µg/kg	910 U	µg/kg	870 U	µg/kg	910 U	µg/kg	900 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	840 U	µg/kg	840 U	µg/kg	910 U	µg/kg	870 U	µg/kg	910 U	µg/kg	900 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-NITROANILINE	840 U	µg/kg	840 U	µg/kg	910 U	µg/kg	870 U	µg/kg	910 U	µg/kg	900 U	µg/kg
4-NITROPHENOL	840 U	µg/kg	840 U	µg/kg	910 U	µg/kg	870 U	µg/kg	910 U	µg/kg	900 U	µg/kg
ACENAPHTHENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ANTHRACENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(A)PYRENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(B)FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	µg/kg	350 UJ	µg/kg	370 UJ	µg/kg	360 UJ	µg/kg	73 J	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CARBAZOLE	350 UJ	µg/kg	350 UJ	µg/kg	370 UJ	µg/kg	360 UJ	µg/kg	370 U	µg/kg	370 U	µg/kg
CHRYSENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 UJ	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZOFURAN	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORANTHENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ISOPHORONE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSODIPHENYLAMINE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NAPHTHALENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NITROBENZENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	840 U	µg/kg	840 U	µg/kg	910 U	µg/kg	870 U	µg/kg	910 U	µg/kg	900 U	µg/kg
PHENANTHRENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	59 J	µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB6-20-22		32SB6-30-32		32SB6-45-47		32SB6-45-47A		32SB6-5-7		32SB6-5-7A	
LAB ID NUMBER	34846015		34846013		34846011		34846012		34847001		34847002	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/11/93		1/11/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PYRENE	350 U	µg/kg	350 U	µg/kg	370 U	µg/kg	360 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
4,4'-DDE	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
4,4'-DDT	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ALDRIN	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-BHC	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-CHLORDANE	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
AROCLOR-1016	35 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1221	71 UJ	µg/kg	71 UJ	µg/kg	76 UJ	µg/kg	73 UJ	µg/kg	76 UJ	µg/kg	75 UJ	µg/kg
AROCLOR-1232	35 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1242	35 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1248	35 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1254	35 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
AROCLOR-1260	35 UJ	µg/kg	35 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	37 UJ	µg/kg	37 UJ	µg/kg
BETA-BHC	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
DELTA-BHC	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
DIELDRIN	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN I	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
ENDOSULFAN II	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDOSULFAN SULFATE	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN ALDEHYDE	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
ENDRIN KETONE	3.5 UJ	µg/kg	3.5 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.7 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
GAMMA-CHLORDANE	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg	1.9 UJ	µg/kg
METHOXYCHLOR	18 UJ	µg/kg	18 UJ	µg/kg	19 UJ	µg/kg	18 UJ	µg/kg	19 UJ	µg/kg	19 UJ	µg/kg
TOXAPHENE	180 UJ	µg/kg	180 UJ	µg/kg	190 UJ	µg/kg	180 UJ	µg/kg	190 UJ	µg/kg	190 UJ	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	1.7 U	mg/kg	1.7 U	mg/kg	1.8 U	mg/kg	1.8 U	mg/kg	104	mg/kg	315	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	245	mg/kg	429	mg/kg	369	mg/kg	419	mg/kg	10200	mg/kg	13900	mg/kg
ANTIMONY	2.6 U	mg/kg	2.5 U	mg/kg	2.7 U	mg/kg	2.6 U	mg/kg	2.7 U	mg/kg	2.7 U	mg/kg
ARSENIC	0.15 U	mg/kg	0.15 U	mg/kg	0.2 J	mg/kg	0.15 U	mg/kg	1.8 J	mg/kg	1.7 J	mg/kg
BARIUM	0.12 J	mg/kg	0.12 J	mg/kg	1.1 J	mg/kg	0.13 J	mg/kg	12.7 J	mg/kg	16.7 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg
CADMIUM	0.25 U	mg/kg	0.25 U	mg/kg	0.27 U	mg/kg	0.26 U	mg/kg	0.27 U	mg/kg	0.27 U	mg/kg
CALCIUM	62.7 J	mg/kg	57.2 J	mg/kg	83.9 J	mg/kg	76.4 J	mg/kg	335 J	mg/kg	502 J	mg/kg
CHROMIUM	0.78 U	mg/kg	1.3 J	mg/kg	1.5 J	mg/kg	0.88 J	mg/kg	11.2	mg/kg	12.9	mg/kg
COBALT	1.2 U	mg/kg	1.2 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg	1.3 U	mg/kg
COPPER	0.75 J	mg/kg	0.79 J	mg/kg	1.2 J	mg/kg	0.77 J	mg/kg	5.2 J	mg/kg	7.8	mg/kg
CYANIDE	0.16 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg	0.17 U	mg/kg
IRON	82	mg/kg	64.8	mg/kg	102	mg/kg	114	mg/kg	9470	mg/kg	9630	mg/kg
LEAD	0.23 J	mg/kg	0.19 J	mg/kg	0.61 J	mg/kg	0.37 J	mg/kg	3.7	mg/kg	3.3	mg/kg
MAGNESIUM	19.9 J	mg/kg	12.6 J	mg/kg	21.3 J	mg/kg	18.8 J	mg/kg	125 J	mg/kg	264 J	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB6-20-22		32SB6-30-32		32SB6-45-47		32SB6-45-47A		32SB6-5-7		32SB6-5-7A	
LAB ID NUMBER	34846015		34846013		34846011		34846012		34847001		34847002	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/12/93		1/12/93		1/12/93		1/12/93		1/11/93		1/11/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	0.51 J	mg/kg	0.82 J	mg/kg	2.4 J	mg/kg	3.5	mg/kg	20	mg/kg	29.5	mg/kg
MERCURY	0.03	mg/kg	0.03	mg/kg	0.03 J	mg/kg	0.03 J	mg/kg	0.03 UJ	mg/kg	0.03 UJ	mg/kg
NICKEL	1.6 U	mg/kg	1.6 U	mg/kg	1.7 U	mg/kg	1.7 U	mg/kg	1.9 J	mg/kg	2.2 J	mg/kg
POTASSIUM	70.1 J	mg/kg	81.7 J	mg/kg	84.5 J	mg/kg	74 J	mg/kg	315 J	mg/kg	382 J	mg/kg
SELENIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.29 UJ	mg/kg	0.21 UJ	mg/kg
SILVER	0.44 U	mg/kg	0.44 U	mg/kg	0.48 U	mg/kg	0.46 U	mg/kg	0.47 U	mg/kg	0.47 U	mg/kg
SODIUM	155 J	mg/kg	164 J	mg/kg	205 J	mg/kg	179 J	mg/kg	197 J	mg/kg	180 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.15 U	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg
VANADIUM	0.59 J	mg/kg	0.4 U	mg/kg	1.4 J	mg/kg	1.5 J	mg/kg	23.2	mg/kg	24.3	mg/kg
ZINC	1.8 J	mg/kg	1.5 J	mg/kg	3.4 J	mg/kg	3 J	mg/kg	7 UJ	mg/kg	11.8	mg/kg

Blank space indicates chemical not analyzed for.
A or D [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB7-0-2		32SB7-15-17		32SB7-30-32		32SB7-6-7		32SB8-13-15		32SB8-6-7	
LAB ID NUMBER	34938004		34938006		34956001		34938005		34956008		34956004	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/20/93		1/20/93		1/21/93		1/20/93		1/21/93		1/21/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 UJ	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg
2-HEXANONE	11 UJ	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg
4-METHYL-2-PENTANONE	11 UJ	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg
ACETONE	15 J	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BENZENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	2900 UJ	µg/kg	1300 UJ	µg/kg	2800 UJ	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	2900 UJ	µg/kg	1300 UJ	µg/kg	2800 UJ	µg/kg	11 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
STYRENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	1100 J	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	2900 U	µg/kg	1300 U	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	2900 UJ	µg/kg	1300 UJ	µg/kg	2800 UJ	µg/kg	11 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11000	µg/kg	770 J	µg/kg	2800 U	µg/kg	11 U	µg/kg	11 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,2-DICHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,3-DICHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
1,4-DICHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4,5-TRICHLOROPHENOL	850 U	µg/kg	940 U	µg/kg	1800 U	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
2,4,6-TRICHLOROPHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DICHLOROPHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DIMETHYLPHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,4-DINITROPHENOL	850 U	µg/kg	940 U	µg/kg	1800 U	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
2,4-DINITROTOLUENE	350 U	µg/kg	390 U	µg/kg	730 UJ	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2,6-DINITROTOLUENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-CHLORONAPHTHALENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB7-0-2		32SB7-15-17		32SB7-30-32		32SB7-5-7		32SB8-13-15		32SB8-5-7	
LAB ID NUMBER	34938004		34938006		34956001		34938005		34956005		34956004	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/20/93		1/20/93		1/21/93		1/20/93		1/21/93		1/21/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-METHYLNAPHTHALENE	350 U	µg/kg	27000	µg/kg	2600	µg/kg	3200	µg/kg	380 U	µg/kg	360 U	µg/kg
2-METHYLPHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
2-NITROANILINE	850 U	µg/kg	940 U	µg/kg	1800 U	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
2-NITROPHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
3,3'-DICHLOROBENZIDINE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
3-NITROANILINE	850 UJ	µg/kg	940 U	µg/kg	1800 U	µg/kg	910 U	µg/kg	920 UJ	µg/kg	870 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	850 U	µg/kg	940 U	µg/kg	1800 U	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-CHLOROANILINE	350 UJ	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-METHYLPHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
4-NITROANILINE	850 UJ	µg/kg	940 U	µg/kg	1800 U	µg/kg	910 U	µg/kg	920 UJ	µg/kg	870 UJ	µg/kg
4-NITROPHENOL	850 U	µg/kg	940 U	µg/kg	1800 UJ	µg/kg	910 U	µg/kg	920 U	µg/kg	870 U	µg/kg
ACENAPHTHENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ACENAPHTHYLENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ANTHRACENE	350 U	µg/kg	53 J	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(A)ANTHRACENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(A)PYRENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(B)FLUORANTHENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BENZO(G,H,I)PERYLENE	350 UJ	µg/kg	390 UJ	µg/kg	730 U	µg/kg	370 UJ	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
BENZO(K)FLUORANTHENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	350 UJ	µg/kg	440 J	µg/kg	730 UJ	µg/kg	370 UJ	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
BUTYLBENZYL PHTHALATE	350 UJ	µg/kg	390 UJ	µg/kg	730 UJ	µg/kg	370 UJ	µg/kg	380 U	µg/kg	360 UJ	µg/kg
CARBAZOLE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
CHRYSENE	350 UJ	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
DI-N-BUTYL PHTHALATE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DI-N-OCTYL PHTHALATE	350 UJ	µg/kg	390 UJ	µg/kg	730 UJ	µg/kg	370 UJ	µg/kg	380 UJ	µg/kg	360 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIBENZOFURAN	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIETHYL PHTHALATE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
DIMETHYL PHTHALATE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
FLUORANTHENE	350 U	µg/kg	40 J	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
FLUORENE	350 U	µg/kg	1000 J	µg/kg	220 J	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROBENZENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROBUTADIENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
HEXACHLOROETHANE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
INDENO(1,2,3-CD)PYRENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
ISOPHORONE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
N-NITROSODIPHENYLAMINE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
NAPHTHALENE	350 U	µg/kg	21000	µg/kg	1100	µg/kg	7200	µg/kg	380 U	µg/kg	360 U	µg/kg
NITROBENZENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PENTACHLOROPHENOL	850 UJ	µg/kg	940 U	µg/kg	1800 U	µg/kg	910 U	µg/kg	920 UJ	µg/kg	870 UJ	µg/kg
PHENANTHRENE	350 U	µg/kg	340 J	µg/kg	79 J	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg

Blank sp--e indicates chemical not analyzed for.
A or D ample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB7-0-2		32SB7-15-17		32SB7-30-32		32SB7-5-7		32SB8-13-15		32SB8-5-7	
LAB ID NUMBER	34938004		34938006		34956001		34938005		34956005		34956004	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/20/93		1/20/93		1/21/93		1/20/93		1/21/93		1/21/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PYRENE	350 U	µg/kg	390 U	µg/kg	730 U	µg/kg	370 U	µg/kg	380 U	µg/kg	360 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	2.2 J	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
4,4'-DDE	0.69 J	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
4,4'-DDT	3.5 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
ALDRIN	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-BHC	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-CHLORDANE	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
AROCLOR-1016	35 U	µg/kg	39 U	µg/kg	36 U	µg/kg	38 U	µg/kg	37 U	µg/kg	36 U	µg/kg
AROCLOR-1221	71 U	µg/kg	79 U	µg/kg	73 U	µg/kg	77 U	µg/kg	76 U	µg/kg	73 U	µg/kg
AROCLOR-1232	35 U	µg/kg	39 U	µg/kg	36 U	µg/kg	38 U	µg/kg	37 U	µg/kg	36 U	µg/kg
AROCLOR-1242	35 U	µg/kg	39 U	µg/kg	36 U	µg/kg	38 U	µg/kg	37 U	µg/kg	36 U	µg/kg
AROCLOR-1248	35 U	µg/kg	39 U	µg/kg	36 U	µg/kg	38 U	µg/kg	37 U	µg/kg	36 U	µg/kg
AROCLOR-1254	35 U	µg/kg	39 U	µg/kg	36 U	µg/kg	38 U	µg/kg	37 U	µg/kg	36 U	µg/kg
AROCLOR-1260	35 U	µg/kg	39 U	µg/kg	36 U	µg/kg	38 U	µg/kg	37 U	µg/kg	36 U	µg/kg
BETA-BHC	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DIELDRIN	3.5 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN I	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ENDOSULFAN II	3.5 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN SULFATE	3.5 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
ENDRIN	3.5 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
ENDRIN ALDEHYDE	3.5 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
ENDRIN KETONE	3.5 U	µg/kg	3.9 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg	3.7 U	µg/kg	3.6 U	µg/kg
GAMMA-BHC (LINDANE)	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
GAMMA-CHLORDANE	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR EPOXIDE	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
METHOXYCHLOR	18 U	µg/kg	20 U	µg/kg	18 U	µg/kg	20 U	µg/kg	19 U	µg/kg	18 U	µg/kg
TOXAPHENE	180 U	µg/kg	200 U	µg/kg	180 U	µg/kg	200 U	µg/kg	190 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	7180	mg/kg	2580	mg/kg	2650	mg/kg	2310	mg/kg	1.9 U	mg/kg	1.8 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	9970	mg/kg	2780	mg/kg	302	mg/kg	14700	mg/kg	1630	mg/kg	5470	mg/kg
ANTIMONY	5.3 U	mg/kg	5.8 U	mg/kg	5.3 U	mg/kg	5.6 U	mg/kg	5.6 U	mg/kg	5.3 U	mg/kg
ARSENIC	2.8	mg/kg	1.8 J	mg/kg	0.41 J	mg/kg	2.7	mg/kg	1.2 J	mg/kg	2.5	mg/kg
BARIUM	11.1 J	mg/kg	4.4 J	mg/kg	0.43 J	mg/kg	18.7 J	mg/kg	3.8 J	mg/kg	10.9 J	mg/kg
BERYLLIUM	0.09 J	mg/kg	0.07 J	mg/kg	0.06 U	mg/kg	0.11 J	mg/kg	0.06 U	mg/kg	0.15 J	mg/kg
CADMIUM	0.85 U	mg/kg	0.93 U	mg/kg	0.84 U	mg/kg	0.9 U	mg/kg	0.9 U	mg/kg	0.86 U	mg/kg
CALCIUM	277 J	mg/kg	11.6 J	mg/kg	7 U	mg/kg	168 J	mg/kg	18.8 J	mg/kg	63 J	mg/kg
CHROMIUM	9.3	mg/kg	2.9	mg/kg	0.87 J	mg/kg	14.7	mg/kg	1.2 J	mg/kg	4.3	mg/kg
COBALT	1.5 J	mg/kg	0.99 J	mg/kg	0.48 U	mg/kg	2.5 J	mg/kg	0.51 U	mg/kg	0.69 J	mg/kg
COPPER	4.7 J	mg/kg	0.85 J	mg/kg	0.64 J	mg/kg	3.6 J	mg/kg	0.64 J	mg/kg	1.6 J	mg/kg
CYANIDE	0.46 J	mg/kg	0.49 J	mg/kg	0.49 J	mg/kg	0.52 J	mg/kg	0.46 J	mg/kg	0.41 J	mg/kg
IRON	5100	mg/kg	1600	mg/kg	77.4	mg/kg	7250	mg/kg	448	mg/kg	3950	mg/kg
LEAD	30.7	mg/kg	2.1 J	mg/kg	0.45 J	mg/kg	3.5	mg/kg	2.8	mg/kg	3.8	mg/kg
MAGNESIUM	147 J	mg/kg	43.5 J	mg/kg	7.6 U	mg/kg	284 J	mg/kg	41.5 J	mg/kg	67.2 J	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	32SB7-0-2		32SB7-15-17		32SB7-30-32		32SB7-5-7		32SB8-13-15		32SB8-5-7	
LAB ID NUMBER	34938004		34938006		34956001		34938005		34956005		34956004	
SITE	32		32		32		32		32		32	
DATE SAMPLED	1/20/93		1/20/93		1/21/93		1/20/93		1/21/93		1/21/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	71	mg/kg	2.3 J	mg/kg	0.47 J	mg/kg	48.1	mg/kg	3.5	mg/kg	18.1	mg/kg
MERCURY	0.02 U	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.02 U	mg/kg	0.02 J	mg/kg	0.02 U	mg/kg
NICKEL	2.8 J	mg/kg	2.9 U	mg/kg	2.7 U	mg/kg	4.7 J	mg/kg	2.8 U	mg/kg	2.7 U	mg/kg
POTASSIUM	257 J	mg/kg	191 J	mg/kg	110 U	mg/kg	331 J	mg/kg	117 U	mg/kg	111 U	mg/kg
SELENIUM	0.46 U	mg/kg	0.5 U	mg/kg	1.5	mg/kg	1.4	mg/kg	0.48 U	mg/kg	2.2	mg/kg
SILVER	0.52 U	mg/kg	0.57 U	mg/kg	0.52 U	mg/kg	0.7 J	mg/kg	0.55 U	mg/kg	0.52 U	mg/kg
SODIUM	21.3 J	mg/kg	30 J	mg/kg	11.9 U	mg/kg	24.1 J	mg/kg	12.7 U	mg/kg	12.1 U	mg/kg
THALLIUM	0.54 U	mg/kg	0.59 U	mg/kg	0.54 U	mg/kg	0.58 U	mg/kg	0.58 U	mg/kg	0.55 U	mg/kg
VANADIUM	13.7	mg/kg	9.3 J	mg/kg	0.69 J	mg/kg	19.2	mg/kg	5.1 J	mg/kg	9.3 J	mg/kg
ZINC	10.6	mg/kg	0.6 J	mg/kg	0.34 U	mg/kg	6.4	mg/kg	0.36 U	mg/kg	1.8 J	mg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32DP00100		W32SB00901		W32SB01001		W32SB01002		W32SB01101		W32SB01102	
LAB ID NUMBER	9803042 - 05		9803058 - 05		9803063 - 06		9803063 - 08		9803063 - 03		9803063 - 04	
SITE	32		32		32		32		32		32	
DATE SAMPLED			3/9/98		3/10/98		3/10/98		3/9/98		3/9/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1,2-TRICHLOROETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROPROPANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
2-BUTANONE	6 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg
2-HEXANONE	6 U	µg/kg	5 U	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg
4-METHYL-2-PENTANONE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 UJ	µg/kg	6 U	µg/kg	5 U	µg/kg
ACETONE	13 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg
BENZENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMODICHLOROMETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMOFORM	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMOMETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CARBON DISULFIDE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CARBON TETRACHLORIDE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROBENZENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROFORM	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROMETHANE	6 U	µg/kg	5 U	µg/kg	6 UJ	µg/kg	5 U	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
DIBROMOCHLOROMETHANE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
ETHYLBENZENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
METHYL TERT-BUTYL ETHER	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
METHYLENE CHLORIDE	10 U	µg/kg	7 U	µg/kg	8 U	µg/kg	5 U	µg/kg	9 U	µg/kg	9 U	µg/kg
STYRENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TETRACHLOROETHENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TOLUENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TRICHLOROETHENE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
VINYL CHLORIDE	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
XYLENES, TOTAL	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	350 UJ	µg/kg	400 UJ	µg/kg	350 UJ	µg/kg	380 UJ	µg/kg	350 UJ	µg/kg
2,4,5-TRICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DINITROPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg

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CTO 0028

Rev. 1
5/4/99

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32DP00100		W32SB00901		W32SB01001		W32SB01002		W32SB01101		W32SB01102	
LAB ID NUMBER	9803042 - 05		9803058 - 05		9803063 - 06		9803063 - 08		9803063 - 03		9803063 - 04	
SITE	32		32		32		32		32		32	
DATE SAMPLED			3/9/98		3/10/98		3/10/98		3/9/98		3/9/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-NITROANILINE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
3-NITROANILINE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-NITROANILINE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
4-NITROPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ACENAPHTHENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ANTHRACENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(A)PYRENE	110 UJ	µg/kg	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	µg/kg	56 J	µg/kg	400 U	µg/kg	43 J	µg/kg	380 U	µg/kg	67 J	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
CARBAZOLE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
CHRYSENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
FLUORENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
ISOPHORONE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	µg/kg	21 U	µg/kg	24 U	µg/kg	21 U	µg/kg	23 U	µg/kg	21 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
NAPHTHALENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
NITROBENZENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
PENTACHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
PHENANTHRENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg

Blank s[illegible] indicates chemical not analyzed for.
A or [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32DP00100		W32SB00901		W32SB01001		W32SB01002		W32SB01101		W32SB01102	
LAB ID NUMBER	9803042 - 05		9803058 - 05		9803063 - 06		9803063 - 08		9803063 - 03		9803063 - 04	
SITE	32		32		32		32		32		32	
DATE SAMPLED			3/9/98		3/10/98		3/10/98		3/9/98		3/9/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
PYRENE	370 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	380 U	µg/kg	350 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
4,4'-DDE	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
4,4'-DDT	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ALDRIN	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-CHLORDANE	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
AROCLOR-1016	37 U	µg/kg	35 U	µg/kg	39 U	µg/kg	35 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1221	73 U	µg/kg	71 U	µg/kg	79 U	µg/kg	71 U	µg/kg	77 U	µg/kg	70 U	µg/kg
AROCLOR-1232	37 U	µg/kg	35 U	µg/kg	39 U	µg/kg	35 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1242	37 U	µg/kg	35 U	µg/kg	39 U	µg/kg	35 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1248	37 U	µg/kg	35 U	µg/kg	39 U	µg/kg	35 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1254	37 U	µg/kg	35 U	µg/kg	39 U	µg/kg	35 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1260	37 U	µg/kg	35 U	µg/kg	39 U	µg/kg	35 U	µg/kg	38 U	µg/kg	35 U	µg/kg
BETA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DIELDRIN	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDOSULFAN I	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ENDOSULFAN II	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDOSULFAN SULFATE	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDRIN	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDRIN ALDEHYDE	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDRIN KETONE	3.7 U	µg/kg	3.5 U	µg/kg	3.9 U	µg/kg	3.5 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
GAMMA-BHC (LINDANE)	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
GAMMA-CHLORDANE	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR EPOXIDE	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
METHOXYCHLOR	18 U	µg/kg	18 U	µg/kg	20 U	µg/kg	18 U	µg/kg	19 U	µg/kg	18 U	µg/kg
TOXAPHENE	180 U	µg/kg	180 U	µg/kg	200 U	µg/kg	180 U	µg/kg	190 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	9.2 U	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)		mg/kg	9.49	mg/kg	9.5 U	mg/kg	9.2 U	mg/kg	9.6	mg/kg	8.9 U	mg/kg
METALS												
ALUMINUM	3030	mg/kg	659	mg/kg	10700	mg/kg	2400	mg/kg	9820	mg/kg	1550	mg/kg
ANTIMONY	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.2 UJ	mg/kg	1.1 UJ	mg/kg	1.2 UJ	mg/kg	1 UJ	mg/kg
ARSENIC	2.2 U	mg/kg	2.1 U	mg/kg	2.4 U	mg/kg	2.1 U	mg/kg	2.3 U	mg/kg	2.1 U	mg/kg
BARIUM	2.7	mg/kg	2.1 U	mg/kg	8.4	mg/kg	2.3	mg/kg	7.4	mg/kg	2.1 U	mg/kg
BERYLLIUM	0.66 U	mg/kg	0.63 U	mg/kg	0.71 U	mg/kg	0.64 U	mg/kg	0.69 U	mg/kg	0.63 U	mg/kg
CADMIUM	0.66 U	mg/kg	0.63 U	mg/kg	0.71 U	mg/kg	0.64 U	mg/kg	0.69 U	mg/kg	0.63 U	mg/kg
CALCIUM	220 U	mg/kg	211 U	mg/kg	237 U	mg/kg	212 U	mg/kg	231 U	mg/kg	209 U	mg/kg
CHROMIUM	4.5 J	mg/kg	2 J	mg/kg	11.1 J	mg/kg	3.2 J	mg/kg	13 J	mg/kg	3.3 J	mg/kg
COBALT	1.1 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1 U	mg/kg
COPPER	1.1 U	mg/kg	1.1 U	mg/kg	3.5 J	mg/kg	1.1 U	mg/kg	2.5 J	mg/kg	1 U	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
IRON	332	mg/kg	170	mg/kg	4300	mg/kg	221	mg/kg	5640	mg/kg	171	mg/kg
LEAD	1.5 J	mg/kg	1.1 J	mg/kg	4.3 J	mg/kg	1.1 J	mg/kg	4.9 J	mg/kg	1 J	mg/kg
MAGNESIUM	34.8 U	mg/kg	16.6 U	mg/kg	101	mg/kg	30 U	mg/kg	70.1	mg/kg	15.8 U	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32DP00100		W32SB00901		W32SB01001		W32SB01002		W32SB01101		W32SB01102	
LAB ID NUMBER	9803042 - 06		9803058 - 05		9803063 - 06		9803063 - 08		9803063 - 03		9803063 - 04	
SITE	32		32		32		32		32		32	
DATE SAMPLED			3/9/98		3/10/98		3/10/98		3/9/98		3/9/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	1.4	mg/kg	1.7	mg/kg	7.3	mg/kg	1.1 U	mg/kg	4.3	mg/kg	1 U	mg/kg
MERCURY	0.04 U	mg/kg	0.03 U	mg/kg	0.11	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg
NICKEL	1.1 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1 U	mg/kg
POTASSIUM	63.3 U	mg/kg	24.1 U	mg/kg	100	mg/kg	50.4	mg/kg	134	mg/kg	33.9 U	mg/kg
SELENIUM	1.1 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1 U	mg/kg
SILVER	0.66 U	mg/kg	0.63 U	mg/kg	0.71 U	mg/kg	0.64 U	mg/kg	0.69 U	mg/kg	0.63 U	mg/kg
SODIUM	110 U	mg/kg	105 U	mg/kg	118 U	mg/kg	106 U	mg/kg	115 U	mg/kg	104 U	mg/kg
THALLIUM	2.2 U	mg/kg	2.1 U	mg/kg	2.4 U	mg/kg	2.1 U	mg/kg	2.3 U	mg/kg	2.1 U	mg/kg
VANADIUM	4.1	mg/kg	1.3	mg/kg	19.5	mg/kg	3.9	mg/kg	28.7	mg/kg	2.6	mg/kg
ZINC	2.2 UJ	mg/kg	2.1 U	mg/kg	2.4 U	mg/kg	2.1 U	mg/kg	2.3 U	mg/kg	2.1 U	mg/kg

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A or D [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01201		W32SB01202		W32SB01203		W32SB01301		W32SB01302		W32SB01303	
LAB ID NUMBER	9803058 - 02		9803058 - 03		9803058 - 04		9803153 - 16		9803153 - 17		9803153 - 18	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/6/98		3/7/98		3/8/98		3/22/98		3/22/98		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
1,1,2,2-TETRACHLOROETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
1,1,2-TRICHLOROETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
1,1-DICHLOROETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
1,1-DICHLOROETHENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
1,2-DICHLOROETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
1,2-DICHLOROETHENE (TOTAL)	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
1,2-DICHLOROPROPANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
2-BUTANONE	6 UR	µg/kg	21 J	µg/kg	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg
2-HEXANONE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg
4-METHYL-2-PENTANONE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
ACETONE	12 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 J	µg/kg	5 UJ	µg/kg
BENZENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
BROMODICHLOROMETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
BROMOFORM	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
BROMOMETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
CARBON DISULFIDE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
CARBON TETRACHLORIDE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
CHLOROBENZENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
CHLOROETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
CHLOROFORM	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
CHLOROMETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
CIS-1,3-DICHLOROPROPENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
DIBROMOCHLOROMETHANE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
ETHYLBENZENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
METHYL TERT-BUTYL ETHER	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
METHYLENE CHLORIDE	6 U	µg/kg	6 U	µg/kg	7 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
STYRENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
TETRACHLOROETHENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
TOLUENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	2 J	µg/kg
TRANS-1,3-DICHLOROPROPENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
TRICHLOROETHENE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
VINYL CHLORIDE	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
XYLENES, TOTAL	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	5 UJ	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 UJ	µg/kg	350 UJ	µg/kg	350 UJ	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2,4,5-TRICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2,4-DINITROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01201		W32SB01202		W32SB01203		W32SB01301		W32SB01302		W32SB01303	
LAB ID NUMBER	9803058 - 02		9803058 - 03		9803058 - 04		9803153 - 16		9803153 - 17		9803153 - 18	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/6/98		3/7/98		3/8/98		3/22/98		3/22/98		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
2-METHYLNAPHTHALENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
2-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
2-NITROANILINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 UJ	μg/kg	350 UJ	μg/kg
2-NITROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
3,3'-DICHLOROBENZIDINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 UJ	μg/kg	350 UJ	μg/kg
3-NITROANILINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 UJ	μg/kg	350 UJ	μg/kg
4,6-DINITRO-2-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
4-BROMOPHENYL PHENYL ETHER	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
4-CHLORO-3-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
4-CHLOROANILINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 UJ	μg/kg	360 UJ	μg/kg	350 UJ	μg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
4-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
4-NITROANILINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
4-NITROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 UJ	μg/kg	360 UJ	μg/kg	350 UJ	μg/kg
ACENAPHTHENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
ACENAPHTHYLENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
ANTHRACENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
BENZO(A)ANTHRACENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
BENZO(A)PYRENE	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg
BENZO(B)FLUORANTHENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
BENZO(G,H,I)PERYLENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
BENZO(K)FLUORANTHENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	μg/kg	79 J	μg/kg	350 U	μg/kg	350 UJ	μg/kg	52 J	μg/kg	100 J	μg/kg
BUTYLBENZYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 UJ	μg/kg	360 U	μg/kg	350 U	μg/kg
CARBAZOLE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
CHRYSENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
DI-N-BUTYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
DI-N-OCTYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 UJ	μg/kg	360 U	μg/kg	350 U	μg/kg
DIBENZO(A,H)ANTHRACENE	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg
DIBENZOFURAN	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
DIETHYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
DIMETHYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
FLUORANTHENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
FLUORENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
HEXACHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 UJ	μg/kg	360 U	μg/kg	350 U	μg/kg
HEXACHLOROBUTADIENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
HEXACHLOROETHANE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
INDENO(1,2,3-CD)PYRENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
ISOPHORONE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	μg/kg	21 U	μg/kg	21 U	μg/kg	21 U	μg/kg	22 U	μg/kg	21 U	μg/kg
N-NITROSODIPHENYLAMINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
NAPHTHALENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
NITROBENZENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 UJ	μg/kg	350 UJ	μg/kg
PENTACHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg
PHENANTHRENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	350 U	μg/kg	360 U	μg/kg	350 U	μg/kg

Blank space indicates chemical not analyzed for.
A or D [illegible] sample number indicates duplicate.

CTO 0028

Rev. 1
5/4/99

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01201		W32SB01202		W32SB01203		W32SB01301		W32SB01302		W32SB01303	
LAB ID NUMBER	9803058 - 02		9803058 - 03		9803058 - 04		9803153 - 16		9803153 - 17		9803153 - 18	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/6/98		3/7/98		3/8/98		3/22/98		3/22/98		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
PYRENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
4,4'-DDE	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
4,4'-DDT	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
ALDRIN	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
ALPHA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
ALPHA-CHLORDANE	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
AROCLOR-1016	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg	36 U	µg/kg
AROCLOR-1221	74 U	µg/kg	70 U	µg/kg	70 U	µg/kg	71 U	µg/kg	72 U	µg/kg	71 U	µg/kg
AROCLOR-1232	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg	36 U	µg/kg
AROCLOR-1242	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg	36 U	µg/kg
AROCLOR-1248	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg	36 U	µg/kg
AROCLOR-1254	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg	36 U	µg/kg
AROCLOR-1260	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg	35 U	µg/kg	36 U	µg/kg	36 U	µg/kg
BETA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg
DIELDRIN	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN I	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
ENDOSULFAN II	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
ENDOSULFAN SULFATE	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
ENDRIN	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
ENDRIN ALDEHYDE	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
ENDRIN KETONE	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.6 U	µg/kg
GAMMA-BHC (LINDANE)	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	19 U	µg/kg	18 U	µg/kg	18 U	µg/kg	18 U	µg/kg	18 U	µg/kg	18 U	µg/kg
TOXAPHENE	190 U	µg/kg	180 U	µg/kg	180 U	µg/kg	180 U	µg/kg	180 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)	21.6	mg/kg	8.8 U	mg/kg	9 U	mg/kg	9.5 U	mg/kg	8.8 U	mg/kg	8.9 U	mg/kg
METALS												
ALUMINUM	7650	mg/kg	1440	mg/kg	468	mg/kg	1570	mg/kg	537	mg/kg	621	mg/kg
ANTIMONY	1.1 UJ	mg/kg	1 UJ	mg/kg	1 UJ	mg/kg	0.34 UJ	mg/kg	0.24 UJ	mg/kg	0.37 UJ	mg/kg
ARSENIC	2.2 U	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	0.67 U	mg/kg	0.49 U	mg/kg	0.73 U	mg/kg
BARIUM	13.7	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	1.7 J	mg/kg	0.55 J	mg/kg	1 J	mg/kg
BERYLLIUM	0.67 U	mg/kg	0.63 U	mg/kg	0.62 U	mg/kg	0.2 U	mg/kg	0.15 U	mg/kg	0.22 U	mg/kg
CADMIUM	0.67 U	mg/kg	0.63 U	mg/kg	0.62 U	mg/kg	0.2 U	mg/kg	0.15 U	mg/kg	0.22 U	mg/kg
CALCIUM	222 U	mg/kg	209 U	mg/kg	206 U	mg/kg	67.1 U	mg/kg	48.8 U	mg/kg	73.3 U	mg/kg
CHROMIUM	14.5 J	mg/kg	2.4 J	mg/kg	3.9 J	mg/kg	2.4	mg/kg	3	mg/kg	9.5	mg/kg
COBALT	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	0.34 U	mg/kg	0.24 U	mg/kg	0.37 U	mg/kg
COPPER	2.8 J	mg/kg	1 U	mg/kg	1 U	mg/kg	0.34 U	mg/kg	0.24 U	mg/kg	0.37 U	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
IRON	3240	mg/kg	74.9	mg/kg	133	mg/kg	99.7	mg/kg	46	mg/kg	195	mg/kg
LEAD	3.5 J	mg/kg	0.86 J	mg/kg	1.1 J	mg/kg	0.98	mg/kg	0.45	mg/kg	0.85	mg/kg
MAGNESIUM	177	mg/kg	25.4 U	mg/kg	11 U	mg/kg	18.7 U	mg/kg	6.7 U	mg/kg	10.5 U	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01201		W32SB01202		W32SB01203		W32SB01301		W32SB01302		W32SB01303	
LAB ID NUMBER	9803058 - 02		9803058 - 03		9803058 - 04		9803153 - 16		9803153 - 17		9803153 - 18	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/6/98		3/7/98		3/8/98		3/22/98		3/22/98		3/22/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	39.6	mg/kg	1 U	mg/kg	1	mg/kg	0.57	mg/kg	0.42	mg/kg	1.3	mg/kg
MERCURY	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	3.6	mg/kg	1 U	mg/kg	1 U	mg/kg	0.34 U	mg/kg	0.26	mg/kg	1.7	mg/kg
POTASSIUM	108	mg/kg	22 U	mg/kg	15.3 U	mg/kg	32.8	mg/kg	9.5	mg/kg	16.9	mg/kg
SELENIUM	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	0.34 U	mg/kg	0.24 U	mg/kg	0.37 U	mg/kg
SILVER	0.67 U	mg/kg	0.63 U	mg/kg	0.62 U	mg/kg	0.2 U	mg/kg	0.15 U	mg/kg	0.22 U	mg/kg
SODIUM	111 U	mg/kg	105 U	mg/kg	103 U	mg/kg	33.6 U	mg/kg	24.4 U	mg/kg	36.6 U	mg/kg
THALLIUM	2.2 U	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	0.67 U	mg/kg	0.49 U	mg/kg	0.73 U	mg/kg
VANADIUM	9.9	mg/kg	1.1	mg/kg	1.5	mg/kg	1.2	mg/kg	0.48	mg/kg	1.4	mg/kg
ZINC	5.5	mg/kg	2.9	mg/kg	2.1 U	mg/kg	0.67 U	mg/kg	0.49 U	mg/kg	0.73 U	mg/kg

Blank s[illegible] indicates chemical not analyzed for.
A or [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01401		W32SB01402		W32SB01403		W32SB01404		W32SB01405		W32SB01502	
LAB ID NUMBER	9804041 - 02		9804041 - 03		9804041 - 04		9804041 - 05		9804041 - 06		9803083 - 06	
SITE	32		32		32		32		32		32	
DATE SAMPLED	4/4/98		4/4/98		4/4/98		4/4/98		4/4/98		3/9/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1,2-TRICHLOROETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1-DICHLOROETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1-DICHLOROETHENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROPROPANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
2-BUTANONE	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg
2-HEXANONE	5 UJ	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg
4-METHYL-2-PENTANONE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 UJ	µg/kg
ACETONE	5 UJ	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg	10	µg/kg	9 UJ	µg/kg	6 U	µg/kg
BENZENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMODICHLOROMETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMOFORM	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMOMETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CARBON DISULFIDE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CARBON TETRACHLORIDE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROBENZENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROFORM	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROMETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CIS-1,3-DICHLOROPROPENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
DIBROMOCHLOROMETHANE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
ETHYLBENZENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
METHYL TERT-BUTYL ETHER	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
METHYLENE CHLORIDE	6 U	µg/kg	5 U	µg/kg	8 U	µg/kg	22 U	µg/kg	5 U	µg/kg	6 U	µg/kg
STYRENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TETRACHLOROETHENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TOLUENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TRICHLOROETHENE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
VINYL CHLORIDE	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
XYLENES, TOTAL	5 UJ	µg/kg	5 U	µg/kg	5 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 UJ	µg/kg
2,4,5-TRICHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4-DINITROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01401		W32SB01402		W32SB01403		W32SB01404		W32SB01405		W32SB01502	
LAB ID NUMBER	9804041 - 02		9804041 - 03		9804041 - 04		9804041 - 05		9804041 - 06		9803063 - 05	
SITE	32		32		32		32		32		32	
DATE SAMPLED	4/4/98		4/4/98		4/4/98		4/4/98		4/4/98		3/9/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-NITROANILINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
3-NITROANILINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-CHLOROANILINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-METHYLPHENOL	360 UJ	µg/kg	350 UJ	µg/kg	360 UJ	µg/kg	350 UJ	µg/kg	360 UJ	µg/kg	380 U	µg/kg
4-NITROANILINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
4-NITROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
ANTHRACENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	100 U	µg/kg	110 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	200 J	µg/kg	49 J	µg/kg	470	µg/kg	45 J	µg/kg	56 J	µg/kg	380 U	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
CARBAZOLE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
CHRYSENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	400 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	110 U	µg/kg	110 U	µg/kg	100 U	µg/kg	110 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
FLUORANTHENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
FLUORENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
ISOPHORONE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	µg/kg	21 U	µg/kg	22 U	µg/kg	21 U	µg/kg	22 U	µg/kg	23 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
NAPHTHALENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
NITROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
PENTACHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
PHENANTHRENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01401		W32SB01402		W32SB01403		W32SB01404		W32SB01405		W32SB01602	
LAB ID NUMBER	9804041 - 02		9804041 - 03		9804041 - 04		9804041 - 05		9804041 - 06		9803083 - 05	
SITE	32		32		32		32		32		32	
DATE SAMPLED	4/4/98		4/4/98		4/4/98		4/4/98		4/4/98		3/9/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
PYRENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	380 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
4,4'-DDE	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
4,4'-DDT	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ALDRIN	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
AROCLOR-1016	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1221	72 U	µg/kg	70 U	µg/kg	72 U	µg/kg	69 U	µg/kg	72 U	µg/kg	77 U	µg/kg
AROCLOR-1232	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1242	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1248	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1254	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg
AROCLOR-1260	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	38 U	µg/kg
BETA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DELTA-BHC	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DIELDRIN	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDOSULFAN I	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDOSULFAN SULFATE	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDRIN	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDRIN ALDEHYDE	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
ENDRIN KETONE	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.8 U	µg/kg
GAMMA-BHC (LINDANE)	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	1.8 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	18 U	µg/kg	18 U	µg/kg	18 U	µg/kg	17 U	µg/kg	18 U	µg/kg	19 U	µg/kg
TOXAPHENE	180 U	µg/kg	180 U	µg/kg	180 U	µg/kg	170 U	µg/kg	180 U	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)	9 U	mg/kg	9.2 U	mg/kg	8.8 U	mg/kg	8.7 U	mg/kg	9 U	mg/kg	9.6 U	mg/kg
METALS												
ALUMINUM	1180	mg/kg	511	mg/kg	843	mg/kg	348	mg/kg	651	mg/kg	5990	mg/kg
ANTIMONY	0.54 UJ	mg/kg	0.52 UJ	mg/kg	0.51 UJ	mg/kg	0.5 UJ	mg/kg	0.53 UJ	mg/kg	1.1 UJ	mg/kg
ARSENIC	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	1.1 U	mg/kg	2.3 U	mg/kg
BARIUM	1.2	mg/kg	1.9	mg/kg	1.9	mg/kg	1 U	mg/kg	1.1 U	mg/kg	10.9	mg/kg
BERYLLIUM	0.32 U	mg/kg	0.31 U	mg/kg	0.31 U	mg/kg	0.3 U	mg/kg	0.32 U	mg/kg	0.68 U	mg/kg
CADMIUM	0.32 U	mg/kg	0.31 U	mg/kg	0.31 U	mg/kg	0.3 U	mg/kg	0.32 U	mg/kg	0.68 U	mg/kg
CALCIUM	108 U	mg/kg	104 U	mg/kg	103 U	mg/kg	99.8 U	mg/kg	105 U	mg/kg	228 U	mg/kg
CHROMIUM	4.8	mg/kg	7.8	mg/kg	3.4	mg/kg	2.1	mg/kg	1.5	mg/kg	7.5 J	mg/kg
COBALT	0.54 U	mg/kg	0.52 U	mg/kg	0.51 U	mg/kg	0.5 U	mg/kg	0.53 U	mg/kg	1.1 U	mg/kg
COPPER	0.54 U	mg/kg	0.91	mg/kg	0.51 U	mg/kg	0.5 U	mg/kg	0.53 U	mg/kg	2 J	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
IRON	68.1	mg/kg	117	mg/kg	105	mg/kg	111	mg/kg	53.1	mg/kg	1420	mg/kg
LEAD	0.9	mg/kg	0.51	mg/kg	0.86	mg/kg	0.37	mg/kg	0.6	mg/kg	5.9 J	mg/kg
MAGNESIUM	13.8 U	mg/kg	10.8 U	mg/kg	22.5 U	mg/kg	8.1 U	mg/kg	12 U	mg/kg	96	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01401		W32SB01402		W32SB01403		W32SB01404		W32SB01405		W32SB01502	
LAB ID NUMBER	9804041 - 02		9804041 - 03		9804041 - 04		9804041 - 05		9804041 - 06		9803063 - 05	
SITE	32		32		32		32		32		32	
DATE SAMPLED	4/4/98		4/4/98		4/4/98		4/4/98		4/4/98		3/9/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	0.65	mg/kg	1.3	mg/kg	0.86	mg/kg	0.5 U	mg/kg	0.86	mg/kg	5.4	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg
NICKEL	0.54 U	mg/kg	0.52 U	mg/kg	0.51 U	mg/kg	0.5 U	mg/kg	0.53 U	mg/kg	1.1 U	mg/kg
POTASSIUM	22.9 U	mg/kg	25.9 U	mg/kg	53.2 U	mg/kg	18.5 U	mg/kg	18.5 U	mg/kg	257 U	mg/kg
SELENIUM	0.54 U	mg/kg	0.52 U	mg/kg	0.51 U	mg/kg	0.5 U	mg/kg	0.53 U	mg/kg	1.1 U	mg/kg
SILVER	0.32 U	mg/kg	0.31 U	mg/kg	0.31 U	mg/kg	0.3 U	mg/kg	0.32 U	mg/kg	0.68 U	mg/kg
SODIUM	62.1 U	mg/kg	54.6 U	mg/kg	190 U	mg/kg	52.3 U	mg/kg	65.3 U	mg/kg	137	mg/kg
THALLIUM	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	1.1 U	mg/kg	2.3 U	mg/kg
VANADIUM	1.1	mg/kg	0.84	mg/kg	1.2	mg/kg	0.76	mg/kg	0.72	mg/kg	9.4	mg/kg
ZINC	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	1 U	mg/kg	1.1 U	mg/kg	2.3 U	mg/kg

Blank [illegible] indicates chemical not analyzed for.
A or [illegible] sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01601		W32SB01602		W32SB01603		W32SB01604		W32SB01701		W32SB01702	
LAB ID NUMBER	9803042 - 03		9803042 - 04		9803042 - 08		9803042 - 07		9803030 - 03		9803030 - 04	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/5/98		3/6/98		3/6/98		3/6/98		3/3/98		3/3/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1,2-TRICHLOROETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	2 J	µg/kg	6 U	µg/kg	5 U	µg/kg
1,2-DICHLOROPROPANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
2-BUTANONE	6 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg
2-HEXANONE	6 UJ	µg/kg	5 UJ	µg/kg	5 U	µg/kg	6 U	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg
4-METHYL-2-PENTANONE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg
ACETONE	13 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	11 U	µg/kg	5 U	µg/kg
BENZENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	20	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMODICHLOROMETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMOFORM	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
BROMOMETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CARBON DISULFIDE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CARBON TETRACHLORIDE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROBENZENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROFORM	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CHLOROMETHANE	6 UJ	µg/kg	5 UJ	µg/kg	2 J	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
CIS-1,3-DICHLOROPROPENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
DIBROMOCHLOROMETHANE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
ETHYLBENZENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	5 J	µg/kg	6 U	µg/kg	5 U	µg/kg
METHYL TERT-BUTYL ETHER	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
METHYLENE CHLORIDE	10 U	µg/kg	12 U	µg/kg	9 U	µg/kg	9 U	µg/kg	27 U	µg/kg	33 U	µg/kg
STYRENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TETRACHLOROETHENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TOLUENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 J	µg/kg	6 U	µg/kg	5 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
TRICHLOROETHENE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	5 J	µg/kg	6 U	µg/kg	5 U	µg/kg
VINYL CHLORIDE	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg
XYLENES, TOTAL	6 UJ	µg/kg	5 U	µg/kg	5 U	µg/kg	11	µg/kg	6 U	µg/kg	5 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4,5-TRICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DINITROPHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01601		W32SB01602		W32SB01603		W32SB01604		W32SB01701		W32SB01702	
LAB ID NUMBER	9803042 - 03		9803042 - 04		9803042 - 06		9803042 - 07		9803030 - 03		9803030 - 04	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/5/98		3/5/98		3/5/98		3/5/98		3/3/98		3/3/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
2-METHYLNAPHTHALENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
2-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
2-NITROANILINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
2-NITROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
3,3'-DICHLOROBENZIDINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
3-NITROANILINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
4,6-DINITRO-2-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
4-BROMOPHENYL PHENYL ETHER	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
4-CHLORO-3-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
4-CHLOROANILINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
4-METHYLPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
4-NITROANILINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
4-NITROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
ACENAPHTHENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
ACENAPHTHYLENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
ANTHRACENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BENZO(A)ANTHRACENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BENZO(A)PYRENE	110 UJ	μg/kg	110 UJ	μg/kg	110 UJ	μg/kg	120 UJ	μg/kg	110 UJ	μg/kg	100 UJ	μg/kg
BENZO(B)FLUORANTHENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BENZO(G,H,I)PERYLENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BENZO(K)FLUORANTHENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
BUTYLBENZYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
CARBAZOLE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
CHRYSENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DI-N-BUTYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DI-N-OCTYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DIBENZO(A,H)ANTHRACENE	110 U	μg/kg	110 U	μg/kg	110 U	μg/kg	120 U	μg/kg	110 U	μg/kg	100 U	μg/kg
DIBENZOFURAN	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DIETHYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
DIMETHYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
FLUORANTHENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
FLUORENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
HEXACHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
HEXACHLOROBUTADIENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
HEXACHLOROETHANE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
INDENO(1,2,3-CD)PYRENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
ISOPHORONE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	μg/kg	21 U	μg/kg	21 U	μg/kg	24 U	μg/kg	23 U	μg/kg	21 U	μg/kg
N-NITROSODIPHENYLAMINE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
NAPHTHALENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
NITROBENZENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
PENTACHLOROPHENOL	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg
PHENANTHRENE	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg	400 U	μg/kg	380 U	μg/kg	350 U	μg/kg

Blank sp[illegible] indicates chemical not analyzed for.
A or D [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01601		W32SB01602		W32SB01603		W32SB01604		W32SB01701		W32SB01702	
LAB ID NUMBER	9803042 - 03		9803042 - 04		9803042 - 06		9803042 - 07		9803030 - 03		9803030 - 04	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/5/98		3/5/98		3/6/98		3/6/98		3/3/98		3/3/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
PYRENE	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg	400 U	µg/kg	380 U	µg/kg	350 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
4,4'-DDE	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
4,4'-DDT	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ALDRIN	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-CHLORDANE	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
AROCLOR-1016	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	40 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1221	75 U	µg/kg	71 U	µg/kg	71 U	µg/kg	80 U	µg/kg	76 U	µg/kg	70 U	µg/kg
AROCLOR-1232	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	40 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1242	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	40 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1248	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	40 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1254	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	40 U	µg/kg	38 U	µg/kg	35 U	µg/kg
AROCLOR-1260	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg	40 U	µg/kg	38 U	µg/kg	35 U	µg/kg
BETA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DIELDRIN	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDOSULFAN I	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ENDOSULFAN II	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDOSULFAN SULFATE	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDRIN	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDRIN ALDEHYDE	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
ENDRIN KETONE	3.7 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	4 U	µg/kg	3.8 U	µg/kg	3.5 U	µg/kg
GAMMA-BHC (LINDANE)	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
GAMMA-CHLORDANE	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
METHOXYCHLOR	19 U	µg/kg	18 U	µg/kg	18 U	µg/kg	20 U	µg/kg	19 U	µg/kg	18 U	µg/kg
TOXAPHENE	190 U	µg/kg	180 U	µg/kg	180 U	µg/kg	200 U	µg/kg	190 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	11 U	mg/kg	8.9 U	mg/kg	11 U	mg/kg	9.9 U	mg/kg	9.6 U	mg/kg	11 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS												
ALUMINUM	2760	mg/kg	1470	mg/kg	546	mg/kg	4770	mg/kg	7750	mg/kg	2840	mg/kg
ANTIMONY	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg	1.2 UJ	mg/kg	1.1 UJ	mg/kg	1 UJ	mg/kg
ARSENIC	2.2 U	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	2.4 U	mg/kg	2.2 U	mg/kg	2.1 U	mg/kg
BARIUM	2.7	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	9	mg/kg	8.9	mg/kg	2.1 U	mg/kg
BERYLLIUM	0.67 U	mg/kg	0.64 U	mg/kg	0.63 U	mg/kg	0.72 U	mg/kg	0.67 U	mg/kg	0.63 U	mg/kg
CADMIUM	0.67 U	mg/kg	0.64 U	mg/kg	0.63 U	mg/kg	0.72 U	mg/kg	0.67 U	mg/kg	0.63 U	mg/kg
CALCIUM	223 U	mg/kg	213 U	mg/kg	211 U	mg/kg	240 U	mg/kg	223 U	mg/kg	208 U	mg/kg
CHROMIUM	6.2 J	mg/kg	3.4 J	mg/kg	1.2 J	mg/kg	17.4 J	mg/kg	5.5 J	mg/kg	4.6 J	mg/kg
COBALT	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1 U	mg/kg
COPPER	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	4.9	mg/kg	1.7	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
IRON	328	mg/kg	71.8	mg/kg	63.2	mg/kg	2980	mg/kg	978	mg/kg	139	mg/kg
LEAD	1.6 J	mg/kg	0.68 J	mg/kg	0.63 U	mg/kg	6.4 J	mg/kg	3.6 J	mg/kg	1.1 J	mg/kg
MAGNESIUM	31 U	mg/kg	13.3 U	mg/kg	12.4 U	mg/kg	123	mg/kg	82.6 U	mg/kg	24.9 U	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01601		W32SB01602		W32SB01603		W32SB01604		W32SB01701		W32SB01702	
LAB ID NUMBER	9803042 - 03		9803042 - 04		9803042 - 06		9803042 - 07		9803030 - 03		9803030 - 04	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/5/98		3/5/98		3/5/98		3/5/98		3/3/98		3/3/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	1.2	mg/kg	1.1 U	mg/kg	1.6	mg/kg	6	mg/kg	3.8	mg/kg	1 U	mg/kg
MERCURY	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg
NICKEL	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1 U	mg/kg
POTASSIUM	53 U	mg/kg	25.1 U	mg/kg	26.8 U	mg/kg	216	mg/kg	197	mg/kg	49.9 U	mg/kg
SELENIUM	1.1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1 U	mg/kg
SILVER	0.67 U	mg/kg	0.64 U	mg/kg	0.63 U	mg/kg	0.72 U	mg/kg	0.67 U	mg/kg	0.63 U	mg/kg
SODIUM	111 U	mg/kg	106 U	mg/kg	106 U	mg/kg	120 U	mg/kg	112 U	mg/kg	104 U	mg/kg
THALLIUM	2.2 U	mg/kg	2.1 U	mg/kg	2.1 U	mg/kg	2.4 U	mg/kg	2.2 U	mg/kg	2.1 U	mg/kg
VANADIUM	3.7	mg/kg	1.3	mg/kg	1.1 U	mg/kg	25.2	mg/kg	8.6	mg/kg	1.9	mg/kg
ZINC	2.2 UJ	mg/kg	2.1 UJ	mg/kg	2.1 UJ	mg/kg	2.4 UJ	mg/kg	2.5 J	mg/kg	2.1 UJ	mg/kg

Blank space indicates chemical not analyzed for.
A or D sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01703		W32SB01704		W32SB01801		W32SB01901		W32SB01902		W32SB01903	
LAB ID NUMBER	9803030 - 05		9803030 - 06		9804041 - 07		9804041 - 08		9804041 - 09		9804041 - 10	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/4/98		3/4/98		4/5/98		4/5/98		4/5/98		4/5/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES												
1,1,1-TRICHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,1,2-TRICHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,1-DICHLOROETHENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
1,2-DICHLOROPROPANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
2-BUTANONE	6 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg
2-HEXANONE	6 UJ	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg
4-METHYL-2-PENTANONE	6 UJ	µg/kg	6 UJ	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
ACETONE	15 U	µg/kg	6 U	µg/kg	11 UJ	µg/kg	6 UJ	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg
BENZENE	6 U	µg/kg	17	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
BROMODICHLOROMETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
BROMOFORM	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
BROMOMETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CARBON DISULFIDE	1 J	µg/kg	1 J	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CARBON TETRACHLORIDE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CHLOROBENZENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CHLOROETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CHLOROFORM	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CHLOROMETHANE	2 J	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
CIS-1,3-DICHLOROPROPENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
DIBROMOCHLOROMETHANE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
ETHYLBENZENE	1 J	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
METHYL TERT-BUTYL ETHER	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
METHYLENE CHLORIDE	28 U	µg/kg	17 U	µg/kg	8 U	µg/kg	6 U	µg/kg	7 U	µg/kg	5 U	µg/kg
STYRENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
TETRACHLOROETHENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
TOLUENE	2 J	µg/kg	2 J	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
TRICHLOROETHENE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
VINYL CHLORIDE	6 U	µg/kg	6 U	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
XYLENES, TOTAL	8	µg/kg	19	µg/kg	5 U	µg/kg	6 U	µg/kg	5 U	µg/kg	5 U	µg/kg
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2,4,5-TRICHLOROPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2,4-DINITROPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01703		W32SB01704		W32SB01801		W32SB01901		W32SB01902		W32SB01903	
LAB ID NUMBER	9803030 - 05		9803030 - 06		9804041 - 07		9804041 - 08		9804041 - 09		9804041 - 10	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/4/98		3/4/98		4/5/98		4/5/98		4/5/98		4/5/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2-METHYLPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2-NITROANILINE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
3-NITROANILINE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	400 U	µg/kg	360 UJ	µg/kg	370 UJ	µg/kg	350 UJ	µg/kg	350 U	µg/kg
4-NITROANILINE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
4-NITROPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
ACENAPHTHENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
ANTHRACENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BENZO(A)PYRENE	110 UJ	µg/kg	120 UJ	µg/kg	110 U	µg/kg	110 U	µg/kg	100 U	µg/kg	100 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	67 J	µg/kg	43 J	µg/kg	85 J	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
CARBAZOLE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
CHRYSENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	460 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	110 U	µg/kg	100 U	µg/kg	100 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
FLUORANTHENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
FLUORENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
ISOPHORONE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	µg/kg	24 U	µg/kg	22 U	µg/kg	22 U	µg/kg	21 U	µg/kg	21 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
NAPHTHALENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
NITROBENZENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
PENTACHLOROPHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
PHENANTHRENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg

Blank space indicates chemical not analyzed for.
A or D sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01703		W32SB01704		W32SB01801		W32SB01901		W32SB01902		W32SB01903	
LAB ID NUMBER	9803030 - 05		9803030 - 06		9804041 - 07		9804041 - 08		9804041 - 09		9804041 - 10	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/4/98		3/4/98		4/5/98		4/5/98		4/5/98		4/5/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
PYRENE	370 U	µg/kg	400 U	µg/kg	360 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
PESTICIDES/PCBs												
4,4'-DDD	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
4,4'-DDE	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
4,4'-DDT	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
ALDRIN	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
ALPHA-BHC	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
ALPHA-CHLORDANE	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
AROCLOR-1016	37 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg
AROCLOR-1221	74 U	µg/kg	80 U	µg/kg	71 U	µg/kg	73 U	µg/kg	70 U	µg/kg	69 U	µg/kg
AROCLOR-1232	37 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg
AROCLOR-1242	37 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg
AROCLOR-1248	37 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg
AROCLOR-1254	37 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg	35 U	µg/kg	35 U	µg/kg
AROCLOR-1260	37 U	µg/kg	40 U	µg/kg	36 U	µg/kg	37 U	µg/kg	35 U	µg/kg	36 U	µg/kg
BETA-BHC	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
DELTA-BHC	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
DIELDRIN	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
ENDOSULFAN I	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
ENDOSULFAN II	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
ENDOSULFAN SULFATE	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
ENDRIN	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
ENDRIN ALDEHYDE	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
ENDRIN KETONE	3.7 U	µg/kg	4 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg	3.5 U	µg/kg	3.5 U	µg/kg
GAMMA-BHC (LINDANE)	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
GAMMA-CHLORDANE	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
HEPTACHLOR	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	2 U	µg/kg	1.8 U	µg/kg	1.8 U	µg/kg	1.7 U	µg/kg	1.7 U	µg/kg
METHOXYCHLOR	19 U	µg/kg	20 U	µg/kg	18 U	µg/kg	18 U	µg/kg	17 U	µg/kg	17 U	µg/kg
TOXAPHENE	190 U	µg/kg	200 U	µg/kg	180 U	µg/kg	180 U	µg/kg	170 U	µg/kg	170 U	µg/kg
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	9.9 U	mg/kg	10 U	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg	8.56 J	mg/kg	22.6	mg/kg	8.7 U	mg/kg	8.8 U	mg/kg
METALS												
ALUMINUM	622	mg/kg	7720	mg/kg	6550	mg/kg	6990	mg/kg	1240	mg/kg	542	mg/kg
ANTIMONY	1.1 UJ	mg/kg	1.2 UJ	mg/kg	0.52 UJ	mg/kg	0.53 UJ	mg/kg	0.52 UJ	mg/kg	0.5 UJ	mg/kg
ARSENIC	2.2 U	mg/kg	2.4	mg/kg	1 U	mg/kg	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg
BARIUM	2.2 U	mg/kg	15.2	mg/kg	9	mg/kg	10.9	mg/kg	1 U	mg/kg	1 U	mg/kg
BERYLLIUM	0.67 U	mg/kg	0.71 U	mg/kg	0.31 U	mg/kg	0.32 U	mg/kg	0.31 U	mg/kg	0.3 U	mg/kg
CADMIUM	0.67 U	mg/kg	0.71 U	mg/kg	0.31 U	mg/kg	0.32 U	mg/kg	0.31 U	mg/kg	0.3 U	mg/kg
CALCIUM	223 U	mg/kg	237 U	mg/kg	196	mg/kg	106 U	mg/kg	103 U	mg/kg	101 U	mg/kg
CHROMIUM	1.1 UJ	mg/kg	16.2 J	mg/kg	5.5	mg/kg	7	mg/kg	2.4	mg/kg	2.5	mg/kg
COBALT	1.1 U	mg/kg	1.2 U	mg/kg	0.54	mg/kg	0.75	mg/kg	0.52 U	mg/kg	0.5 U	mg/kg
COPPER	1.4	mg/kg	2.7	mg/kg	2.6	mg/kg	2.7	mg/kg	0.52 U	mg/kg	0.5 U	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
IRON	36.4	mg/kg	5450	mg/kg	2630	mg/kg	3040	mg/kg	69.7	mg/kg	44.1	mg/kg
LEAD	0.67 U	mg/kg	6.1 J	mg/kg	2.4	mg/kg	2.4	mg/kg	0.5	mg/kg	0.35	mg/kg
MAGNESIUM	11.2 U	mg/kg	184	mg/kg	131	mg/kg	142	mg/kg	9.4 U	mg/kg	8.2 U	mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W32SB01703		W32SB01704		W32SB01801		W32SB01901		W32SB01902		W32SB01903	
LAB ID NUMBER	9803030 - 05		9803030 - 06		9804041 - 07		9804041 - 08		9804041 - 09		9804041 - 10	
SITE	32		32		32		32		32		32	
DATE SAMPLED	3/4/98		3/4/98		4/5/98		4/5/98		4/5/98		4/5/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE	1.1 U	mg/kg	6.7	mg/kg	27	mg/kg	20.6	mg/kg	2.4	mg/kg	0.69	mg/kg
MERCURY	0.04 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	1.1 U	mg/kg	1.2 U	mg/kg	1.7	mg/kg	2.3	mg/kg	0.52 U	mg/kg	0.5 U	mg/kg
POTASSIUM	12.6 U	mg/kg	408	mg/kg	84.8	mg/kg	90.9	mg/kg	19.8 U	mg/kg	17.1 U	mg/kg
SELENIUM	1.1 U	mg/kg	1.2 U	mg/kg	0.52 U	mg/kg	0.53 U	mg/kg	0.52 U	mg/kg	0.5 U	mg/kg
SILVER	0.67 U	mg/kg	0.71 U	mg/kg	0.31 U	mg/kg	0.32 U	mg/kg	0.31 U	mg/kg	0.3 U	mg/kg
SODIUM	111 U	mg/kg	119 U	mg/kg	53.2 U	mg/kg	55.5 U	mg/kg	51.7 U	mg/kg	52 U	mg/kg
THALLIUM	2.2 U	mg/kg	2.4 U	mg/kg	1 U	mg/kg	1.1 U	mg/kg	1 U	mg/kg	1 U	mg/kg
VANADIUM	1.1 U	mg/kg	22.7	mg/kg	7.9	mg/kg	8.5	mg/kg	0.89	mg/kg	0.5 U	mg/kg
ZINC	2.2 UJ	mg/kg	9.3 J	mg/kg	4.7	mg/kg	4.7	mg/kg	1 U	mg/kg	1 U	mg/kg

Blank space indicates chemical not analyzed for.
A or D sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB01(10-12)		WR-SB01(15-17)		WR-SB01(20-22)		WR-SB01(5-7)		WR-SB01(5-7)D	
LAB ID NUMBER	94015012		94015013		94015014		94015010		94015011	
SITE	32		32		32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
1,1,2-TRICHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
1,1-DICHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
1,1-DICHLOROETHENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
1,2-DICHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	300 J	µg/kg	1400 U	µg/kg	1400 U	µg/kg	430 J	µg/kg	2800 U	µg/kg
1,2-DICHLOROPROPANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
2-BUTANONE	1400 UJ	µg/kg	1400 UJ	µg/kg	1400 UJ	µg/kg	2800 UJ	µg/kg	2800 UJ	µg/kg
2-HEXANONE	1400 UJ	µg/kg	1400 UJ	µg/kg	1400 UJ	µg/kg	2800 UJ	µg/kg	2800 UJ	µg/kg
4-METHYL-2-PENTANONE	1400 UJ	µg/kg	1400 UJ	µg/kg	1400 UJ	µg/kg	2800 U	µg/kg	2800 UJ	µg/kg
ACETONE	1000 J	µg/kg	1400 U	µg/kg	1400 UJ	µg/kg	2000 J	µg/kg	2800 U	µg/kg
BENZENE	1400 U	µg/kg	1400 UJ	µg/kg	1400 U	µg/kg	2800 UJ	µg/kg	2800 UJ	µg/kg
BROMODICHLOROMETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
BROMOFORM	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
BROMOMETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
CARBON DISULFIDE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
CARBON TETRACHLORIDE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
CHLOROBENZENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
CHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
CHLOROFORM	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
CHLOROMETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
CIS-1,3-DICHLOROPROPENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
DIBROMOCHLOROMETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
ETHYLBENZENE	3800 J	µg/kg	1700 J	µg/kg	170 J	µg/kg	4900	µg/kg	5100	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	250 J	µg/kg	380 J	µg/kg	1400 U	µg/kg	2800 U	µg/kg	610 J	µg/kg
STYRENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
TETRACHLOROETHENE	1400 J	µg/kg	390 J	µg/kg	1400 U	µg/kg	1300 UJ	µg/kg	1700 J	µg/kg
TOLUENE	8400 J	µg/kg	2300 J	µg/kg	1400 U	µg/kg	13000	µg/kg	11000	µg/kg
TRANS-1,3-DICHLOROPROPENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
TRICHLOROETHENE	1400 U	µg/kg	1300 J	µg/kg	290 J	µg/kg	2800 U	µg/kg	2800 U	µg/kg
VINYL CHLORIDE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	2800 U	µg/kg	2800 U	µg/kg
XYLENES, TOTAL	25000 J	µg/kg	12000 J	µg/kg	1600	µg/kg	32000	µg/kg	32000	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
1,2-DICHLOROBENZENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
1,3-DICHLOROBENZENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
1,4-DICHLOROBENZENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2,4,5-TRICHLOROPHENOL	23000 UJ	µg/kg	9500 U	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg
2,4,6-TRICHLOROPHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2,4-DICHLOROPHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2,4-DIMETHYLPHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2,4-DINITROPHENOL	23000 UJ	µg/kg	9500 U	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg
2,4-DINITROTOLUENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2,6-DINITROTOLUENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2-CHLORONAPHTHALENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg

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A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB01(10-12)		WR-SB01(15-17)		WR-SB01(20-22)		WR-SB01(5-7)		WR-SB01(5-7)D	
LAB ID NUMBER	94015012		94015013		94015014		94015010		94015011	
SITE	32		32		32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2-METHYLNAPHTHALENE	37000 J	µg/kg	18000	µg/kg	23000 J	µg/kg	43000 J	µg/kg	37000 J	µg/kg
2-METHYLPHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
2-NITROANILINE	23000 UJ	µg/kg	9500 U	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg
2-NITROPHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
3,3'-DICHLOROBENZIDINE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
3-NITROANILINE	23000 UJ	µg/kg	9500 U	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	23000 UJ	µg/kg	9500 U	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg
4-BROMOPHENYL PHENYL ETHER	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
4-CHLORO-3-METHYLPHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
4-CHLOROANILINE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
4-METHYLPHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
4-NITROANILINE	23000 UJ	µg/kg	9500 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg
4-NITROPHENOL	23000 UJ	µg/kg	9500 U	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg
ACENAPHTHENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
ACENAPHTHYLENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
ANTHRACENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BENZO(A)ANTHRACENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BENZO(A)PYRENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BENZO(B)FLUORANTHENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BENZO(G,H,I)PERYLENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BENZO(K)FLUORANTHENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BIS(2-CHLOROETHOXY)METHANE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BIS(2-CHLOROETHYL)ETHER	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
BUTYLBENZYL PHTHALATE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
CARBAZOLE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
CHRYSENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
DI-N-BUTYL PHTHALATE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
DI-N-OCTYL PHTHALATE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
DIBENZOFURAN	1400 J	µg/kg	980 J	µg/kg	1100 J	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
DIETHYL PHTHALATE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
DIMETHYL PHTHALATE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
FLUORANTHENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
FLUORENE	970 J	µg/kg	640 J	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
HEXACHLOROBENZENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
HEXACHLOROBUTADIENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
HEXACHLOROCYCLOPENTADIENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
HEXACHLOROETHANE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
INDENO(1,2,3-CD)PYRENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
ISOPHORONE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
N-NITROSODIPHENYLAMINE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
NAPHTHALENE	21000 J	µg/kg	8600	µg/kg	8900 J	µg/kg	26000 J	µg/kg	22000 J	µg/kg
NITROBENZENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
PENTACHLOROPHENOL	23000 UJ	µg/kg	9500 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg	23000 UJ	µg/kg
PHENANTHRENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg

Blank sp[illegible]e indicates chemical not analyzed for.
A or [illegible] sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB01(10-12)		WR-SB01(15-17)		WR-SB01(20-22)		WR-SB01(5-7)		WR-SB01(5-7)D	
LAB ID NUMBER	94015012		94015013		94015014		94015010		94015011	
SITE	32		32		32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
PYRENE	9500 UJ	µg/kg	3900 U	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg	9500 UJ	µg/kg
PESTICIDES/PCBs										
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS										
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM	13.4	mg/kg	10.6	mg/kg	1.4 J	mg/kg	20.3	mg/kg	14.1	mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB01(10-12)		WR-SB01(15-17)		WR-SB01(20-22)		WR-SB01(5-7)		WR-SB01(5-7)D	
LAB ID NUMBER	94015012		94015013		94015014		94015010		94015011	
SITE	32		32		32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg

Blank sp[illegible] indicates chemical not analyzed for.
A or D [illegible] sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB02(10-12)		WR-SB02(15-17)		WR-SB02(20-22)		WR-SB02(5-7)		WR-SB03(10-12)	
LAB ID NUMBER	94015016		WR-SB02(15-17)		94015018		94015015		94015020	
SITE	32		32		32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES										
1,1,1-TRICHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
1,1,2-TRICHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
1,1-DICHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
1,1-DICHLOROETHENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
1,2-DICHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
1,2-DICHLOROPROPANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
2-BUTANONE	1400 UJ	µg/kg	1400 UJ	µg/kg	1400 UJ	µg/kg	1300 UJ	µg/kg	1400 UJ	µg/kg
2-HEXANONE	1400 UJ	µg/kg	1400 UJ	µg/kg	1400 UJ	µg/kg	1300 UJ	µg/kg	1400 UJ	µg/kg
4-METHYL-2-PENTANONE	1400 UJ	µg/kg	1400 UJ	µg/kg	1400 UJ	µg/kg	1300 UJ	µg/kg	1400 UJ	µg/kg
ACETONE	1500 J	µg/kg	1400 UJ	µg/kg	700 J	µg/kg	1300 UJ	µg/kg	2100 J	µg/kg
BENZENE	1400 U	µg/kg	250 J	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
BROMODICHLOROMETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
BROMOFORM	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
BROMOMETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
CARBON DISULFIDE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
CARBON TETRACHLORIDE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
CHLOROBENZENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
CHLOROETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
CHLOROFORM	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
CHLOROMETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
CIS-1,3-DICHLOROPROPENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
DIBROMOCHLOROMETHANE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
ETHYLBENZENE	790 J	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	160 J	µg/kg	240 J	µg/kg	1400 U	µg/kg	1300 U	µg/kg	170 J	µg/kg
STYRENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
TETRACHLOROETHENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
TOLUENE	260 J	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
TRICHLOROETHENE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
VINYL CHLORIDE	1400 U	µg/kg	1400 U	µg/kg	1400 U	µg/kg	1300 U	µg/kg	1400 U	µg/kg
XYLENES, TOTAL	3900	µg/kg	480 J	µg/kg	540 J	µg/kg	1300 U	µg/kg	1400 U	µg/kg
SEMIVOLATILES										
1,2,4-TRICHLOROBENZENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
1,2-DICHLOROBENZENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
1,3-DICHLOROBENZENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
1,4-DICHLOROBENZENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2,4,5-TRICHLOROPHENOL	23000 UJ	µg/kg	4700 U	µg/kg	23000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
2,4,6-TRICHLOROPHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2,4-DICHLOROPHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2,4-DIMETHYLPHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2,4-DINITROPHENOL	23000 UJ	µg/kg	4700 U	µg/kg	23000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
2,4-DINITROTOLUENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2,6-DINITROTOLUENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2-CHLORONAPHTHALENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB02(10-12)		WR-SB02(15-17)		WR-SB02(20-22)		WR-SB02(5-7)		WR-SB03(10-12)	
LAB ID NUMBER	94015016		WR-SB02(15-17)		94015018		94015015		94015020	
SITE	32		32		32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2-METHYLNAPHTHALENE	26000 J	µg/kg	6200	µg/kg	18000 J	µg/kg	4400	µg/kg	6500 J	µg/kg
2-METHYLPHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
2-NITROANILINE	23000 UJ	µg/kg	4700 U	µg/kg	23000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
2-NITROPHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
3,3'-DICHLOROBENZIDINE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
3-NITROANILINE	23000 UJ	µg/kg	4700 U	µg/kg	23000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	23000 UJ	µg/kg	4700 U	µg/kg	23000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
4-BROMOPHENYL PHENYL ETHER	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
4-CHLORO-3-METHYLPHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
4-CHLOROANILINE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
4-METHYLPHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
4-NITROANILINE	23000 UJ	µg/kg	4700 U	µg/kg	23000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
4-NITROPHENOL	23000 UJ	µg/kg	4700 U	µg/kg	23000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
ACENAPHTHENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
ACENAPHTHYLENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
ANTHRACENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
BENZO(A)ANTHRACENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
BENZO(A)PYRENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
BENZO(B)FLUORANTHENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
BENZO(G,H,I)PERYLENE	9600 UJ	µg/kg	1900 UJ	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
BENZO(K)FLUORANTHENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
BIS(2-CHLOROETHOXY)METHANE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
BIS(2-CHLOROETHYL)ETHER	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	590 J	µg/kg	9600 UJ	µg/kg
BUTYLBENZYL PHTHALATE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
CARBAZOLE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
CHRYSENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
DI-N-BUTYL PHTHALATE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
DI-N-OCTYL PHTHALATE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
DIBENZOFURAN	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
DIETHYL PHTHALATE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
DIMETHYL PHTHALATE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
FLUORANTHENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
FLUORENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
HEXACHLOROBENZENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
HEXACHLOROBUTADIENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
HEXACHLOROCYCLOPENTADIENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
HEXACHLOROETHANE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
INDENO(1,2,3-CD)PYRENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
ISOPHORONE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
N-NITROSODIPHENYLAMINE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
NAPHTHALENE	19000 J	µg/kg	3700	µg/kg	13000 J	µg/kg	8900	µg/kg	1600 J	µg/kg
NITROBENZENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
PENTACHLOROPHENOL	23000 UJ	µg/kg	4700 U	µg/kg	23000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
PHENANTHRENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB02(10-12)		WR-SB02(15-17)		WR-SB02(20-22)		WR-SB02(5-7)		WR-SB03(10-12)	
LAB ID NUMBER	94015016		WR-SB02(15-17)		94015018		94015015		94015020	
SITE	32		32		32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
PYRENE	9600 UJ	µg/kg	1900 U	µg/kg	9400 UJ	µg/kg	3500 U	µg/kg	9600 UJ	µg/kg
PESTICIDES/PCBs										
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS										
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
METALS										
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM	13.6	mg/kg	7.7	mg/kg	8	mg/kg	4.8	mg/kg	7.6	mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB02(10-12)		WR-SB02(15-17)		WR-SB02(20-22)		WR-SB02(5-7)		WR-SB03(10-12)	
LAB ID NUMBER	94015016		WR-SB02(15-17)		94015018		94015015		94015020	
SITE	32		32		32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed for.
A or D [illegible] sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB03(15-17)		WR-SB03(20-22)		WR-SB03(5-7)	
LAB ID NUMBER	WR-SB03(15-17)		94015022		94015019	
SITE	32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES						
1,1,1-TRICHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
1,1,2-TRICHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
1,1-DICHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
1,1-DICHLOROETHENE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
1,2-DICHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
1,2-DICHLOROPROPANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
2-BUTANONE	1400 UJ	µg/kg	11 U	µg/kg	1400 UJ	µg/kg
2-HEXANONE	1400 UJ	µg/kg	11 U	µg/kg	1400 UJ	µg/kg
4-METHYL-2-PENTANONE	1400 UJ	µg/kg	11 U	µg/kg	1400 UJ	µg/kg
ACETONE	1400 UJ	µg/kg	15 UJ	µg/kg	2000 J	µg/kg
BENZENE	1400 J	µg/kg	11 U	µg/kg	1400 U	µg/kg
BROMODICHLOROMETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
BROMOFORM	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
BROMOMETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
CARBON DISULFIDE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
CARBON TETRACHLORIDE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
CHLOROBENZENE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
CHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
CHLOROFORM	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
CHLOROMETHANE	1400 U	µg/kg	11 UJ	µg/kg	1400 U	µg/kg
CIS-1,3-DICHLOROPROPENE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
DIBROMOCHLOROMETHANE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
ETHYLBENZENE	150 J	µg/kg	11 U	µg/kg	440 J	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	1400 U	µg/kg	11 U	µg/kg	160 J	µg/kg
STYRENE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
TETRACHLOROETHENE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
TOLUENE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
TRICHLOROETHENE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
VINYL CHLORIDE	1400 U	µg/kg	11 U	µg/kg	1400 U	µg/kg
XYLENES, TOTAL	1400 U	µg/kg	11 U	µg/kg	210 J	µg/kg
SEMIVOLATILES						
1,2,4-TRICHLOROBENZENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
1,2-DICHLOROBENZENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
1,3-DICHLOROBENZENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
1,4-DICHLOROBENZENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2,4,5-TRICHLOROPHENOL	24000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
2,4,6-TRICHLOROPHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2,4-DICHLOROPHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2,4-DIMETHYLPHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2,4-DINITROPHENOL	24000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
2,4-DINITROTOLUENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2,6-DINITROTOLUENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2-CHLORONAPHTHALENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB03(15-17)		WR-SB03(20-22)		WR-SB03(5-7)	
LAB ID NUMBER	WR-SB03(15-17)		94015022		94015019	
SITE	32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
2-CHLOROPHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2-METHYLNAPHTHALENE	5200 J	µg/kg	990 J	µg/kg	24000 J	µg/kg
2-METHYLPHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
2-NITROANILINE	24000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
2-NITROPHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
3,3'-DICHLOROBENZIDINE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
3-NITROANILINE	24000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	24000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
4-BROMOPHENYL PHENYL ETHER	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
4-CHLORO-3-METHYLPHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
4-CHLOROANILINE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
4-METHYLPHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
4-NITROANILINE	24000 UJ	µg/kg	8600 U	µg/kg	23000 UJ	µg/kg
4-NITROPHENOL	24000 UJ	µg/kg	8600 UJ	µg/kg	23000 UJ	µg/kg
ACENAPHTHENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
ACENAPHTHYLENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
ANTHRACENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BENZO(A)ANTHRACENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BENZO(A)PYRENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BENZO(B)FLUORANTHENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BENZO(G,H,I)PERYLENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BENZO(K)FLUORANTHENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BIS(2-CHLOROETHOXY)METHANE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BIS(2-CHLOROETHYL)ETHER	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
BUTYLBENZYL PHTHALATE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
CARBAZOLE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
CHRYSENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
DI-N-BUTYL PHTHALATE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
DI-N-OCTYL PHTHALATE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
DIBENZOFURAN	9700 UJ	µg/kg	3500 U	µg/kg	1500 J	µg/kg
DIETHYL PHTHALATE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
DIMETHYL PHTHALATE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
FLUORANTHENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
FLUORENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
HEXACHLOROBENZENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
HEXACHLOROBUTADIENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
HEXACHLOROCYCLOPENTADIENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
HEXACHLOROETHANE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
INDENO(1,2,3-CD)PYRENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
ISOPHORONE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
N-NITROSODIPHENYLAMINE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
NAPHTHALENE	1400 J	µg/kg	3500 U	µg/kg	6900 J	µg/kg
NITROBENZENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
PENTACHLOROPHENOL	24000 UJ	µg/kg	8600 UJ	µg/kg	23000 UJ	µg/kg
PHENANTHRENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg

Blank sp--e indicates chemical not analyzed for.
A or D :ample number indicates duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB03(15-17)		WR-SB03(20-22)		WR-SB03(5-7)	
LAB ID NUMBER	WR-SB03(15-17)		94015022		94015019	
SITE	32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
PHENOL	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
PYRENE	9700 UJ	µg/kg	3500 U	µg/kg	9400 UJ	µg/kg
PESTICIDES/PCBs						
4,4'-DDD		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg
AROCLOR-1221		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg
AROCLOR-1248		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS						
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg
METALS						
ALUMINUM		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg
CHROMIUM	9	mg/kg	2.5	mg/kg	9.5	mg/kg
COBALT		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg
IRON		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed for.
A or D in the sample number indicates duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	WR-SB03(15-17)		WR-SB03(20-22)		WR-SB03(5-7)	
LAB ID NUMBER	WR-SB03(15-17)		94015022		94015019	
SITE	32		32		32	
DATE SAMPLED	7/30/93		7/30/93		7/30/93	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
MANGANESE		mg/kg		mg/kg		mg/kg
MERCURY		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg

Blank s[illegible] indicates chemical not analyzed for.
A or D [illegible] sample number indicates duplicate.

SITE 33

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00101		33B00102		33B00102D		33B00103	
LAB ID NUMBER	MB080012		MB080013		MB080016		MB080014	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ACETONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	13 U	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	3 J	µg/kg	11 U	µg/kg	1 J	µg/kg	11 U	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	14	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00101		33B00102		33B00102D		33B00103	
LAB ID NUMBER	MB080012		MB080013		MB080015		MB080014	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,2-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,3-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,4-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)		µg/kg		µg/kg		µg/kg		µg/kg
2,4,5-TRICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4,6-TRICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DIMETHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DINITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DINITROTOLUENE		µg/kg		µg/kg		µg/kg		µg/kg
2,6-DINITROTOLUENE		µg/kg		µg/kg		µg/kg		µg/kg
2-CHLORONAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
2-CHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2-METHYLNAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
2-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
2-NITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
3,3'-DICHLOROBENZIDINE		µg/kg		µg/kg		µg/kg		µg/kg
3-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4,6-DINITRO-2-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLOROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLOROPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4-NITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
ACENAPHTHENE		µg/kg		µg/kg		µg/kg		µg/kg
ACENAPHTHYLENE		µg/kg		µg/kg		µg/kg		µg/kg
ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(A)ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(A)PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(B)FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(G,H,I)PERYLENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(K)FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or [illegible] he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00101		33B00102		33B00102D		33B00103	
LAB ID NUMBER	MB080012		MB080013		MB080016		MB080014	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE		µg/kg		µg/kg		µg/kg		µg/kg
BIS(2-CHLOROETHYL)ETHER		µg/kg		µg/kg		µg/kg		µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
BUTYLBENZYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
CARBAZOLE		µg/kg		µg/kg		µg/kg		µg/kg
CHRYSENE		µg/kg		µg/kg		µg/kg		µg/kg
DI-N-BUTYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DI-N-OCTYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DIBENZO(A,H)ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
DIBENZOFURAN		µg/kg		µg/kg		µg/kg		µg/kg
DIETHYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DIMETHYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg
FLUORENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROBUTADIENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROCYCLOPENTADIENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROETHANE		µg/kg		µg/kg		µg/kg		µg/kg
INDENO(1,2,3-CD)PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
ISOPHORONE		µg/kg		µg/kg		µg/kg		µg/kg
N-NITROSO-DI-N-PROPYLAMINE		µg/kg		µg/kg		µg/kg		µg/kg
N-NITROSODIPHENYLAMINE		µg/kg		µg/kg		µg/kg		µg/kg
NAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
NITROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
PENTACHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
PHENANTHRENE		µg/kg		µg/kg		µg/kg		µg/kg
PHENOL		µg/kg		µg/kg		µg/kg		µg/kg
PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
PESTICIDES/PCBS								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00101		33B00102		33B00102D		33B00103	
LAB ID NUMBER	MB080012		MB080013		MB080015		MB080014	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1232		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1242		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1248		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1254		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1260		μg/kg		μg/kg		μg/kg		μg/kg
BETA-BHC		μg/kg		μg/kg		μg/kg		μg/kg
DELTA-BHC		μg/kg		μg/kg		μg/kg		μg/kg
DIELDRIN		μg/kg		μg/kg		μg/kg		μg/kg
ENDOSULFAN I		μg/kg		μg/kg		μg/kg		μg/kg
ENDOSULFAN II		μg/kg		μg/kg		μg/kg		μg/kg
ENDOSULFAN SULFATE		μg/kg		μg/kg		μg/kg		μg/kg
ENDRIN		μg/kg		μg/kg		μg/kg		μg/kg
ENDRIN ALDEHYDE		μg/kg		μg/kg		μg/kg		μg/kg
ENDRIN KETONE		μg/kg		μg/kg		μg/kg		μg/kg
GAMMA-BHC (LINDANE)		μg/kg		μg/kg		μg/kg		μg/kg
GAMMA-CHLORDANE		μg/kg		μg/kg		μg/kg		μg/kg
HEPTACHLOR		μg/kg		μg/kg		μg/kg		μg/kg
HEPTACHLOR EPOXIDE		μg/kg		μg/kg		μg/kg		μg/kg
METHOXYCHLOR		μg/kg		μg/kg		μg/kg		μg/kg
TOXAPHENE		μg/kg		μg/kg		μg/kg		μg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	2 U	mg/kg	2 U	mg/kg	2 U	mg/kg	2 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg

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A or D after the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	33B00101		33B00102		33B00102D		33B00103	
LAB ID NUMBER	MB080012		MB080013		MB080015		MB080014	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg	776	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00108		33B00201		33B00202		33B00203	
LAB ID NUMBER	MB081020		MB081009		MB081010		MB081011	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2,2-TETRACHLOROETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2-TRICHLOROETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)		μg/kg	2 J	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROPROPANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-BUTANONE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-HEXANONE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
4-METHYL-2-PENTANONE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ACETONE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BENZENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMODICHLOROMETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOFORM		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOMETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON DISULFIDE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON TETRACHLORIDE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROBENZENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROFORM		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROMETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CIS-1,3-DICHLOROPROPENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
DIBROMOCHLOROMETHANE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ETHYLBENZENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE		μg/kg	2 J	μg/kg	11 U	μg/kg	1 J	μg/kg
STYRENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TETRACHLOROETHENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TOLUENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRANS-1,3-DICHLOROPROPENE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRICHLOROETHENE		μg/kg	130	μg/kg	11 U	μg/kg	11 U	μg/kg
VINYL CHLORIDE		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
XYLENES, TOTAL		μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.
A or ' 'he sample number indicates a duplicate.

CTO 0028

Rev. 1
5/4/99

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER		33B00108		33B00201		33B00202		33B00203
LAB ID NUMBER		MB081020		MB081009		MB081010		MB081011
SITE		33		33		33		33
DATE SAMPLED		6/6/96		6/6/96		6/6/96		6/6/96
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,2-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,3-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,4-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)		µg/kg		µg/kg		µg/kg		µg/kg
2,4,5-TRICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4,6-TRICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DIMETHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DINITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DINITROTOLUENE		µg/kg		µg/kg		µg/kg		µg/kg
2,6-DINITROTOLUENE		µg/kg		µg/kg		µg/kg		µg/kg
2-CHLORONAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
2-CHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2-METHYLNAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
2-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
2-NITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
3,3'-DICHLOROBENZIDINE		µg/kg		µg/kg		µg/kg		µg/kg
3-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4,6-DINITRO-2-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLOROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLOROPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4-NITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
ACENAPHTHENE		µg/kg		µg/kg		µg/kg		µg/kg
ACENAPHTHYLENE		µg/kg		µg/kg		µg/kg		µg/kg
ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(A)ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(A)PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(B)FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(G,H,I)PERYLENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(K)FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER		33B00108		33B00201		33B00202		33B00203
LAB ID NUMBER		MB081020		MB081009		MB081010		MB081011
SITE		33		33		33		33
DATE SAMPLED		6/6/96		6/6/96		6/6/96		6/6/96
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE		µg/kg		µg/kg		µg/kg		µg/kg
BIS(2-CHLOROETHYL)ETHER		µg/kg		µg/kg		µg/kg		µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
BUTYLBENZYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
CARBAZOLE		µg/kg		µg/kg		µg/kg		µg/kg
CHRYSENE		µg/kg		µg/kg		µg/kg		µg/kg
DI-N-BUTYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DI-N-OCTYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DIBENZO(A,H)ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
DIBENZOFURAN		µg/kg		µg/kg		µg/kg		µg/kg
DIETHYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DIMETHYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg
FLUORENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROBUTADIENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROCYCLOPENTADIENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROETHANE		µg/kg		µg/kg		µg/kg		µg/kg
INDENO(1,2,3-CD)PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
ISOPHORONE		µg/kg		µg/kg		µg/kg		µg/kg
N-NITROSO-DI-N-PROPYLAMINE		µg/kg		µg/kg		µg/kg		µg/kg
N-NITROSODIPHENYLAMINE		µg/kg		µg/kg		µg/kg		µg/kg
NAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
NITROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
PENTACHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
PHENANTHRENE		µg/kg		µg/kg		µg/kg		µg/kg
PHENOL		µg/kg		µg/kg		µg/kg		µg/kg
PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
PESTICIDES/PCBS								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or 'he sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00108		33B00201		33B00202		33B00203	
LAB ID NUMBER	MB081020		MB081009		MB081010		MB081011	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS		mg/kg	13.8	mg/kg	18.8	mg/kg	2 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00108		33B00201		33B00202		33B00203	
LAB ID NUMBER	MB081020		MB081009		MB081010		MB081011	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON	45.9	mg/kg		mg/kg		mg/kg	732	mg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00204		33B00205		33B00208		33B00301	
LAB ID NUMBER	MB081012		MB081013		MB081019		MB081001	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE		µg/kg		µg/kg		µg/kg	1 J	µg/kg
1,1,2,2-TETRACHLOROETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)		µg/kg		µg/kg		µg/kg	2 J	µg/kg
1,2-DICHLOROPROPANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
2-BUTANONE		µg/kg		µg/kg		µg/kg	4 J	µg/kg
2-HEXANONE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
ACETONE		µg/kg		µg/kg		µg/kg	36 U	µg/kg
BENZENE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
BROMOFORM		µg/kg		µg/kg		µg/kg	11 U	µg/kg
BROMOMETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
CARBON DISULFIDE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
CHLOROBENZENE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
CHLOROETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
CHLOROFORM		µg/kg		µg/kg		µg/kg	11 U	µg/kg
CHLOROMETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
ETHYLBENZENE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE		µg/kg		µg/kg		µg/kg	2 J	µg/kg
STYRENE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
TETRACHLOROETHENE		µg/kg		µg/kg		µg/kg	2 J	µg/kg
TOLUENE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
TRICHLOROETHENE		µg/kg		µg/kg		µg/kg	100	µg/kg
VINYL CHLORIDE		µg/kg		µg/kg		µg/kg	11 U	µg/kg
XYLENES, TOTAL		µg/kg		µg/kg		µg/kg	11 U	µg/kg
SEMIVOLATILES								

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER		33B00204		33B00205		33B00208		33B00301
LAB ID NUMBER		MB081012		MB081013		MB081019		MB081001
SITE		33		33		33		33
DATE SAMPLED		6/6/96		6/6/96		6/6/96		6/6/96
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,2-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,3-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,4-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)		µg/kg		µg/kg		µg/kg		µg/kg
2,4,5-TRICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4,6-TRICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DIMETHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DINITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DINITROTOLUENE		µg/kg		µg/kg		µg/kg		µg/kg
2,6-DINITROTOLUENE		µg/kg		µg/kg		µg/kg		µg/kg
2-CHLORONAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
2-CHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2-METHYLNAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
2-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
2-NITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
3,3'-DICHLOROBENZIDINE		µg/kg		µg/kg		µg/kg		µg/kg
3-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4,6-DINITRO-2-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLOROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLOROPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4-NITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
ACENAPHTHENE		µg/kg		µg/kg		µg/kg		µg/kg
ACENAPHTHYLENE		µg/kg		µg/kg		µg/kg		µg/kg
ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(A)ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(A)PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(B)FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(G,H,I)PERYLENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(K)FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or ' he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER		33B00204		33B00205		33B00208		33B00301
LAB ID NUMBER		MB081012		MB081013		MB081019		MB081001
SITE		33		33		33		33
DATE SAMPLED		6/6/96		6/6/96		6/6/96		6/6/96
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE		µg/kg		µg/kg		µg/kg		µg/kg
BIS(2-CHLOROETHYL)ETHER		µg/kg		µg/kg		µg/kg		µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
BUTYLBENZYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
CARBAZOLE		µg/kg		µg/kg		µg/kg		µg/kg
CHRYSENE		µg/kg		µg/kg		µg/kg		µg/kg
DI-N-BUTYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DI-N-OCTYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DIBENZO(A,H)ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
DIBENZOFURAN		µg/kg		µg/kg		µg/kg		µg/kg
DIETHYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DIMETHYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg
FLUORENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROBUTADIENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROCYCLOPENTADIENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROETHANE		µg/kg		µg/kg		µg/kg		µg/kg
INDENO(1,2,3-CD)PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
ISOPHORONE		µg/kg		µg/kg		µg/kg		µg/kg
N-NITROSO-DI-N-PROPYLAMINE		µg/kg		µg/kg		µg/kg		µg/kg
N-NITROSODIPHENYLAMINE		µg/kg		µg/kg		µg/kg		µg/kg
NAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
NITROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
PENTACHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
PHENANTHRENE		µg/kg		µg/kg		µg/kg		µg/kg
PHENOL		µg/kg		µg/kg		µg/kg		µg/kg
PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
PESTICIDES/PCBS								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00204		33B00205		33B00208		33B00301	
LAB ID NUMBER	MB081012		MB081013		MB081019		MB081001	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1232		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1242		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1248		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1254		μg/kg		μg/kg		μg/kg		μg/kg
AROCLOR-1260		μg/kg		μg/kg		μg/kg		μg/kg
BETA-BHC		μg/kg		μg/kg		μg/kg		μg/kg
DELTA-BHC		μg/kg		μg/kg		μg/kg		μg/kg
DIELDRIN		μg/kg		μg/kg		μg/kg		μg/kg
ENDOSULFAN I		μg/kg		μg/kg		μg/kg		μg/kg
ENDOSULFAN II		μg/kg		μg/kg		μg/kg		μg/kg
ENDOSULFAN SULFATE		μg/kg		μg/kg		μg/kg		μg/kg
ENDRIN		μg/kg		μg/kg		μg/kg		μg/kg
ENDRIN ALDEHYDE		μg/kg		μg/kg		μg/kg		μg/kg
ENDRIN KETONE		μg/kg		μg/kg		μg/kg		μg/kg
GAMMA-BHC (LINDANE)		μg/kg		μg/kg		μg/kg		μg/kg
GAMMA-CHLORDANE		μg/kg		μg/kg		μg/kg		μg/kg
HEPTACHLOR		μg/kg		μg/kg		μg/kg		μg/kg
HEPTACHLOR EPOXIDE		μg/kg		μg/kg		μg/kg		μg/kg
METHOXYCHLOR		μg/kg		μg/kg		μg/kg		μg/kg
TOXAPHENE		μg/kg		μg/kg		μg/kg		μg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	2 U	mg/kg	2 U	mg/kg		mg/kg	2 U	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or [illegible]he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00204		33B00205		33B00208		33B00301	
LAB ID NUMBER	MB081012		MB081013		MB081019		MB081001	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg	62.9	mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00302		33B00302D		33B00303		33B00304	
LAB ID NUMBER	MB081002		MB081008		MB081003		MB081004	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	4 J	µg/kg	3 J	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
ACETONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	90 U	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg	2 J	µg/kg	2 J	µg/kg	11 U	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	13	µg/kg	5 J	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 U	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.

A or ' 'ie sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	33B00302		33B00302D		33B00303		33B00304	
LAB ID NUMBER	MB081002		MB081008		MB081003		MB081004	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,2-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,3-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
1,4-DICHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)		µg/kg		µg/kg		µg/kg		µg/kg
2,4,5-TRICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4,6-TRICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DICHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DIMETHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DINITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2,4-DINITROTOLUENE		µg/kg		µg/kg		µg/kg		µg/kg
2,6-DINITROTOLUENE		µg/kg		µg/kg		µg/kg		µg/kg
2-CHLORONAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
2-CHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2-METHYLNAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
2-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
2-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
2-NITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
3,3'-DICHLOROBENZIDINE		µg/kg		µg/kg		µg/kg		µg/kg
3-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4,6-DINITRO-2-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLOROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLOROPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-METHYLPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
4-NITROANILINE		µg/kg		µg/kg		µg/kg		µg/kg
4-NITROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
ACENAPHTHENE		µg/kg		µg/kg		µg/kg		µg/kg
ACENAPHTHYLENE		µg/kg		µg/kg		µg/kg		µg/kg
ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(A)ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(A)PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(B)FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(G,H,I)PERYLENE		µg/kg		µg/kg		µg/kg		µg/kg
BENZO(K)FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg

Blank space indicates chemical not analyzed.
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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00302		33B00302D		33B00303		33B00304	
LAB ID NUMBER	MB081002		MB081008		MB081003		MB081004	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE		µg/kg		µg/kg		µg/kg		µg/kg
BIS(2-CHLOROETHYL)ETHER		µg/kg		µg/kg		µg/kg		µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
BUTYLBENZYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
CARBAZOLE		µg/kg		µg/kg		µg/kg		µg/kg
CHRYSENE		µg/kg		µg/kg		µg/kg		µg/kg
DI-N-BUTYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DI-N-OCTYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DIBENZO(A,H)ANTHRACENE		µg/kg		µg/kg		µg/kg		µg/kg
DIBENZOFURAN		µg/kg		µg/kg		µg/kg		µg/kg
DIETHYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
DIMETHYL PHTHALATE		µg/kg		µg/kg		µg/kg		µg/kg
FLUORANTHENE		µg/kg		µg/kg		µg/kg		µg/kg
FLUORENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROBUTADIENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROCYCLOPENTADIENE		µg/kg		µg/kg		µg/kg		µg/kg
HEXACHLOROETHANE		µg/kg		µg/kg		µg/kg		µg/kg
INDENO(1,2,3-CD)PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
ISOPHORONE		µg/kg		µg/kg		µg/kg		µg/kg
N-NITROSO-DI-N-PROPYLAMINE		µg/kg		µg/kg		µg/kg		µg/kg
N-NITROSODIPHENYLAMINE		µg/kg		µg/kg		µg/kg		µg/kg
NAPHTHALENE		µg/kg		µg/kg		µg/kg		µg/kg
NITROBENZENE		µg/kg		µg/kg		µg/kg		µg/kg
PENTACHLOROPHENOL		µg/kg		µg/kg		µg/kg		µg/kg
PHENANTHRENE		µg/kg		µg/kg		µg/kg		µg/kg
PHENOL		µg/kg		µg/kg		µg/kg		µg/kg
PYRENE		µg/kg		µg/kg		µg/kg		µg/kg
PESTICIDES/PCBS								
4,4'-DDD		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg		µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg		µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg		µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00302		33B00302D		33B00303		33B00304	
LAB ID NUMBER	MB081002		MB081008		MB081003		MB081004	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1248		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg		µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg		µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg		µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg		µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg		µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg		µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg		µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg		µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg		µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg		µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	2 U	mg/kg	2 U	mg/kg	274	mg/kg	109	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg		mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg		mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg		mg/kg
BARIUM		mg/kg		mg/kg		mg/kg		mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg		mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg		mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg		mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg		mg/kg
COBALT		mg/kg		mg/kg		mg/kg		mg/kg
COPPER		mg/kg		mg/kg		mg/kg		mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00302		33B00302D		33B00303		33B00304	
LAB ID NUMBER	MB081002		MB081008		MB081003		MB081004	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		6/6/96	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON		mg/kg		mg/kg		mg/kg		mg/kg
LEAD		mg/kg		mg/kg		mg/kg		mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg		mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg		mg/kg
MERCURY		mg/kg		mg/kg		mg/kg		mg/kg
NICKEL		mg/kg		mg/kg		mg/kg		mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg		mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg		mg/kg
SILVER		mg/kg		mg/kg		mg/kg		mg/kg
SODIUM		mg/kg		mg/kg		mg/kg		mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg		mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg		mg/kg
ZINC		mg/kg		mg/kg		mg/kg		mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg	926	mg/kg		mg/kg

CTO 0028

Rev. 1
5/4/99

Blank snace indicates chemical not analyzed.
A or ! ie sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00305		33B00306		33B00308		33SB1-10-12	
LAB ID NUMBER	MB081005		MB081006		MB081007		34576002	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
2-BUTANONE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
2-HEXANONE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
ACETONE	11 U	µg/kg		µg/kg		µg/kg	17 J	µg/kg
BENZENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
CHLOROMETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 U	µg/kg		µg/kg		µg/kg	11 UJ	µg/kg
STYRENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg		µg/kg		µg/kg	11 U	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00305		33B00306		33B00308		33SB1-10-12	
LAB ID NUMBER	MB081005		MB081006		MB081007		34576002	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	940 UJ	µg/kg		µg/kg		µg/kg	890 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	940 UJ	µg/kg		µg/kg		µg/kg	890 U	µg/kg
2,4-DINITROTOLUENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-CHLOROPHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-METHYLPHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
2-NITROANILINE	940 UJ	µg/kg		µg/kg		µg/kg	890 U	µg/kg
2-NITROPHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
3-NITROANILINE	940 UJ	µg/kg		µg/kg		µg/kg	890 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	940 UJ	µg/kg		µg/kg		µg/kg	890 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	370 UJ	µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-CHLOROANILINE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-METHYLPHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-NITROANILINE	940 UJ	µg/kg		µg/kg		µg/kg	890 U	µg/kg
4-NITROPHENOL	940 UJ	µg/kg		µg/kg		µg/kg	890 U	µg/kg
ACENAPHTHENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
ACENAPHTHYLENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
ANTHRACENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(A)PYRENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(B)FLUORANTHENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed.
A or ' he sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00305		33B00306		33B00308		33SB1-10-12	
LAB ID NUMBER	MB081005		MB081006		MB081007		34576002	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 UJ	µg/kg		µg/kg		µg/kg	370 UJ	µg/kg
BUTYLBENZYL PHTHALATE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
CARBAZOLE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
CHRYSENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	370 UJ	µg/kg		µg/kg		µg/kg	370 UJ	µg/kg
DI-N-OCTYL PHTHALATE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DIBENZOFURAN	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
FLUORANTHENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
FLUORENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
HEXACHLOROBUTADIENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
HEXACHLOROETHANE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
ISOPHORONE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
N-NITROSODIPHENYLAMINE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
NAPHTHALENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
NITROBENZENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	940 UJ	µg/kg		µg/kg		µg/kg	890 U	µg/kg
PHENANTHRENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
PHENOL	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
PYRENE	370 UJ	µg/kg		µg/kg		µg/kg	370 U	µg/kg
PESTICIDES/PCBS								
4,4'-DDD		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
4,4'-DDE		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
4,4'-DDT		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
ALDRIN		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
ALPHA-BHC		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
ALPHA-CHLORDANE		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
AROCLOR-1016		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER		33B00305		33B00306		33B00308		33SB1-10-12
LAB ID NUMBER		MB081005		MB081006		MB081007		34576002
SITE		33		33		33		33
DATE SAMPLED		6/6/96		6/6/96		6/6/96		12/3/92
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221		µg/kg		µg/kg		µg/kg	75 UJ	µg/kg
AROCLOR-1232		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg
AROCLOR-1242		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg
AROCLOR-1248		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg
AROCLOR-1254		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg
AROCLOR-1260		µg/kg		µg/kg		µg/kg	37 UJ	µg/kg
BETA-BHC		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
DELTA-BHC		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
DIELDRIN		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
ENDOSULFAN I		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
ENDOSULFAN II		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
ENDOSULFAN SULFATE		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
ENDRIN		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
ENDRIN ALDEHYDE		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
ENDRIN KETONE		µg/kg		µg/kg		µg/kg	3.7 UJ	µg/kg
GAMMA-BHC (LINDANE)		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
GAMMA-CHLORDANE		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
HEPTACHLOR		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
HEPTACHLOR EPOXIDE		µg/kg		µg/kg		µg/kg	1.9 UJ	µg/kg
METHOXYCHLOR		µg/kg		µg/kg		µg/kg	19 UJ	µg/kg
TOXAPHENE		µg/kg		µg/kg		µg/kg	190 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	2.1	mg/kg	2 U	mg/kg		mg/kg	9.2	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM		mg/kg		mg/kg		mg/kg	29900	mg/kg
ANTIMONY		mg/kg		mg/kg		mg/kg	2.7 U	mg/kg
ARSENIC		mg/kg		mg/kg		mg/kg	1.5 J	mg/kg
BARIUM		mg/kg		mg/kg		mg/kg	9.1 J	mg/kg
BERYLLIUM		mg/kg		mg/kg		mg/kg	0.11 U	mg/kg
CADMIUM		mg/kg		mg/kg		mg/kg	0.88 J	mg/kg
CALCIUM		mg/kg		mg/kg		mg/kg	399 J	mg/kg
CHROMIUM		mg/kg		mg/kg		mg/kg	20	mg/kg
COBALT		mg/kg		mg/kg		mg/kg	1.3 J	mg/kg
COPPER		mg/kg		mg/kg		mg/kg	6.6	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg	0.17 U	mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33B00305		33B00306		33B00308		33SB1-10-12	
LAB ID NUMBER	MB081005		MB081006		MB081007		34576002	
SITE	33		33		33		33	
DATE SAMPLED	6/6/96		6/6/96		6/6/96		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON		mg/kg		mg/kg		mg/kg	15100	mg/kg
LEAD		mg/kg		mg/kg		mg/kg	3.7	mg/kg
MAGNESIUM		mg/kg		mg/kg		mg/kg	99 J	mg/kg
MANGANESE		mg/kg		mg/kg		mg/kg	84.1	mg/kg
MERCURY		mg/kg		mg/kg		mg/kg	0.03 J	mg/kg
NICKEL		mg/kg		mg/kg		mg/kg	3.6 J	mg/kg
POTASSIUM		mg/kg		mg/kg		mg/kg	119 J	mg/kg
SELENIUM		mg/kg		mg/kg		mg/kg	0.49 J	mg/kg
SILVER		mg/kg		mg/kg		mg/kg	0.47 UJ	mg/kg
SODIUM		mg/kg		mg/kg		mg/kg	186 J	mg/kg
THALLIUM		mg/kg		mg/kg		mg/kg	0.16 U	mg/kg
VANADIUM		mg/kg		mg/kg		mg/kg	39.6	mg/kg
ZINC		mg/kg		mg/kg		mg/kg	8.6 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg	51.2	mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB1-25-27		33SB1-3-5		33SB2-10-12		33SB2-120-122	
LAB ID NUMBER	34576003		34576001		34553003		34576007	
SITE	33		33		33		33	
DATE SAMPLED	12/3/92		12/3/92		12/1/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
2-BUTANONE	11 U	µg/kg	11 U	µg/kg	1400 UJ	µg/kg	12 U	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	1400 UJ	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
ACETONE	11 UJ	µg/kg	11 UJ	µg/kg	1400 UJ	µg/kg	12 UJ	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 UJ	µg/kg	11 UJ	µg/kg	1400 UJ	µg/kg	12 UJ	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	1400 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	380 J	µg/kg	12 U	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.
A or ᴿ ʰe sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB1-25-27		33SB1-3-5		33SB2-10-12		33SB2-120-122	
LAB ID NUMBER	34576003		34576001		34553003		34576007	
SITE	33		33		33		33	
DATE SAMPLED	12/3/92		12/3/92		12/1/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
1,2-DICHLOROBENZENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
1,3-DICHLOROBENZENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
1,4-DICHLOROBENZENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2,4,5-TRICHLOROPHENOL	870 U	μg/kg	870 U	μg/kg	910 U	μg/kg	960 U	μg/kg
2,4,6-TRICHLOROPHENOL	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2,4-DICHLOROPHENOL	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2,4-DIMETHYLPHENOL	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2,4-DINITROPHENOL	870 U	μg/kg	870 U	μg/kg	910 UJ	μg/kg	960 U	μg/kg
2,4-DINITROTOLUENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2,6-DINITROTOLUENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2-CHLORONAPHTHALENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2-CHLOROPHENOL	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2-METHYLNAPHTHALENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2-METHYLPHENOL	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
2-NITROANILINE	870 U	μg/kg	870 U	μg/kg	910 U	μg/kg	960 U	μg/kg
2-NITROPHENOL	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
3,3'-DICHLOROBENZIDINE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
3-NITROANILINE	870 UJ	μg/kg	870 UJ	μg/kg	910 UJ	μg/kg	960 UJ	μg/kg
4,6-DINITRO-2-METHYLPHENOL	870 U	μg/kg	870 U	μg/kg	910 U	μg/kg	960 U	μg/kg
4-BROMOPHENYL PHENYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
4-CHLORO-3-METHYLPHENOL	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
4-CHLOROANILINE	360 U	μg/kg	360 U	μg/kg	370 UJ	μg/kg	400 U	μg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
4-METHYLPHENOL	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
4-NITROANILINE	870 U	μg/kg	870 U	μg/kg	910 UJ	μg/kg	960 U	μg/kg
4-NITROPHENOL	870 U	μg/kg	870 U	μg/kg	910 UJ	μg/kg	960 U	μg/kg
ACENAPHTHENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
ACENAPHTHYLENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
ANTHRACENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
BENZO(A)ANTHRACENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
BENZO(A)PYRENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
BENZO(B)FLUORANTHENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
BENZO(G,H,I)PERYLENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg
BENZO(K)FLUORANTHENE	360 U	μg/kg	360 U	μg/kg	370 U	μg/kg	400 U	μg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB1-25-27		33SB1-3-5		33SB2-10-12		33SB2-120-122	
LAB ID NUMBER	34576003		34576001		34553003		34576007	
SITE	33		33		33		33	
DATE SAMPLED	12/3/92		12/3/92		12/1/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	360 UJ	µg/kg	360 UJ	µg/kg	370 UJ	µg/kg	400 UJ	µg/kg
BUTYLBENZYL PHTHALATE	37 J	µg/kg	360 U	µg/kg	370 UJ	µg/kg	400 U	µg/kg
CARBAZOLE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
CHRYSENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
DI-N-BUTYL PHTHALATE	360 UJ	µg/kg	360 UJ	µg/kg	370 U	µg/kg	400 UJ	µg/kg
DI-N-OCTYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	370 UJ	µg/kg	400 U	µg/kg
DIBENZO(A,H)ANTHRACENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
FLUORANTHENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
FLUORENE	360 U	µg/kg	360 U	µg/kg	150 J	µg/kg	400 U	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
ISOPHORONE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
NAPHTHALENE	360 U	µg/kg	360 U	µg/kg	370 J	µg/kg	400 U	µg/kg
NITROBENZENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
PENTACHLOROPHENOL	870 U	µg/kg	870 U	µg/kg	910 U	µg/kg	960 U	µg/kg
PHENANTHRENE	360 U	µg/kg	360 U	µg/kg	69 J	µg/kg	400 U	µg/kg
PHENOL	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
PYRENE	360 U	µg/kg	360 U	µg/kg	370 U	µg/kg	400 U	µg/kg
PESTICIDES/PCBS								
4,4'-DDD	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.7 U	µg/kg	4 UJ	µg/kg
4,4'-DDE	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.7 U	µg/kg	2.4 J	µg/kg
4,4'-DDT	3.6 UJ	µg/kg	3.6 UJ	µg/kg	3.7 U	µg/kg	13 J	µg/kg
ALDRIN	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 U	µg/kg	2 UJ	µg/kg
ALPHA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 U	µg/kg	2 UJ	µg/kg
ALPHA-CHLORDANE	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 U	µg/kg	2 UJ	µg/kg
AROCLOR-1016	36 UJ	µg/kg	36 UJ	µg/kg	37 U	µg/kg	40 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or [illegible] the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB1-25-27		33SB1-3-5		33SB2-10-12		33SB2-120-122	
LAB ID NUMBER	34576003		34576001		34553003		34576007	
SITE	33		33		33		33	
DATE SAMPLED	12/3/92		12/3/92		12/1/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	74 UJ	μg/kg	73 UJ	μg/kg	76 U	μg/kg	81 UJ	μg/kg
AROCLOR-1232	36 UJ	μg/kg	36 UJ	μg/kg	37 U	μg/kg	40 UJ	μg/kg
AROCLOR-1242	36 UJ	μg/kg	36 UJ	μg/kg	37 U	μg/kg	40 UJ	μg/kg
AROCLOR-1248	36 UJ	μg/kg	36 UJ	μg/kg	37 U	μg/kg	40 UJ	μg/kg
AROCLOR-1254	36 UJ	μg/kg	36 UJ	μg/kg	37 U	μg/kg	40 UJ	μg/kg
AROCLOR-1260	36 UJ	μg/kg	36 UJ	μg/kg	37 U	μg/kg	40 UJ	μg/kg
BETA-BHC	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 UJ	μg/kg
DELTA-BHC	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 UJ	μg/kg
DIELDRIN	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 U	μg/kg	4 UJ	μg/kg
ENDOSULFAN I	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 UJ	μg/kg
ENDOSULFAN II	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 U	μg/kg	4 UJ	μg/kg
ENDOSULFAN SULFATE	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 U	μg/kg	4 UJ	μg/kg
ENDRIN	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 U	μg/kg	4 UJ	μg/kg
ENDRIN ALDEHYDE	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 U	μg/kg	4 UJ	μg/kg
ENDRIN KETONE	3.6 UJ	μg/kg	3.6 UJ	μg/kg	3.7 U	μg/kg	4 UJ	μg/kg
GAMMA-BHC (LINDANE)	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 UJ	μg/kg
GAMMA-CHLORDANE	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 UJ	μg/kg
HEPTACHLOR	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 UJ	μg/kg
HEPTACHLOR EPOXIDE	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.9 U	μg/kg	2 UJ	μg/kg
METHOXYCHLOR	19 UJ	μg/kg	18 UJ	μg/kg	19 U	μg/kg	20 UJ	μg/kg
TOXAPHENE	190 UJ	μg/kg	180 UJ	μg/kg	190 U	μg/kg	200 UJ	μg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	10.2	mg/kg	1.8 U	mg/kg	1310	mg/kg	2.3	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	3190	mg/kg	13700	mg/kg	8070	mg/kg	36.8 J	mg/kg
ANTIMONY	2.6 U	mg/kg	2.6 U	mg/kg	2.7 U	mg/kg	2.9 U	mg/kg
ARSENIC	1.2 J	mg/kg	0.76 J	mg/kg	3.8	mg/kg	0.17 U	mg/kg
BARIUM	3.4 J	mg/kg	14.9 J	mg/kg	4.8 J	mg/kg	0.45 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg
CADMIUM	0.45 J	mg/kg	0.6 J	mg/kg	0.65 J	mg/kg	0.29 U	mg/kg
CALCIUM	141 J	mg/kg	374 J	mg/kg	234 J	mg/kg	81.9 J	mg/kg
CHROMIUM	5.4	mg/kg	8.6	mg/kg	12.3	mg/kg	2 J	mg/kg
COBALT	1.3 U	mg/kg	1.4 J	mg/kg	1.3 U	mg/kg	1.4 U	mg/kg
COPPER	2.1 J	mg/kg	4.2 J	mg/kg	3 J	mg/kg	0.54 J	mg/kg
CYANIDE	0.16 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg	0.18 U	mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB1-25-27		33SB1-3-5		33SB2-10-12		33SB2-120-122	
LAB ID NUMBER	34576003		34576001		34653003		34576007	
SITE	33		33		33		33	
DATE SAMPLED	12/3/92		12/3/92		12/1/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON	5830	mg/kg	6970	mg/kg	13200	mg/kg	67.4	mg/kg
LEAD	0.92	mg/kg	2.7	mg/kg	21.1	mg/kg	0.26 J	mg/kg
MAGNESIUM	25.1 J	mg/kg	139 J	mg/kg	40.6 J	mg/kg	15.1 J	mg/kg
MANGANESE	15.3	mg/kg	114	mg/kg	31.7	mg/kg	0.32 J	mg/kg
MERCURY	0.03 U	mg/kg	0.03 J	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	1.7 U	mg/kg	1.7 U	mg/kg	1.7 U	mg/kg	1.9 U	mg/kg
POTASSIUM	82.6 J	mg/kg	129 J	mg/kg	83.6 J	mg/kg	45.9 U	mg/kg
SELENIUM	0.17 J	mg/kg	0.48 J	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg
SILVER	0.46 U	mg/kg	0.46 UJ	mg/kg	0.47 UJ	mg/kg	0.5 UJ	mg/kg
SODIUM	179 J	mg/kg	156 J	mg/kg	249 J	mg/kg	157 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.15 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg
VANADIUM	16.7	mg/kg	17.6	mg/kg	34.5	mg/kg	0.46 U	mg/kg
ZINC	4 J	mg/kg	8.5 J	mg/kg	6.9	mg/kg	15.4	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D e sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-15-17		33SB2-2-4		33SB2-35-37		33SB2-35-37A	
LAB ID NUMBER	34553004		34553001		34578001		34578002	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
2-BUTANONE	11 UJ	µg/kg	11 UJ	µg/kg	11 U	µg/kg	11 U	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ACETONE	150 J	µg/kg	11 UJ	µg/kg	14 J	µg/kg	11 UJ	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	11 UJ	µg/kg	15 UJ	µg/kg	11 U	µg/kg	11 UJ	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg	11 U	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-15-17		33SB2-2-4		33SB2-35-37		33SB2-35-37A	
LAB ID NUMBER	34553004		34553001		34578001		34578002	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
1,2-DICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
1,3-DICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
1,4-DICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 UJ	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2,4,5-TRICHLOROPHENOL	890 U	μg/kg	900 U	μg/kg	850 U	μg/kg	850 U	μg/kg
2,4,6-TRICHLOROPHENOL	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2,4-DICHLOROPHENOL	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2,4-DIMETHYLPHENOL	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2,4-DINITROPHENOL	890 U	μg/kg	900 UJ	μg/kg	850 U	μg/kg	850 U	μg/kg
2,4-DINITROTOLUENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2,6-DINITROTOLUENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2-CHLORONAPHTHALENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2-CHLOROPHENOL	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2-METHYLNAPHTHALENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2-METHYLPHENOL	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
2-NITROANILINE	890 U	μg/kg	900 U	μg/kg	850 U	μg/kg	850 U	μg/kg
2-NITROPHENOL	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
3,3'-DICHLOROBENZIDINE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
3-NITROANILINE	890 U	μg/kg	900 UJ	μg/kg	850 U	μg/kg	850 U	μg/kg
4,6-DINITRO-2-METHYLPHENOL	890 U	μg/kg	900 U	μg/kg	850 U	μg/kg	850 U	μg/kg
4-BROMOPHENYL PHENYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
4-CHLORO-3-METHYLPHENOL	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
4-CHLOROANILINE	370 U	μg/kg	370 UJ	μg/kg	350 U	μg/kg	350 U	μg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
4-METHYLPHENOL	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
4-NITROANILINE	890 U	μg/kg	900 UJ	μg/kg	850 U	μg/kg	850 U	μg/kg
4-NITROPHENOL	890 U	μg/kg	900 UJ	μg/kg	850 U	μg/kg	850 U	μg/kg
ACENAPHTHENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
ACENAPHTHYLENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
ANTHRACENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
BENZO(A)ANTHRACENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
BENZO(A)PYRENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
BENZO(B)FLUORANTHENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
BENZO(G,H,I)PERYLENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg
BENZO(K)FLUORANTHENE	370 U	μg/kg	370 U	μg/kg	350 U	μg/kg	350 U	μg/kg

Blank space indicates chemical not analyzed.
A or [illegible] he sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	33SB2-15-17		33SB2-2-4		33SB2-35-37		33SB2-35-37A	
LAB ID NUMBER	34553004		34553001		34578001		34578002	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	µg/kg	61 J	µg/kg	350 U	µg/kg	350 U	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	370 UJ	µg/kg	350 U	µg/kg	350 U	µg/kg
CARBAZOLE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
CHRYSENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	900 UJ	µg/kg	1600 UJ	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg	370 UJ	µg/kg	350 U	µg/kg	350 U	µg/kg
DIBENZO(A,H)ANTHRACENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
FLUORANTHENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
FLUORENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
ISOPHORONE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
NAPHTHALENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
NITROBENZENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
PENTACHLOROPHENOL	890 U	µg/kg	900 U	µg/kg	850 U	µg/kg	850 U	µg/kg
PHENANTHRENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
PHENOL	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
PYRENE	370 U	µg/kg	370 U	µg/kg	350 U	µg/kg	350 U	µg/kg
PESTICIDES/PCBS								
4,4'-DDD	3.7 U	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg
4,4'-DDE	3.7 U	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg
4,4'-DDT	3.7 U	µg/kg	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.5 UJ	µg/kg
ALDRIN	1.9 U	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg
ALPHA-BHC	1.9 U	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg
ALPHA-CHLORDANE	1.9 U	µg/kg	50 J	µg/kg	1.8 UJ	µg/kg	1.8 UJ	µg/kg
AROCLOR-1016	37 U	µg/kg	37 UJ	µg/kg	35 UJ	µg/kg	35 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-15-17		33SB2-2-4		33SB2-35-37		33SB2-35-37A	
LAB ID NUMBER	34553004		34553001		34578001		34578002	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	74 U	μg/kg	75 UJ	μg/kg	71 UJ	μg/kg	71 UJ	μg/kg
AROCLOR-1232	37 U	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	35 UJ	μg/kg
AROCLOR-1242	37 U	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	35 UJ	μg/kg
AROCLOR-1248	37 U	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	35 UJ	μg/kg
AROCLOR-1254	37 U	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	35 UJ	μg/kg
AROCLOR-1260	37 U	μg/kg	37 UJ	μg/kg	35 UJ	μg/kg	35 UJ	μg/kg
BETA-BHC	1.9 U	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg
DELTA-BHC	1.9 U	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg
DIELDRIN	3.7 U	μg/kg	13 J	μg/kg	3.5 UJ	μg/kg	3.5 UJ	μg/kg
ENDOSULFAN I	1.9 U	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg
ENDOSULFAN II	3.7 U	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.5 UJ	μg/kg
ENDOSULFAN SULFATE	3.7 U	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.5 UJ	μg/kg
ENDRIN	3.7 U	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.5 UJ	μg/kg
ENDRIN ALDEHYDE	3.7 U	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.5 UJ	μg/kg
ENDRIN KETONE	3.7 U	μg/kg	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.5 UJ	μg/kg
GAMMA-BHC (LINDANE)	1.9 U	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg
GAMMA-CHLORDANE	1.9 U	μg/kg	77 J	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg
HEPTACHLOR	1.9 U	μg/kg	3.5 J	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg
HEPTACHLOR EPOXIDE	1.9 U	μg/kg	1.9 UJ	μg/kg	1.8 UJ	μg/kg	1.8 UJ	μg/kg
METHOXYCHLOR	19 U	μg/kg	19 UJ	μg/kg	18 UJ	μg/kg	18 UJ	μg/kg
TOXAPHENE	190 U	μg/kg	190 UJ	μg/kg	180 UJ	μg/kg	180 UJ	μg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	610	mg/kg	17.7	mg/kg	2110	mg/kg	2980	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	8920	mg/kg	9590	mg/kg	616	mg/kg	233	mg/kg
ANTIMONY	2.7 U	mg/kg	2.7 U	mg/kg	2.6 U	mg/kg	2.6 U	mg/kg
ARSENIC	1.4 J	mg/kg	11.5	mg/kg	0.43 J	mg/kg	0.15 U	mg/kg
BARIUM	3.6 J	mg/kg	10.8 J	mg/kg	0.63 UJ	mg/kg	0.4 UJ	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg
CADMIUM	0.65 J	mg/kg	0.39 J	mg/kg	0.26 U	mg/kg	0.25 U	mg/kg
CALCIUM	147 J	mg/kg	617 J	mg/kg	92.3 J	mg/kg	75.1 J	mg/kg
CHROMIUM	12.8	mg/kg	8.6	mg/kg	0.79 U	mg/kg	0.78 U	mg/kg
COBALT	1.3 U	mg/kg	1.3 U	mg/kg	1.2 U	mg/kg	1.2 U	mg/kg
COPPER	3.7 J	mg/kg	6.5	mg/kg	1.3 J	mg/kg	0.62 J	mg/kg
CYANIDE	0.17 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg

Blank space indicates chemical not analyzed.
A or [illegible]e sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-15-17		33SB2-2-4		33SB2-35-37		33SB2-35-37A	
LAB ID NUMBER	34553004		34553001		34578001		34578002	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON	13900	mg/kg	5970	mg/kg	828 J	mg/kg	324 J	mg/kg
LEAD	4.9	mg/kg	16.7	mg/kg	1.9 J	mg/kg	1.1 J	mg/kg
MAGNESIUM	33.9 J	mg/kg	125 J	mg/kg	18.6 UJ	mg/kg	13.7 UJ	mg/kg
MANGANESE	26.4	mg/kg	41.4	mg/kg	1.7 J	mg/kg	0.85 UJ	mg/kg
MERCURY	0.03 U	mg/kg	0.05 J	mg/kg	0.03 U	mg/kg	0.03 UJ	mg/kg
NICKEL	1.7 U	mg/kg	1.7 U	mg/kg	1.6 U	mg/kg	1.6 U	mg/kg
POTASSIUM	77 J	mg/kg	124 J	mg/kg	40.6 U	mg/kg	40.4 U	mg/kg
SELENIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.11 UJ	mg/kg	0.11 UJ	mg/kg
SILVER	0.47 UJ	mg/kg	0.47 UJ	mg/kg	0.45 UJ	mg/kg	0.44 UJ	mg/kg
SODIUM	202 J	mg/kg	179 J	mg/kg	162 J	mg/kg	147 J	mg/kg
THALLIUM	0.16 U	mg/kg	0.16 U	mg/kg	0.15 UJ	mg/kg	0.15 UJ	mg/kg
VANADIUM	37.1	mg/kg	16.3	mg/kg	2.4 J	mg/kg	1.1 J	mg/kg
ZINC	6.2 J	mg/kg	19.3	mg/kg	5.4 UJ	mg/kg	4.1 UJ	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-5-7		33SB2-60-62		33SB2-80-82		33SB2-95-97	
LAB ID NUMBER	34553002		34576004		34576005		34576006	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/3/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
1,1,2-TRICHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
1,1-DICHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
1,1-DICHLOROETHENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
1,2-DICHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
1,2-DICHLOROPROPANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
2-BUTANONE	1400 UJ	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
2-HEXANONE	1400 UJ	µg/kg	11 U	µg/kg	11 UJ	µg/kg	10 U	µg/kg
4-METHYL-2-PENTANONE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
ACETONE	1400 UJ	µg/kg	40 J	µg/kg	11 UJ	µg/kg	3 J	µg/kg
BENZENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
BROMODICHLOROMETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
BROMOFORM	1400 U	µg/kg	11 U	µg/kg	11 UJ	µg/kg	10 U	µg/kg
BROMOMETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
CARBON DISULFIDE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
CARBON TETRACHLORIDE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
CHLOROBENZENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
CHLOROETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
CHLOROFORM	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
CHLOROMETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
CIS-1,3-DICHLOROPROPENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
DIBROMOCHLOROMETHANE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
ETHYLBENZENE	1500	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	1400 U	µg/kg	11 UJ	µg/kg	11 UJ	µg/kg	10 U	µg/kg
STYRENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
TETRACHLOROETHENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
TOLUENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
TRICHLOROETHENE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
VINYL CHLORIDE	1400 U	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
XYLENES, TOTAL	4800	µg/kg	11 U	µg/kg	11 U	µg/kg	10 U	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.
A or ʳ he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-5-7		33SB2-60-62		33SB2-80-82		33SB2-95-97	
LAB ID NUMBER	34553002		34576004		34576005		34576006	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/3/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2,4,5-TRICHLOROPHENOL	910 U	µg/kg	850 U	µg/kg	920 U	µg/kg	830 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2,4-DINITROPHENOL	910 UJ	µg/kg	850 U	µg/kg	920 U	µg/kg	830 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2-CHLOROPHENOL	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2-METHYLNAPHTHALENE	2100	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
2-NITROANILINE	910 U	µg/kg	850 U	µg/kg	920 U	µg/kg	830 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
3-NITROANILINE	910 UJ	µg/kg	850 UJ	µg/kg	920 UJ	µg/kg	830 UJ	µg/kg
4,6-DINITRO-2-METHYLPHENOL	910 U	µg/kg	850 U	µg/kg	920 U	µg/kg	830 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
4-CHLOROANILINE	370 UJ	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
4-NITROANILINE	910 UJ	µg/kg	850 U	µg/kg	920 U	µg/kg	830 U	µg/kg
4-NITROPHENOL	910 UJ	µg/kg	850 U	µg/kg	920 U	µg/kg	830 U	µg/kg
ACENAPHTHENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
ANTHRACENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
BENZO(A)PYRENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	350 U	µg/kg	380 U	µg/kg	340 U	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-5-7		33SB2-60-62		33SB2-80-82		33SB2-95-97	
LAB ID NUMBER	34553002		34576004		34576005		34576006	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/3/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 UJ	μg/kg	350 UJ	μg/kg	380 UJ	μg/kg	340 UJ	μg/kg
BUTYLBENZYL PHTHALATE	370 UJ	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
CARBAZOLE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
CHRYSENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
DI-N-BUTYL PHTHALATE	370 U	μg/kg	350 UJ	μg/kg	380 UJ	μg/kg	340 UJ	μg/kg
DI-N-OCTYL PHTHALATE	370 UJ	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
DIBENZO(A,H)ANTHRACENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
DIBENZOFURAN	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
DIETHYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
DIMETHYL PHTHALATE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
FLUORANTHENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
FLUORENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
HEXACHLOROBENZENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
HEXACHLOROBUTADIENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
HEXACHLOROETHANE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
INDENO(1,2,3-CD)PYRENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
ISOPHORONE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
N-NITROSODIPHENYLAMINE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
NAPHTHALENE	610	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
NITROBENZENE	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
PENTACHLOROPHENOL	910 U	μg/kg	850 U	μg/kg	920 U	μg/kg	830 U	μg/kg
PHENANTHRENE	240 J	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
PHENOL	370 U	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
PYRENE	40 J	μg/kg	350 U	μg/kg	380 U	μg/kg	340 U	μg/kg
PESTICIDES/PCBS								
4,4'-DDD	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	3.4 UJ	μg/kg
4,4'-DDE	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	3.4 UJ	μg/kg
4,4'-DDT	3.7 UJ	μg/kg	3.5 UJ	μg/kg	3.8 UJ	μg/kg	3.4 UJ	μg/kg
ALDRIN	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
ALPHA-BHC	1.9 UJ	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
ALPHA-CHLORDANE	3.3 J	μg/kg	1.8 UJ	μg/kg	2 UJ	μg/kg	1.8 UJ	μg/kg
AROCLOR-1016	37 UJ	μg/kg	35 UJ	μg/kg	38 UJ	μg/kg	34 UJ	μg/kg

Blank space indicates chemical not analyzed.

A or ' he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-5-7		33SB2-60-62		33SB2-80-82		33SB2-95-97	
LAB ID NUMBER	34553002		34576004		34576005		34576006	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/3/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	76 UJ	µg/kg	72 UJ	µg/kg	77 UJ	µg/kg	70 UJ	µg/kg
AROCLOR-1232	37 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	34 UJ	µg/kg
AROCLOR-1242	37 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	34 UJ	µg/kg
AROCLOR-1248	37 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	34 UJ	µg/kg
AROCLOR-1254	37 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	34 UJ	µg/kg
AROCLOR-1260	37 UJ	µg/kg	35 UJ	µg/kg	38 UJ	µg/kg	34 UJ	µg/kg
BETA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
DELTA-BHC	1.9 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
DIELDRIN	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.4 UJ	µg/kg
ENDOSULFAN I	1.9 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
ENDOSULFAN II	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.4 UJ	µg/kg
ENDOSULFAN SULFATE	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.4 UJ	µg/kg
ENDRIN	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.4 UJ	µg/kg
ENDRIN ALDEHYDE	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.4 UJ	µg/kg
ENDRIN KETONE	3.7 UJ	µg/kg	3.5 UJ	µg/kg	3.8 UJ	µg/kg	3.4 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.9 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
GAMMA-CHLORDANE	4.7 J	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR	1.9 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.9 UJ	µg/kg	1.8 UJ	µg/kg	2 UJ	µg/kg	1.8 UJ	µg/kg
METHOXYCHLOR	19 UJ	µg/kg	18 UJ	µg/kg	20 UJ	µg/kg	18 UJ	µg/kg
TOXAPHENE	190 UJ	µg/kg	180 UJ	µg/kg	200 UJ	µg/kg	180 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	7790	mg/kg	222	mg/kg	862	mg/kg	27.2	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	5610	mg/kg	575	mg/kg	597	mg/kg	138	mg/kg
ANTIMONY	2.8 U	mg/kg	2.6 U	mg/kg	2.8 U	mg/kg	2.5 U	mg/kg
ARSENIC	5.2	mg/kg	0.36 J	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg
BARIUM	8.9 J	mg/kg	0.63 J	mg/kg	0.64 J	mg/kg	0.54 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.1 U	mg/kg
CADMIUM	0.77 J	mg/kg	0.26 U	mg/kg	0.28 U	mg/kg	0.25 U	mg/kg
CALCIUM	655 J	mg/kg	88.6 J	mg/kg	82.4 J	mg/kg	56 J	mg/kg
CHROMIUM	21.5	mg/kg	1.3 J	mg/kg	2.9	mg/kg	0.85 J	mg/kg
COBALT	1.3 U	mg/kg	1.2 U	mg/kg	1.3 U	mg/kg	1.2 U	mg/kg
COPPER	3.1 J	mg/kg	0.62 J	mg/kg	0.93 J	mg/kg	0.65 J	mg/kg
CYANIDE	0.17 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB2-5-7		33SB2-60-62		33SB2-80-82		33SB2-96-97	
LAB ID NUMBER	34553002		34576004		34576005		34576006	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/3/92		12/3/92		12/3/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON	8490	mg/kg	318	mg/kg	1500	mg/kg	333	mg/kg
LEAD	24.3	mg/kg	0.45 J	mg/kg	0.57 J	mg/kg	0.29 J	mg/kg
MAGNESIUM	58.1 J	mg/kg	19 J	mg/kg	20.1 J	mg/kg	11 J	mg/kg
MANGANESE	93.3	mg/kg	1.8 J	mg/kg	2.3 J	mg/kg	1.5 J	mg/kg
MERCURY	0.04 J	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	1.8 U	mg/kg	1.6 U	mg/kg	1.8 U	mg/kg	1.6 U	mg/kg
POTASSIUM	90 J	mg/kg	42.2 J	mg/kg	49.1 J	mg/kg	39.7 U	mg/kg
SELENIUM	0.11 U	mg/kg	0.25 J	mg/kg	0.11 U	mg/kg	0.1 U	mg/kg
SILVER	0.48 UJ	mg/kg	0.45 UJ	mg/kg	0.48 UJ	mg/kg	0.44 UJ	mg/kg
SODIUM	171 J	mg/kg	159 J	mg/kg	163 J	mg/kg	128 J	mg/kg
THALLIUM	0.16 U	mg/kg	0.15 U	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg
VANADIUM	17.1	mg/kg	1.2 J	mg/kg	6.7 J	mg/kg	0.97 J	mg/kg
ZINC	7.6	mg/kg	4.9 J	mg/kg	4.8 J	mg/kg	1.9 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

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A or D [illegible] the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB3-10-12		33SB3-15-17		33SB3-4-6		33SB4-16-17	
LAB ID NUMBER	34553006		34553007		34553005		34566003	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/1/92		12/2/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1,2-TRICHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,1-DICHLOROETHENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
1,2-DICHLOROPROPANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
2-BUTANONE	11 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg
2-HEXANONE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
4-METHYL-2-PENTANONE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ACETONE	5 J	μg/kg	35 J	μg/kg	3 J	μg/kg	11 UJ	μg/kg
BENZENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMODICHLOROMETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOFORM	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
BROMOMETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON DISULFIDE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CARBON TETRACHLORIDE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROBENZENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROFORM	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CHLOROMETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
CIS-1,3-DICHLOROPROPENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
DIBROMOCHLOROMETHANE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
ETHYLBENZENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
METHYL TERT-BUTYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
METHYLENE CHLORIDE	11 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg	11 UJ	μg/kg
STYRENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TETRACHLOROETHENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TOLUENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
TRICHLOROETHENE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
VINYL CHLORIDE	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
XYLENES, TOTAL	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg	11 U	μg/kg
SEMIVOLATILES								

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB3-10-12		33SB3-15-17		33SB3-4-6		33SB4-15-17	
LAB ID NUMBER	34553006		34553007		34553005		34566003	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/1/92		12/2/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
1,2-DICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
1,3-DICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
1,4-DICHLOROBENZENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 UJ	μg/kg	370 UJ	μg/kg	360 UJ	μg/kg	360 U	μg/kg
2,4,5-TRICHLOROPHENOL	890 U	μg/kg	890 U	μg/kg	870 U	μg/kg	880 U	μg/kg
2,4,6-TRICHLOROPHENOL	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2,4-DICHLOROPHENOL	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2,4-DIMETHYLPHENOL	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2,4-DINITROPHENOL	890 U	μg/kg	890 U	μg/kg	870 U	μg/kg	880 UJ	μg/kg
2,4-DINITROTOLUENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2,6-DINITROTOLUENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2-CHLORONAPHTHALENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2-CHLOROPHENOL	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2-METHYLNAPHTHALENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2-METHYLPHENOL	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
2-NITROANILINE	890 U	μg/kg	890 U	μg/kg	870 U	μg/kg	880 U	μg/kg
2-NITROPHENOL	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
3,3'-DICHLOROBENZIDINE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
3-NITROANILINE	890 U	μg/kg	890 U	μg/kg	870 U	μg/kg	880 UJ	μg/kg
4,6-DINITRO-2-METHYLPHENOL	890 U	μg/kg	890 U	μg/kg	870 U	μg/kg	880 U	μg/kg
4-BROMOPHENYL PHENYL ETHER		μg/kg		μg/kg		μg/kg		μg/kg
4-CHLORO-3-METHYLPHENOL	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
4-CHLOROANILINE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 UJ	μg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
4-METHYLPHENOL	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
4-NITROANILINE	890 U	μg/kg	890 U	μg/kg	870 U	μg/kg	880 UJ	μg/kg
4-NITROPHENOL	890 U	μg/kg	890 U	μg/kg	870 U	μg/kg	880 UJ	μg/kg
ACENAPHTHENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
ACENAPHTHYLENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
ANTHRACENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
BENZO(A)ANTHRACENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
BENZO(A)PYRENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
BENZO(B)FLUORANTHENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
BENZO(G,H,I)PERYLENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg
BENZO(K)FLUORANTHENE	370 U	μg/kg	370 U	μg/kg	360 U	μg/kg	360 U	μg/kg

Blank space indicates chemical not analyzed.

A or D [illegible]e sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	33SB3-10-12		33SB3-15-17		33SB3-4-6		33SB4-15-17	
LAB ID NUMBER	34553006		34553007		34553005		34566003	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/1/92		12/2/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	µg/kg	190 J	µg/kg	360 U	µg/kg	56 J	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 UJ	µg/kg
CARBAZOLE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
CHRYSENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 UJ	µg/kg
DIBENZO(A,H)ANTHRACENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
FLUORANTHENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
FLUORENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
ISOPHORONE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
NAPHTHALENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
NITROBENZENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
PENTACHLOROPHENOL	890 U	µg/kg	890 U	µg/kg	870 U	µg/kg	880 U	µg/kg
PHENANTHRENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
PHENOL	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
PYRENE	370 U	µg/kg	370 U	µg/kg	360 U	µg/kg	360 U	µg/kg
PESTICIDES/PCBS								
4,4'-DDD	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
4,4'-DDE	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
4,4'-DDT	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
ALDRIN	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-BHC	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
ALPHA-CHLORDANE	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
AROCLOR-1016	37 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB3-10-12		33SB3-15-17		33SB3-4-6		33SB4-15-17	
LAB ID NUMBER	34553006		34553007		34553005		34566003	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/1/92		12/2/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	74 UJ	µg/kg	74 UJ	µg/kg	73 UJ	µg/kg	74 UJ	µg/kg
AROCLOR-1232	37 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg
AROCLOR-1242	37 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg
AROCLOR-1248	37 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg
AROCLOR-1254	37 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg
AROCLOR-1260	37 UJ	µg/kg	37 UJ	µg/kg	36 UJ	µg/kg	36 UJ	µg/kg
BETA-BHC	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
DELTA-BHC	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
DIELDRIN	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
ENDOSULFAN I	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
ENDOSULFAN II	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
ENDOSULFAN SULFATE	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
ENDRIN	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
ENDRIN ALDEHYDE	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
ENDRIN KETONE	3.7 UJ	µg/kg	3.7 UJ	µg/kg	3.6 UJ	µg/kg	3.6 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
GAMMA-CHLORDANE	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.9 UJ	µg/kg	1.9 UJ	µg/kg	1.8 UJ	µg/kg	1.9 UJ	µg/kg
METHOXYCHLOR	19 UJ	µg/kg	19 UJ	µg/kg	18 UJ	µg/kg	19 UJ	µg/kg
TOXAPHENE	190 UJ	µg/kg	190 UJ	µg/kg	180 UJ	µg/kg	190 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	1.8 U	mg/kg	4.3	mg/kg	1.8 U	mg/kg	5.6	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	25100	mg/kg	14400	mg/kg	11000	mg/kg	3740	mg/kg
ANTIMONY	2.7 U	mg/kg	2.7 U	mg/kg	2.6 U	mg/kg	2.7 U	mg/kg
ARSENIC	2.9	mg/kg	0.73 J	mg/kg	1.9 J	mg/kg	2.6	mg/kg
BARIUM	3.3 J	mg/kg	3.7 J	mg/kg	12.5 J	mg/kg	2.2 J	mg/kg
BERYLLIUM	0.13 J	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg	0.11 U	mg/kg
CADMIUM	0.52 J	mg/kg	0.68 J	mg/kg	0.57 J	mg/kg	0.5 J	mg/kg
CALCIUM	209 J	mg/kg	284 J	mg/kg	351 J	mg/kg	263 J	mg/kg
CHROMIUM	16.6	mg/kg	12.8	mg/kg	6.9	mg/kg	10.2	mg/kg
COBALT	1.3 U	mg/kg	1.3 U	mg/kg	1.5 J	mg/kg	1.3 U	mg/kg
COPPER	4.9 J	mg/kg	4.2 J	mg/kg	2.9 J	mg/kg	2.3 J	mg/kg
CYANIDE	0.17 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg

Blank space indicates chemical not analyzed.
A or [illegible] the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	33SB3-10-12		33SB3-15-17		33SB3-4-6		33SB4-15-17	
LAB ID NUMBER	34553006		34553007		34553005		34566003	
SITE	33		33		33		33	
DATE SAMPLED	12/1/92		12/1/92		12/1/92		12/2/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON	12800	mg/kg	13000	mg/kg	6590	mg/kg	12700	mg/kg
LEAD	3.3	mg/kg	3.5	mg/kg	3.2	mg/kg	4.8	mg/kg
MAGNESIUM	62.2 J	mg/kg	69.5 J	mg/kg	124 J	mg/kg	24.9 J	mg/kg
MANGANESE	24.3	mg/kg	27.7	mg/kg	87.7	mg/kg	21.8	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg
NICKEL	1.7 U	mg/kg	1.7 U	mg/kg	2.7 J	mg/kg	1.7 U	mg/kg
POTASSIUM	60 J	mg/kg	42.4 U	mg/kg	93.3 J	mg/kg	43.5 J	mg/kg
SELENIUM	0.11 U	mg/kg	0.22 J	mg/kg	0.11 U	mg/kg	0.52 J	mg/kg
SILVER	0.46 UJ	mg/kg	0.47 UJ	mg/kg	0.46 UJ	mg/kg	0.46 U	mg/kg
SODIUM	193 J	mg/kg	186 J	mg/kg	165 J	mg/kg	217 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.16 U	mg/kg	0.15 U	mg/kg	0.15 U	mg/kg
VANADIUM	34.9	mg/kg	34.8	mg/kg	15.9	mg/kg	34.5	mg/kg
ZINC	5.2	mg/kg	6.7	mg/kg	5.8 J	mg/kg	4 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

R4708989

SAMPLE NUMBER	33SB4-3-5		33SB4-5-7		33SB5-0-2		33SB5-0-2A	
LAB ID NUMBER	34566001		34566002					
SITE	33		33		33		33	
DATE SAMPLED	12/2/92		12/2/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
2-BUTANONE	11 UJ	µg/kg	11 UJ	µg/kg	12 U	µg/kg	12 U	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
ACETONE	11 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	12 UJ	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
METHYLENE CHLORIDE	14 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	12 UJ	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	48	µg/kg	29	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	12 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	11 J	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.
A or ' 'he sample number indicates a duplicate.

CTO 0028

Rev. 1
5/4/99

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB4-3-5		33SB4-6-7		33SB5-0-2		33SB5-0-2A	
LAB ID NUMBER	34566001		34566002					
SITE	33		33		33		33	
DATE SAMPLED	12/2/92		12/2/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,4,5-TRICHLOROPHENOL	880 U	µg/kg	900 U	µg/kg	940 U	µg/kg	930 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2,4-DINITROPHENOL	880 UJ	µg/kg	900 U	µg/kg	940 U	µg/kg	930 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	370 UJ	µg/kg	390 U	µg/kg	380 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-CHLOROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	370 U	µg/kg	2000	µg/kg	2500	µg/kg
2-METHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
2-NITROANILINE	880 U	µg/kg	900 U	µg/kg	940 U	µg/kg	930 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
3-NITROANILINE	880 UJ	µg/kg	900 UJ	µg/kg	940 U	µg/kg	930 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	880 U	µg/kg	900 U	µg/kg	940 U	µg/kg	930 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg		µg/kg
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
4-CHLOROANILINE	360 UJ	µg/kg	370 UJ	µg/kg	390 UJ	µg/kg	380 UJ	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
4-NITROANILINE	880 UJ	µg/kg	900 UJ	µg/kg	940 U	µg/kg	930 U	µg/kg
4-NITROPHENOL	880 UJ	µg/kg	900 U	µg/kg	940 U	µg/kg	930 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
ANTHRACENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(A)PYRENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(B)FLUORANTHENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(G,H,I)PERYLENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BENZO(K)FLUORANTHENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg

Blank space indicates chemical not analyzed.
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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB4-3-5		33SB4-5-7		33SB5-0-2		33SB5-0-2A	
LAB ID NUMBER	34566001		34566002					
SITE	33		33		33		33	
DATE SAMPLED	12/2/92		12/2/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	410 J	µg/kg	370 UJ	µg/kg	390 U	µg/kg	380 U	µg/kg
BUTYLBENZYL PHTHALATE	360 UJ	µg/kg	370 UJ	µg/kg	390 U	µg/kg	380 U	µg/kg
CARBAZOLE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
CHRYSENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DI-N-OCTYL PHTHALATE	360 UJ	µg/kg	370 UJ	µg/kg	390 U	µg/kg	380 U	µg/kg
DIBENZO(A,H)ANTHRACENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	370 UJ	µg/kg	390 U	µg/kg	380 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
FLUORANTHENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
FLUORENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	68 J	µg/kg
HEXACHLOROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	370 U	µg/kg	390 UJ	µg/kg	380 UJ	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
ISOPHORONE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
NAPHTHALENE	360 U	µg/kg	370 U	µg/kg	270 J	µg/kg	350 J	µg/kg
NITROBENZENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
PENTACHLOROPHENOL	880 U	µg/kg	900 U	µg/kg	940 UJ	µg/kg	930 UJ	µg/kg
PHENANTHRENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
PHENOL	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
PYRENE	360 U	µg/kg	370 U	µg/kg	390 U	µg/kg	380 U	µg/kg
PESTICIDES/PCBS								
4,4'-DDD	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
4,4'-DDE	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
4,4'-DDT	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
ALDRIN	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
ALPHA-BHC	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
ALPHA-CHLORDANE	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
AROCLOR-1016	36 UJ	µg/kg	37 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg

Blank space indicates chemical not analyzed.
A or ' he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB4-3-5		33SB4-5-7		33SB5-0-2		33SB5-0-2A	
LAB ID NUMBER	34566001		34566002					
SITE	33		33		33		33	
DATE SAMPLED	12/2/92		12/2/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	74 UJ	µg/kg	75 UJ	µg/kg	79 UJ	µg/kg	78 UJ	µg/kg
AROCLOR-1232	36 UJ	µg/kg	37 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1242	36 UJ	µg/kg	37 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1248	36 UJ	µg/kg	37 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1254	36 UJ	µg/kg	37 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg
AROCLOR-1260	36 UJ	µg/kg	37 UJ	µg/kg	39 UJ	µg/kg	38 UJ	µg/kg
BETA-BHC	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
DELTA-BHC	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
DIELDRIN	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
ENDOSULFAN I	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
ENDOSULFAN II	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
ENDOSULFAN SULFATE	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
ENDRIN	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
ENDRIN ALDEHYDE	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
ENDRIN KETONE	3.6 UJ	µg/kg	3.7 UJ	µg/kg	3.9 UJ	µg/kg	3.8 UJ	µg/kg
GAMMA-BHC (LINDANE)	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
GAMMA-CHLORDANE	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
HEPTACHLOR	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
HEPTACHLOR EPOXIDE	1.9 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	2 UJ	µg/kg
METHOXYCHLOR	19 UJ	µg/kg	19 UJ	µg/kg	20 UJ	µg/kg	20 UJ	µg/kg
TOXAPHENE	190 UJ	µg/kg	190 UJ	µg/kg	200 UJ	µg/kg	200 UJ	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	14.1	mg/kg	1.9 U	mg/kg	2340	mg/kg	2260	mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg		mg/kg
METALS								
ALUMINUM	9960	mg/kg	27000	mg/kg	11400	mg/kg	28400	mg/kg
ANTIMONY	2.7 U	mg/kg	2.7 U	mg/kg	2.9 U	mg/kg	2.8 U	mg/kg
ARSENIC	0.7 J	mg/kg	2.1 J	mg/kg	2.6	mg/kg	2.8	mg/kg
BARIUM	14.3 J	mg/kg	14.5 J	mg/kg	11.2 J	mg/kg	18.1 J	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg	0.12 U	mg/kg
CADMIUM	0.45 J	mg/kg	0.72 J	mg/kg	0.39 J	mg/kg	0.9 J	mg/kg
CALCIUM	691 J	mg/kg	548 J	mg/kg	720 J	mg/kg	870 J	mg/kg
CHROMIUM	6.9	mg/kg	18.5	mg/kg	11.9	mg/kg	19	mg/kg
COBALT	1.8 J	mg/kg	1.3 J	mg/kg	1.4 U	mg/kg	1.7 J	mg/kg
COPPER	2.9 J	mg/kg	5.9	mg/kg	4.7 J	mg/kg	7.4	mg/kg
CYANIDE	0.17 U	mg/kg	0.17 U	mg/kg	0.18 U	mg/kg	0.17 U	mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB4-3-5		33SB4-5-7		33SB5-0-2		33SB5-0-2A	
LAB ID NUMBER	34566001		34566002					
SITE	33		33		33		33	
DATE SAMPLED	12/2/92		12/2/92		12/6/92		12/6/92	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON	5880	mg/kg	14900	mg/kg	13700	mg/kg	14400	mg/kg
LEAD	7.5	mg/kg	4.7	mg/kg	6.1	mg/kg	6.4	mg/kg
MAGNESIUM	95.8 J	mg/kg	148 J	mg/kg	74.2 J	mg/kg	204 J	mg/kg
MANGANESE	169	mg/kg	46.8	mg/kg	93.4	mg/kg	89.7	mg/kg
MERCURY	0.04 J	mg/kg	0.03 J	mg/kg	0.17	mg/kg	0.07 J	mg/kg
NICKEL	1.7 U	mg/kg	3.8 J	mg/kg	1.8 U	mg/kg	3.2 J	mg/kg
POTASSIUM	107 J	mg/kg	180 J	mg/kg	123 J	mg/kg	197 J	mg/kg
SELENIUM	0.43 J	mg/kg	0.64 J	mg/kg	0.12 U	mg/kg	0.22 J	mg/kg
SILVER	0.46 U	mg/kg	0.47 U	mg/kg	0.5 U	mg/kg	0.49 U	mg/kg
SODIUM	218 J	mg/kg	214 J	mg/kg	239 J	mg/kg	172 J	mg/kg
THALLIUM	0.15 U	mg/kg	0.16 U	mg/kg	0.17 U	mg/kg	0.16 U	mg/kg
VANADIUM	14.4	mg/kg	38.2	mg/kg	37.2	mg/kg	39.6	mg/kg
ZINC	5.9	mg/kg	8.6	mg/kg	6.1 J	mg/kg	10.9	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or [illegible]e sample number indicates a duplicate.

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB5-10-12		33SB5-20-22		33SB5-5-7		W33DP00901	
LAB ID NUMBER	34607004		34607005		34607003		9803117 - 05	
SITE	33		33		33		33	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		3/18/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
1,1,2-TRICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
1,1-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
1,1-DICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
1,2-DICHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
1,2-DICHLOROPROPANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
2-BUTANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 UR	µg/kg
2-HEXANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
4-METHYL-2-PENTANONE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
ACETONE	11 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	6 UJ	µg/kg
BENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
BROMODICHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
BROMOFORM	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
BROMOMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
CARBON DISULFIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
CARBON TETRACHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
CHLOROBENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
CHLOROETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 UJ	µg/kg
CHLOROFORM	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
CHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
CIS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
DIBROMOCHLOROMETHANE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
ETHYLBENZENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
METHYL TERT-BUTYL ETHER		µg/kg		µg/kg		µg/kg	6 U	µg/kg
METHYLENE CHLORIDE	11 UJ	µg/kg	11 UJ	µg/kg	12 UJ	µg/kg	24 U	µg/kg
STYRENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
TETRACHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
TOLUENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
TRICHLOROETHENE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
VINYL CHLORIDE	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
XYLENES, TOTAL	11 U	µg/kg	11 U	µg/kg	12 U	µg/kg	6 U	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.

A or D in the sample number indicates a duplicate.

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB5-10-12		33SB5-20-22		33SB5-5-7		W33DP00901	
LAB ID NUMBER	34607004		34607005		34607003		9803117 - 05	
SITE	33		33		33		33	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		3/18/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	910 U	µg/kg	900 U	µg/kg	930 U	µg/kg	370 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	910 U	µg/kg	900 U	µg/kg	930 U	µg/kg	370 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2-CHLOROPHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2-METHYLPHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
2-NITROANILINE	910 U	µg/kg	900 U	µg/kg	930 U	µg/kg	370 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
3-NITROANILINE	910 U	µg/kg	900 U	µg/kg	930 U	µg/kg	370 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	910 U	µg/kg	900 U	µg/kg	930 U	µg/kg	370 U	µg/kg
4-BROMOPHENYL PHENYL ETHER		µg/kg		µg/kg		µg/kg	370 U	µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	370 UJ	µg/kg	370 UJ	µg/kg	380 UJ	µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
4-NITROANILINE	910 U	µg/kg	900 U	µg/kg	930 U	µg/kg	370 U	µg/kg
4-NITROPHENOL	910 U	µg/kg	900 U	µg/kg	930 U	µg/kg	370 U	µg/kg
ACENAPHTHENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
ANTHRACENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
BENZO(A)PYRENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg

Blank space indicates chemical not analyzed.
A or 'he sample number indicates a duplicate.

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Rev. 1
5/4/99

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APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB5-10-12		33SB5-20-22		33SB5-5-7		W33DP00901	
LAB ID NUMBER	34607004		34607005		34607003		9803117-05	
SITE	33		33		33		33	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		3/18/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
CARBAZOLE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
CHRYSENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
FLUORANTHENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
FLUORENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 UJ	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 UJ	µg/kg	370 UJ	µg/kg	380 UJ	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
ISOPHORONE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	22 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
NAPHTHALENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
NITROBENZENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	910 UJ	µg/kg	900 UJ	µg/kg	930 UJ	µg/kg	370 U	µg/kg
PHENANTHRENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
PHENOL	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
PYRENE	370 U	µg/kg	370 U	µg/kg	380 U	µg/kg	370 U	µg/kg
PESTICIDES/PCBS								
4,4'-DDD	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
4,4'-DDE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
4,4'-DDT	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
ALDRIN	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
ALPHA-BHC	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
AROCLOR-1016	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	37 U	µg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB5-10-12		33SB5-20-22		33SB5-5-7		W33DP00901	
LAB ID NUMBER	34607004		34607005		34607003		9803117 - 05	
SITE	33		33		33		33	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		3/18/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	77 UJ	µg/kg	75 UJ	µg/kg	77 UJ	µg/kg	74 U	µg/kg
AROCLOR-1232	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	37 U	µg/kg
AROCLOR-1242	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	37 U	µg/kg
AROCLOR-1248	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	37 U	µg/kg
AROCLOR-1254	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	37 U	µg/kg
AROCLOR-1260	38 UJ	µg/kg	37 UJ	µg/kg	38 UJ	µg/kg	37 U	µg/kg
BETA-BHC	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
DELTA-BHC	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
DIELDRIN	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
ENDOSULFAN I	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
ENDOSULFAN SULFATE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
ENDRIN	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
ENDRIN ALDEHYDE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
ENDRIN KETONE	3.8 UJ	µg/kg	3.7 UJ	µg/kg	3.8 UJ	µg/kg	3.7 U	µg/kg
GAMMA-BHC (LINDANE)	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
HEPTACHLOR	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	2 UJ	µg/kg	1.9 UJ	µg/kg	2 UJ	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	20 UJ	µg/kg	19 UJ	µg/kg	20 UJ	µg/kg	19 U	µg/kg
TOXAPHENE	200 UJ	µg/kg	190 UJ	µg/kg	200 UJ	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS	4.8	mg/kg	3 UJ	mg/kg	18.2	mg/kg		mg/kg
TPH (C8-C40)		mg/kg		mg/kg		mg/kg	9.3 U	mg/kg
METALS								
ALUMINUM	36100	mg/kg	6320	mg/kg	47800	mg/kg	38100	mg/kg
ANTIMONY	2.8 U	mg/kg	2.7 U	mg/kg	2.8 U	mg/kg	1.1 UJ	mg/kg
ARSENIC	0.89 J	mg/kg	2.3	mg/kg	4.9	mg/kg	7.5	mg/kg
BARIUM	7.2 J	mg/kg	2.8 J	mg/kg	13.5 J	mg/kg	9.1	mg/kg
BERYLLIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg	0.67 U	mg/kg
CADMIUM	0.74 J	mg/kg	0.55 J	mg/kg	1 J	mg/kg	0.67 U	mg/kg
CALCIUM	254 J	mg/kg	100 J	mg/kg	434 J	mg/kg	222 U	mg/kg
CHROMIUM	34.7	mg/kg	11.9	mg/kg	30.6	mg/kg	31.8	mg/kg
COBALT	1.3 U	mg/kg	1.3 U	mg/kg	1.8 J	mg/kg	1.1 U	mg/kg
COPPER	7.8	mg/kg	3.6 J	mg/kg	11.1	mg/kg	9.8	mg/kg
CYANIDE	0.17 U	mg/kg	0.17 U	mg/kg	0.17 U	mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or ' he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	33SB5-10-12		33SB5-20-22		33SB5-5-7		W33DP00901-	
LAB ID NUMBER	34607004		34607005		34607003		9803117 - 05	
SITE	33		33		33		33	
DATE SAMPLED	12/6/92		12/6/92		12/6/92		3/18/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON	20600	mg/kg	15100	mg/kg	22300	mg/kg	21000	mg/kg
LEAD	4.2	mg/kg	4.7	mg/kg	9.5	mg/kg	7.4 J	mg/kg
MAGNESIUM	80.3 J	mg/kg	35.5 J	mg/kg	170 J	mg/kg	129	mg/kg
MANGANESE	31.7	mg/kg	17.9	mg/kg	60	mg/kg	30.2	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.05 J	mg/kg	0.04 U	mg/kg
NICKEL	1.8 U	mg/kg	1.7 U	mg/kg	3.2 J	mg/kg	2.9	mg/kg
POTASSIUM	154 J	mg/kg	116 J	mg/kg	205 J	mg/kg	130 U	mg/kg
SELENIUM	0.11 U	mg/kg	0.11 U	mg/kg	0.12 U	mg/kg	1.1 U	mg/kg
SILVER	0.48 U	mg/kg	0.47 U	mg/kg	0.49 U	mg/kg	0.67 U	mg/kg
SODIUM	248 J	mg/kg	181 J	mg/kg	160 J	mg/kg	111 U	mg/kg
THALLIUM	0.16 U	mg/kg	0.16 U	mg/kg	0.16 U	mg/kg	2.2 U	mg/kg
VANADIUM	57.1	mg/kg	40.4	mg/kg	61.5	mg/kg	60.9	mg/kg
ZINC	7.4	mg/kg	5.2 J	mg/kg	13.6	mg/kg	5.2 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or D in the sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00601		W33SB00603		W33SB00701		W33SB00801	
LAB ID NUMBER			9803117 - 03		9803130 - 04		9803134 - 04	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/18/98		3/19/98		3/20/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1,2,2-TETRACHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1,2-TRICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1-DICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,1-DICHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROETHENE (TOTAL)	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
1,2-DICHLOROPROPANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
2-BUTANONE	5 UR	µg/kg	5 UR	µg/kg	5 UR	µg/kg	6 UR	µg/kg
2-HEXANONE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
4-METHYL-2-PENTANONE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
ACETONE	5 UJ	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg	4 J	µg/kg
BENZENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMODICHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMOFORM	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
BROMOMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CARBON DISULFIDE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CARBON TETRACHLORIDE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROBENZENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROETHANE	5 UJ	µg/kg	5 UJ	µg/kg	5 UJ	µg/kg	6 UJ	µg/kg
CHLOROFORM	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
CIS-1,3-DICHLOROPROPENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
DIBROMOCHLOROMETHANE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
ETHYLBENZENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
METHYL TERT-BUTYL ETHER	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
METHYLENE CHLORIDE	36 U	µg/kg	9 U	µg/kg	19 U	µg/kg	18 U	µg/kg
STYRENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TETRACHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TOLUENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TRANS-1,3-DICHLOROPROPENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
TRICHLOROETHENE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
VINYL CHLORIDE	5 U	µg/kg	5 U	µg/kg	5 U	µg/kg	6 U	µg/kg
XYLENES, TOTAL	5 U	µg/kg	5 U	µg/kg	2 J	µg/kg	6 U	µg/kg
SEMIVOLATILES								

Blank space indicates chemical not analyzed.
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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00601		W33SB00603		W33SB00701		W33SB00801	
LAB ID NUMBER			9803117 - 03		9803130 - 04		9803134 - 04	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/18/98		3/19/98		3/20/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4,6-TRICHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,4-DINITROTOLUENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-CHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-NITROANILINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
2-NITROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
3-NITROANILINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-CHLORO-3-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-NITROANILINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
4-NITROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
ACENAPHTHENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
ANTHRACENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BENZO(A)PYRENE	110 UJ	µg/kg	100 U	µg/kg	110 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	360 UJ	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	360 UJ	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	360 UJ	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00601		W33SB00603		W33SB00701		W33SB00801	
LAB ID NUMBER			9803117 - 03		9803130 - 04		9803134 - 04	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/18/98		3/19/98		3/20/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
CARBAZOLE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
CHRYSENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DI-N-OCTYL PHTHALATE	360 UJ	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 UJ	µg/kg	100 U	µg/kg	110 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
FLUORANTHENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
FLUORENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	360 UJ	µg/kg	350 UJ	µg/kg	360 UJ	µg/kg	370 UJ	µg/kg
HEXACHLOROBUTADIENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	360 UJ	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
ISOPHORONE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	µg/kg	21 U	µg/kg	22 U	µg/kg	22 U	µg/kg
N-NITROSODIPHENYLAMINE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
NAPHTHALENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
NITROBENZENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
PHENANTHRENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
PHENOL	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
PYRENE	360 U	µg/kg	350 U	µg/kg	360 U	µg/kg	370 U	µg/kg
PESTICIDES/PCBS								
4,4'-DDD	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
4,4'-DDE	0.16 J	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
4,4'-DDT	0.6 J	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ALDRIN	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-BHC	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ALPHA-CHLORDANE	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
AROCLOR-1016	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	37 U	µg/kg

Blank space indicates chemical not analyzed.
A or he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00601		W33SB00603		W33SB00701		W33SB00801	
LAB ID NUMBER			9803117 - 03		9803130 - 04		9803134 - 04	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/18/98		3/19/98		3/20/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	73 U	µg/kg	69 U	µg/kg	72 U	µg/kg	75 U	µg/kg
AROCLOR-1232	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1242	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1248	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1254	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	37 U	µg/kg
AROCLOR-1260	36 U	µg/kg	35 U	µg/kg	36 U	µg/kg	37 U	µg/kg
BETA-BHC	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DELTA-BHC	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
DIELDRIN	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDOSULFAN I	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDOSULFAN SULFATE	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN ALDEHYDE	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
ENDRIN KETONE	3.6 U	µg/kg	3.5 U	µg/kg	3.6 U	µg/kg	3.7 U	µg/kg
GAMMA-BHC (LINDANE)	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
GAMMA-CHLORDANE	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
HEPTACHLOR EPOXIDE	1.8 U	µg/kg	1.7 U	µg/kg	1.8 U	µg/kg	1.9 U	µg/kg
METHOXYCHLOR	18 U	µg/kg	17 U	µg/kg	18 U	µg/kg	19 U	µg/kg
TOXAPHENE	180 U	µg/kg	170 U	µg/kg	180 U	µg/kg	190 U	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)	10.7	mg/kg	9.34	mg/kg	9.5 U	mg/kg	9.2 U	mg/kg
METALS								
ALUMINUM	14700	mg/kg	1430	mg/kg	29200	mg/kg	32400	mg/kg
ANTIMONY	1.1 UJ	mg/kg	1 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg
ARSENIC	2.7	mg/kg	2.1 U	mg/kg	5.1	mg/kg	4.6	mg/kg
BARIUM	23.2	mg/kg	2.1 U	mg/kg	5.1	mg/kg	7.7	mg/kg
BERYLLIUM	0.65 U	mg/kg	0.62 U	mg/kg	0.65 U	mg/kg	0.67 U	mg/kg
CADMIUM	2.2	mg/kg	0.62 U	mg/kg	0.65 U	mg/kg	0.67 U	mg/kg
CALCIUM	296	mg/kg	206 U	mg/kg	216 U	mg/kg	224 U	mg/kg
CHROMIUM	12	mg/kg	3.1	mg/kg	31.4	mg/kg	19.3	mg/kg
COBALT	1.2	mg/kg	1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
COPPER	8	mg/kg	1 U	mg/kg	6.6	mg/kg	7.9	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00601		W33SB00603		W33SB00701		W33SB00801	
LAB ID NUMBER			9803117 - 03		9803130 - 04		9803134 - 04	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/18/98		3/19/98		3/20/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON	6560	mg/kg	378	mg/kg	15100	mg/kg	14700	mg/kg
LEAD	15.9 J	mg/kg	1.2 J	mg/kg	5.1 J	mg/kg	6.1 J	mg/kg
MAGNESIUM	204	mg/kg	12.4 U	mg/kg	65.1	mg/kg	130	mg/kg
MANGANESE	150	mg/kg	1	mg/kg	29.3	mg/kg	34.6	mg/kg
MERCURY	0.03 U	mg/kg	0.03 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg
NICKEL	3.5	mg/kg	1 U	mg/kg	2.4	mg/kg	2.5	mg/kg
POTASSIUM	142 U	mg/kg	18.8 U	mg/kg	78.6 U	mg/kg	90.7 U	mg/kg
SELENIUM	1.1 U	mg/kg	1 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
SILVER	0.65 U	mg/kg	0.62 U	mg/kg	0.65 U	mg/kg	0.67 U	mg/kg
SODIUM	109 U	mg/kg	103 U	mg/kg	108 U	mg/kg	112 U	mg/kg
THALLIUM	2.2 U	mg/kg	2.1 U	mg/kg	2.2 U	mg/kg	2.2 U	mg/kg
VANADIUM	18.3	mg/kg	1.5	mg/kg	42.1	mg/kg	41	mg/kg
ZINC	21.9 J	mg/kg	2.1 UJ	mg/kg	3.4 J	mg/kg	4.9 J	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

Blank space indicates chemical not analyzed.
A or 'he sample number indicates a duplicate.

R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00901		W33SB01001		W33SB01101		W33SB01201	
LAB ID NUMBER	9803117 - 04		9803130 - 07		9803134 - 06		9803130 - 06	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/19/98		3/20/98		3/19/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
VOLATILES								
1,1,1-TRICHLOROETHANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,1,2,2-TETRACHLOROETHANE	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,1,2-TRICHLOROETHANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,1-DICHLOROETHANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,1-DICHLOROETHENE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,2-DICHLOROETHANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,2-DICHLOROETHENE (TOTAL)	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
1,2-DICHLOROPROPANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
2-BUTANONE	6 UR	μg/kg	6 UR	μg/kg	6 UR	μg/kg	6 UR	μg/kg
2-HEXANONE	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
4-METHYL-2-PENTANONE	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
ACETONE	6 UJ	μg/kg	6 UJ	μg/kg	3 J	μg/kg	6 UJ	μg/kg
BENZENE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
BROMODICHLOROMETHANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
BROMOFORM	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
BROMOMETHANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CARBON DISULFIDE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CARBON TETRACHLORIDE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CHLOROBENZENE	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CHLOROETHANE	6 UJ	μg/kg	6 UJ	μg/kg	6 UJ	μg/kg	6 UJ	μg/kg
CHLOROFORM	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CHLOROMETHANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
CIS-1,3-DICHLOROPROPENE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
DIBROMOCHLOROMETHANE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
ETHYLBENZENE	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
METHYL TERT-BUTYL ETHER	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
METHYLENE CHLORIDE	27 U	μg/kg	28 U	μg/kg	22 U	μg/kg	31 U	μg/kg
STYRENE	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
TETRACHLOROETHENE	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
TOLUENE	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
TRANS-1,3-DICHLOROPROPENE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
TRICHLOROETHENE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
VINYL CHLORIDE	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
XYLENES, TOTAL	6 UJ	μg/kg	6 U	μg/kg	6 U	μg/kg	6 U	μg/kg
SEMIVOLATILES								

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CTO 0028

Rev. 1
5/4/99

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00901		W33SB01001		W33SB01101		W33SB01201	
LAB ID NUMBER	9803117 - 04		9803130 - 07		9803134 - 05		9803130 - 06	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/19/98		3/20/98		3/19/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
1,2,4-TRICHLOROBENZENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,2-DICHLOROBENZENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,3-DICHLOROBENZENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
1,4-DICHLOROBENZENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4,5-TRICHLOROPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4,6-TRICHLOROPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DICHLOROPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DIMETHYLPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DINITROPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,4-DINITROTOLUENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2,6-DINITROTOLUENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-CHLORONAPHTHALENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-CHLOROPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-METHYLNAPHTHALENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-METHYLPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-NITROANILINE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
2-NITROPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
3,3'-DICHLOROBENZIDINE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
3-NITROANILINE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4,6-DINITRO-2-METHYLPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-BROMOPHENYL PHENYL ETHER	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-CHLORO-3-METHYLPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-CHLOROANILINE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-CHLOROPHENYL PHENYL ETHER	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-METHYLPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-NITROANILINE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
4-NITROPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ACENAPHTHENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ACENAPHTHYLENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ANTHRACENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(A)ANTHRACENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(A)PYRENE	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	110 U	µg/kg
BENZO(B)FLUORANTHENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(G,H,I)PERYLENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BENZO(K)FLUORANTHENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg

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A or 'he sample number indicates a duplicate.

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00901		W33SB01001		W33SB01101		W33SB01201	
LAB ID NUMBER	9803117 - 04		9803130 - 07		9803134 - 05		9803130 - 08	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/19/98		3/20/98		3/19/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
BIS(2-CHLOROETHOXY)METHANE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-CHLOROETHYL)ETHER	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
BUTYLBENZYL PHTHALATE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CARBAZOLE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
CHRYSENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DI-N-BUTYL PHTHALATE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	49 J	µg/kg
DI-N-OCTYL PHTHALATE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIBENZO(A,H)ANTHRACENE	110 U	µg/kg	120 U	µg/kg	110 U	µg/kg	110 U	µg/kg
DIBENZOFURAN	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIETHYL PHTHALATE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
DIMETHYL PHTHALATE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORANTHENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
FLUORENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROBENZENE	370 UJ	µg/kg	390 UJ	µg/kg	370 UJ	µg/kg	370 UJ	µg/kg
HEXACHLOROBUTADIENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROCYCLOPENTADIENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
HEXACHLOROETHANE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
INDENO(1,2,3-CD)PYRENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
ISOPHORONE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
N-NITROSO-DI-N-PROPYLAMINE	22 U	µg/kg	24 U	µg/kg	22 U	µg/kg	22 U	µg/kg
N-NITROSODIPHENYLAMINE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NAPHTHALENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
NITROBENZENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PENTACHLOROPHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PHENANTHRENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PHENOL	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PYRENE	370 U	µg/kg	390 U	µg/kg	370 U	µg/kg	370 U	µg/kg
PESTICIDES/PCBS								
4,4'-DDD	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
4,4'-DDE	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
4,4'-DDT	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
ALDRIN	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-BHC	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
ALPHA-CHLORDANE	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
AROCLOR-1016	38 U	µg/kg	39 U	µg/kg	37 U	µg/kg	37 U	µg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00901		W33SB01001		W33SB01101		W33SB01201	
LAB ID NUMBER	9803117 - 04		9803130 - 07		9803134 - 05		9803130 - 06	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/19/98		3/20/98		3/19/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
AROCLOR-1221	75 U	µg/kg	79 U	µg/kg	74 U	µg/kg	73 U	µg/kg
AROCLOR-1232	38 U	µg/kg	39 U	µg/kg	37 U	µg/kg	37 U	µg/kg
AROCLOR-1242	38 U	µg/kg	39 U	µg/kg	37 U	µg/kg	37 U	µg/kg
AROCLOR-1248	38 U	µg/kg	39 U	µg/kg	37 U	µg/kg	37 U	µg/kg
AROCLOR-1254	38 U	µg/kg	39 U	µg/kg	37 U	µg/kg	37 U	µg/kg
AROCLOR-1260	38 U	µg/kg	39 U	µg/kg	37 U	µg/kg	37 U	µg/kg
BETA-BHC	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DELTA-BHC	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
DIELDRIN	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
ENDOSULFAN I	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.9 U	µg/kg
ENDOSULFAN II	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
ENDOSULFAN SULFATE	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
ENDRIN	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
ENDRIN ALDEHYDE	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
ENDRIN KETONE	3.8 U	µg/kg	3.9 U	µg/kg	3.7 U	µg/kg	3.7 U	µg/kg
GAMMA-BHC (LINDANE)	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
GAMMA-CHLORDANE	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
HEPTACHLOR EPOXIDE	1.9 U	µg/kg	2 U	µg/kg	1.9 U	µg/kg	1.8 U	µg/kg
METHOXYCHLOR	19 U	µg/kg	20 U	µg/kg	19 U	µg/kg	18 U	µg/kg
TOXAPHENE	190 U	µg/kg	200 U	µg/kg	190 U	µg/kg	180 U	µg/kg
PETROLEUM HYDROCARBONS								
TOTAL PETROLEUM HYDROCARBONS		mg/kg		mg/kg		mg/kg		mg/kg
TPH (C8-C40)	9.3 U	mg/kg	10 U	mg/kg	9.6 U	mg/kg	9.7 U	mg/kg
METALS								
ALUMINUM	39600	mg/kg	27300	mg/kg	38500	mg/kg	6220	mg/kg
ANTIMONY	1.1 UJ	mg/kg	1.2 UJ	mg/kg	1.1 UJ	mg/kg	1.1 UJ	mg/kg
ARSENIC	6.8	mg/kg	4.8	mg/kg	5.6	mg/kg	2.2 U	mg/kg
BARIUM	8.5	mg/kg	10.1	mg/kg	7.5	mg/kg	5	mg/kg
BERYLLIUM	0.68 U	mg/kg	0.71 U	mg/kg	0.67 U	mg/kg	0.66 U	mg/kg
CADMIUM	0.68 U	mg/kg	0.71 U	mg/kg	0.67 U	mg/kg	0.66 U	mg/kg
CALCIUM	225 U	mg/kg	236 U	mg/kg	223 U	mg/kg	227	mg/kg
CHROMIUM	35.1	mg/kg	24.8	mg/kg	28.4	mg/kg	70	mg/kg
COBALT	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
COPPER	9.9	mg/kg	7	mg/kg	8.5	mg/kg	2.8	mg/kg
CYANIDE		mg/kg		mg/kg		mg/kg		mg/kg

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R4708989

APPENDIX C
SURFACE AND SUBSURFACE SOIL ANALYTICAL DATA
SITES 3, 4, 6, 30, 32, AND 33
NAS WHITING FIELD, MILTON, FLORIDA

SAMPLE NUMBER	W33SB00901		W33SB01001		W33SB01101		W33SB01201	
LAB ID NUMBER	9803117 - 04		9803130 - 07		9803134 - 05		9803130 - 08	
SITE	33		33		33		33	
DATE SAMPLED	3/18/98		3/19/98		3/20/98		3/19/98	
RESULTS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS
IRON	20300	mg/kg	14000	mg/kg	18300	mg/kg	4160	mg/kg
LEAD	7.3 J	mg/kg	5.1 J	mg/kg	7.1 J	mg/kg	4 J	mg/kg
MAGNESIUM	128	mg/kg	127	mg/kg	96.7	mg/kg	56	mg/kg
MANGANESE	29.1	mg/kg	9	mg/kg	40.5	mg/kg	9.2	mg/kg
MERCURY	0.04 U	mg/kg	0.04 U	mg/kg	0.03 U	mg/kg	0.04 U	mg/kg
NICKEL	3.1	mg/kg	2.2	mg/kg	2.5	mg/kg	14	mg/kg
POTASSIUM	121 U	mg/kg	149 U	mg/kg	104 U	mg/kg	101 U	mg/kg
SELENIUM	1.1 U	mg/kg	1.2 U	mg/kg	1.1 U	mg/kg	1.1 U	mg/kg
SILVER	0.68 U	mg/kg	0.71 U	mg/kg	0.67 U	mg/kg	0.66 U	mg/kg
SODIUM	113 U	mg/kg	118 U	mg/kg	112 U	mg/kg	110 U	mg/kg
THALLIUM	2.3 U	mg/kg	2.4 U	mg/kg	2.2 U	mg/kg	2.2 U	mg/kg
VANADIUM	59.2	mg/kg	47.7	mg/kg	50.9	mg/kg	14.4	mg/kg
ZINC	5.3 J	mg/kg	3.8 J	mg/kg	4.3 J	mg/kg	2.2 UJ	mg/kg
TOTAL ORGANIC CARBON								
TOTAL ORGANIC CARBON		mg/kg		mg/kg		mg/kg		mg/kg

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A or D in the sample number indicates a duplicate.