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NAS CECIL FIELD
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SAMPLING AND ANALYSIS REPORT FOR FACILITY 314 ZONE D INDUSTRIAL AND FLIGHT LINE AREA NAS CECIL FIELD FL

2/1/1999

HARDING LAWSON ASSOCIATES

SAMPLING AND ANALYSIS REPORT

FACILITY 314

BASE REALIGNMENT AND CLOSURE

ZONE D, INDUSTRIAL AND FLIGHT LINE AREA

NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Unit Identification Code N60200

Contract No. N62467-89-D-0317/090

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February 1999

Revision 0.0

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Zone D, Industrial and Flight Line Area
Naval Air Station Cecil Field
Jacksonville, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc
bls	below land surface
EBS	environmental baseline survey
ELCR	excess lifetime cancer risk
FDEP	Florida Department of Environmental Protection
HQ	hazard quotient
NAS	Naval Air Station
PAH	polynuclear aromatic hydrocarbon
POL	petroleum, oils, and lubricants
PRE	Preliminary Risk Evaluation
RBC	risk-based concentration
SCTL	soil cleanup target level
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency

1.0 INTRODUCTION

Harding Lawson Associates has completed the Phase II Sampling and Analysis program for Facility 314 at Naval Air Station (NAS) Cecil Field. This report summarizes the field operations, results, conclusions, and recommendations.

Facility 314 is a storage shed, located at the east edge of the concrete apron along the east-west flight line (Figure 1). The facility is referred to as a flight line ordnance building in the Base Realignment and Closure NAS Cecil Field Environmental Baseline Survey (EBS) Report (ABB Environmental Services, Inc. [ABB-ES], 1994a). The facility is used for storage of equipment for nearby flight line buildings. A temporary petroleum, oils, and lubricants (POL) accumulation point is located outside the shed on the south side (Figure 1).

Building 314 was color coded Gray in the EBS because of the poorly maintained POL accumulation point south of the building. During a site walkover in January 1995, stressed vegetation and oil stains around POL waste drums were confirmed as potential environmental concerns.

A more detailed description of environmental concerns is presented in the EBS Report (ABB-ES, 1994a), and the Sampling and Analysis Outline for the assessment of surface soil at Facility 314 (ABB-ES, 1995a).

2.0 PHASE II INVESTIGATION

The Phase II investigation included the collection and analysis of two surface soil samples to evaluate the potential for surface soil contamination in the area of stressed vegetation adjacent to the POL accumulation point. The samples were collected from 0 to 1 foot below land surface (bls) and were analyzed for target compound list organics and target analyte list inorganics. Ten additional surface soil samples and two subsurface soil samples were collected during a subsequent field effort to delineate the extent of polynuclear aromatic hydrocarbon (PAH) and total recoverable petroleum hydrocarbon (TRPH) contaminantion detected in the initial samples.

Field activities were undertaken in general conformance with the Project Operations Plan (ABB-ES, 1994b). A site plan indicating the locations of soil samples is presented on Figure 2.

3.0 PRELIMINARY RISK EVALUATION

A preliminary risk evaluation (PRE) was conducted to assess potential risks to human and ecological receptors posed by contaminants in surface soil and groundwater. Primary exposure pathways were evaluated to determine which potentially contribute to human health and ecological risks. The evaluation was conducted in general conformance with methodology provided in the U.S. Environmental Protection (USEPA) Region IV Memorandum "Amended Guidance on Preliminary Risk Evaluations (PREs) for the Purpose of Reaching a Finding of

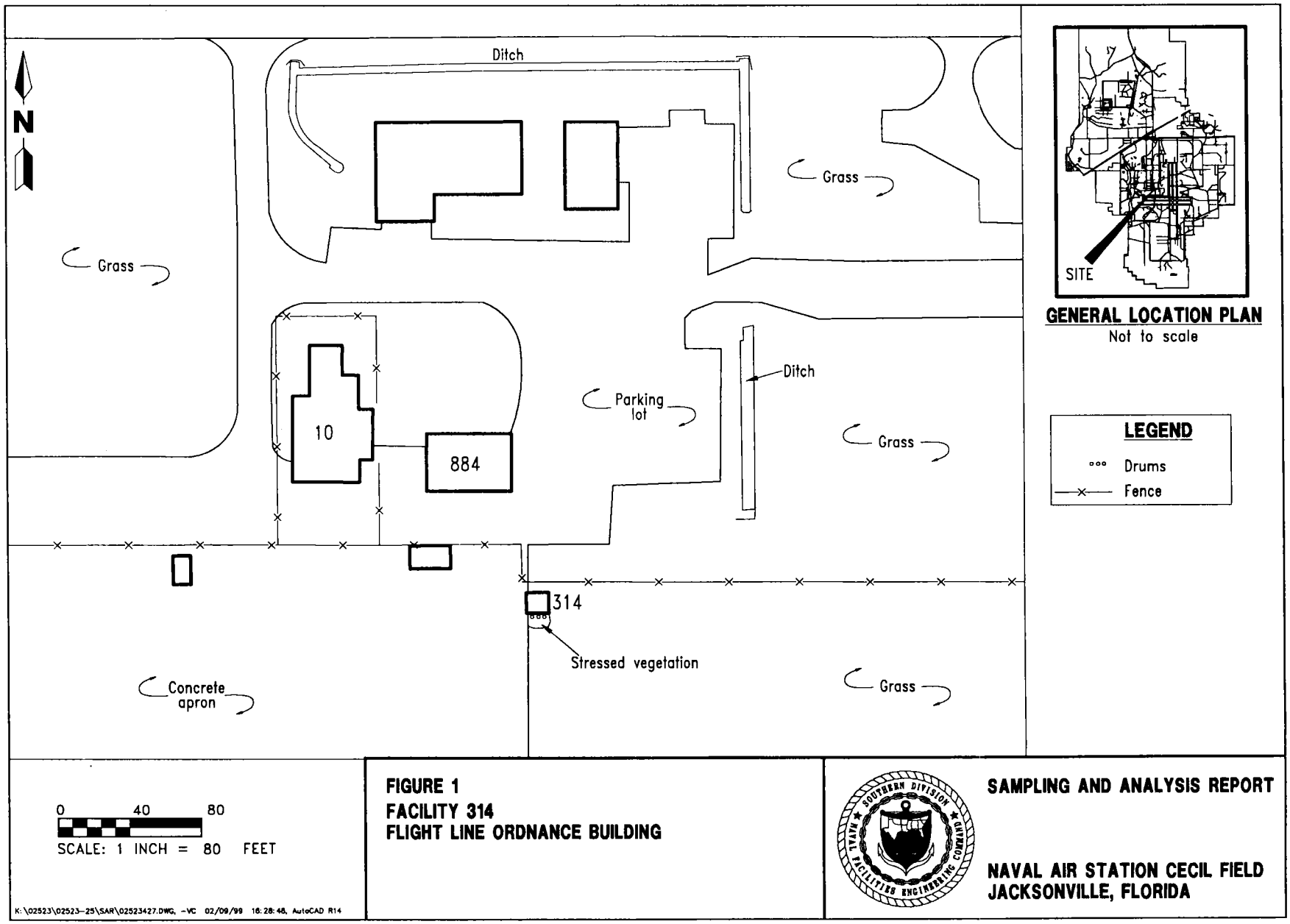
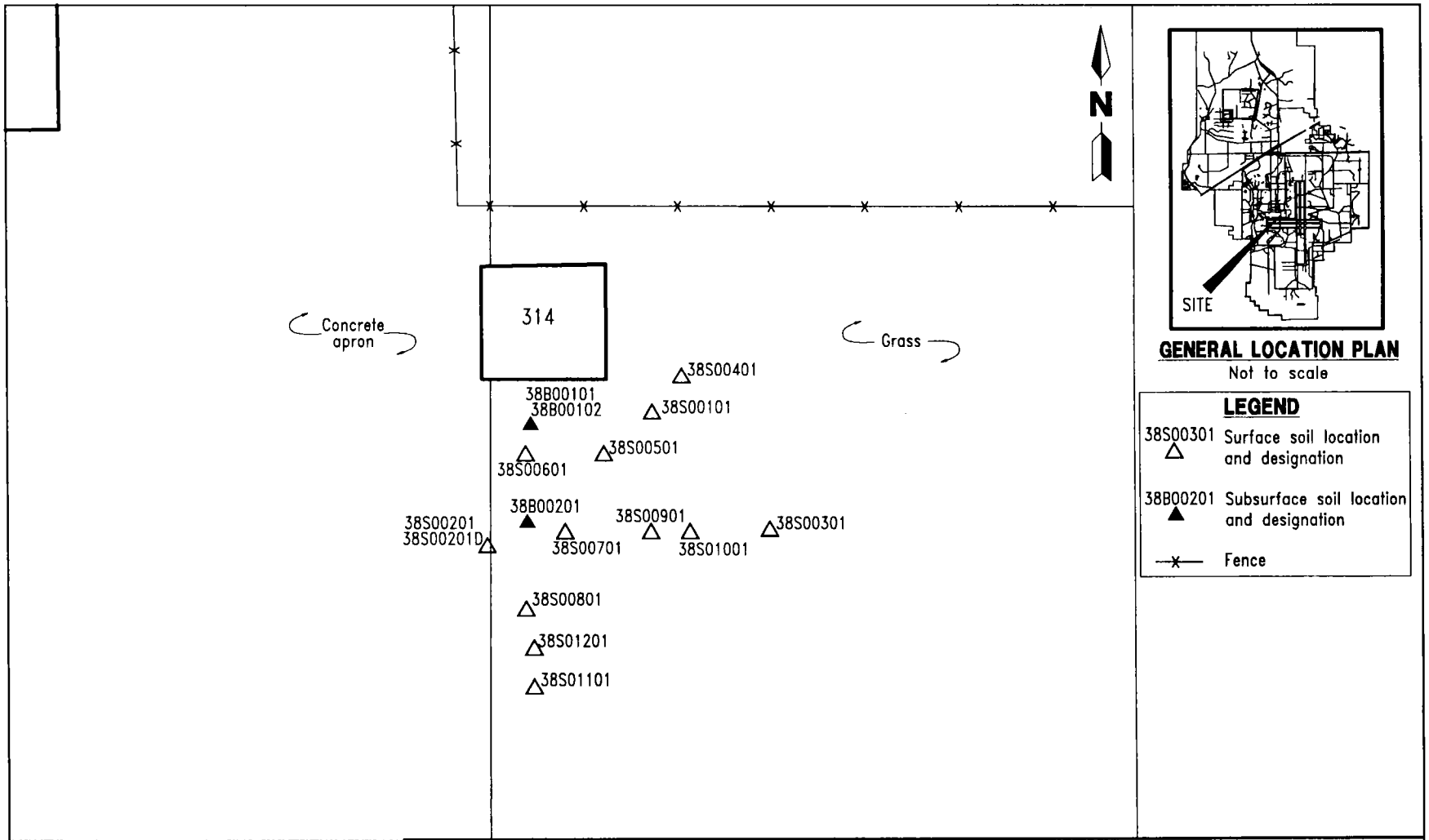


FIGURE 1
FACILITY 314
FLIGHT LINE ORDNANCE BUILDING



0 10 20
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FIGURE 2
FACILITY 314
SAMPLE LOCATION PLAN

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NAVAL AIR STATION CECIL FIELD
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Suitability to Lease (FOSL)" (USEPA, 1994), USEPA Region IV bulletins on ecological risk assessment (USEPA, 1995), and minutes of meetings with the USEPA and the Florida Department of Environmental Protection (FDEP) concerning PREs (ABB-ES, 1995b).

3.1 PUBLIC HEALTH PRE. All detected analytes were compared to readily available risk-based screening values to assess the likelihood of adverse human health effects associated with potential exposure to surface soil. Risk-based screening values were obtained from USEPA Region III Risk-Based Concentrations (RBCs), (USEPA, 1996), and FDEP soil cleanup target levels (SCTLs) (FDEP, 1998). Most screening values published in the references listed above are based on toxicity constants and standard human exposure scenarios, and correspond to fixed levels of risk. The designated level of risk for noncarcinogenic chemicals is based on a hazard quotient (HQ) of 1. The level of risk for carcinogenic chemicals is based on an excess lifetime cancer risk (ELCR) of 1×10^{-6}. Cancer and noncancer risks associated with industrial and residential land use are estimated by dividing the maximum detected analyte concentration by the corresponding USEPA Region III RBC value at the designated level of risk (ELCR of 1×10^{-6} or HQ of 1).

Inorganic analytes were compared to NAS Cecil Field screening criteria for inorganics established by the NAS Cecil Field partnering team. The NAS Cecil Field screening criteria were determined by using the nonparametric upper-outside value cutoffs as described in *Understanding Robust and Exploratory Data Analysis* (Hoaglin et al., 1983). These screening values were developed from data collected throughout NAS Cecil Field. No risk evaluation is conducted for inorganic analytes detected below NAS Cecil Field screening criteria for inorganics.

Twenty inorganic analytes, 23 semivolatile organic compounds, and 5 pesticide compounds were detected in surface soil samples collected and analyzed for Facility 314. The detected concentration of arsenic at sample location 38S00201 exceeds the SCTL, but is less than the NAS Cecil Field inorganic background screening value. No other inorganic analytes were detected at concentrations in excess of SCTLs.

Four PAH compounds were detected at concentrations in excess of SCTLs (Figure 3). TRPH was detected in surface and subsurface soil samples at concentrations in excess of the SCTL (Figure 3). An ELCR of 3.6×10^{-5} was calculated based upon residential RBCs for surface soil. No other compounds were detected above soil screening criteria. A comparison between concentrations of detected analytes in surface soil and RBCs for surface soil and SCTLs is presented in Appendix A.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Contaminants have been detected at concentrations in excess of SCTLs for residential land use in surface and subsurface soil samples collected in the vicinity of Facility 314. Additional samples were collected to determine the extent of contamination, but did not adequately delineate the contamination. TRPH contamination appears to be less widespread than the PAH contamination. However, elevated concentrations of TRPH extend beyond 1 foot bls in at least one location.

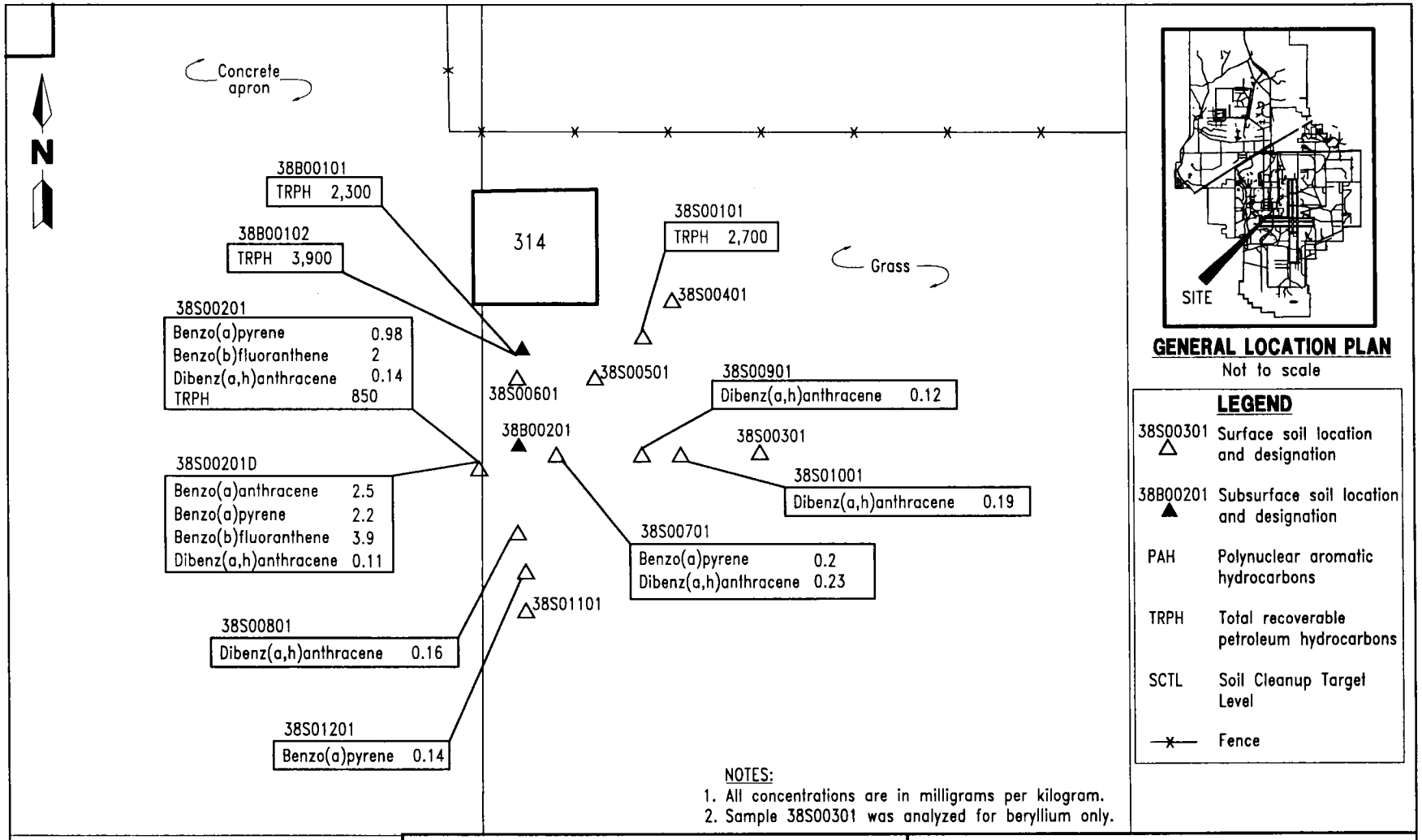

FIGURE 3
FACILITY 314
LOCATIONS CONTAINING TRPH OR PAH COMPOUNDS IN EXCESS OF FLORIDA SCTLs

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JACKSONVILLE, FLORIDA

TRPH contamination in the area appears to be related to releases at the POL accumulation point on the south side of Facility 314. However, based on the spatial distribution of contaminants, it appears that Facility 314 may not be the source for these PAHs in the area. Storm water runoff from the concrete aircraft parking apron may contain contaminants as a result of incidental release from aircraft, aircraft exhaust, and general flight line maintenance activities. Further evaluation is required to determine the source and extent of contaminants in this area, and to assess requirements for remedial activities, if appropriate.

The color classification for Facility 314 should be changed to 5/Yellow until all additional requirements for evaluation and remediation of the site have been completed. In addition, Facility 314 is within the area of investigation for Installation Restoration Program Sites 36 and 37. Final reclassification of Facility 314 may also depend on the status of that investigation.

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USEPA. 1996. *Region III Risk-Based Screening Table, Technical Guidance Manual*. Risk Assessment, EPA/903/R-93-001 (May).

APPENDIX A

PRELIMINARY RISK EVALUATION TABLES

Preliminary Human Health Risk Evaluation Table for Analytes Detected in Soil
Facility 314, Naval Air Station Cecil Field

Sample[1]	Analyte[1]	Concentration	Screening Values SCTL	Screening Values RBC(R)	Calculated Risk Value[2] ELCR
38B00101	TPH C8-C40	2300	350		
38B00102	TPH C8-C40	3900	350		
38S00101	Total petroleum hydrocarbons	2700	350		
38S00201	Benzo (a) pyrene	0.98	0.1		
38S00201	Benzo (b) fluoranthene	2	1.4		
38S00201	Dibenzo (a,h) anthracene	0.14	0.1		
38S00201	Total petroleum hydrocarbons	850	350		
38S00201D	Benzo (a) anthracene	2.5	1.4		3.E-06
38S00201D	Benzo (a) pyrene	2.2	0.1		3.E-05
38S00201D	Benzo (b) fluoranthene	3.9	1.4		4.E-06
38S00201D	Dibenzo (a,h) anthracene	0.11	0.1		
38S00701	Benzo (a) pyrene	0.2	0.1		
38S00701	Dibenzo (a,h) anthracene	0.23	0.1		3.E-06
38S00801	Dibenzo (a,h) anthracene	0.16	0.1		
38S00901	Dibenzo (a,h) anthracene	0.12	0.1		
38S01001	Dibenzo (a,h) anthracene	0.19	0.1		
38S01201	Benzo (a) pyrene	0.14	0.1		
				Sum=	3.E-05

Notes:

[1] All analytes detected at concentrations in excess of SCTLs are reported. Concentrations and screening values are expressed in mg/kg

[2] ELCR is calculated using the maximum detected site concentration for each analyte

SCTL = Soil Cleanup Target Level, Chapter 62-785, Florida Administrative Code

RBC(R) = Risk-based Concentration (Residential), USEPA Region III, April 1998

ELCR = calculated excess lifetime cancer risk, based on RBC(R) values. (ELCR = detected concentration/RBC(R) * 1 E-06)

Preliminary Human Health Risk Evaluation Table for Analytes Detected in Soil
Facility 314, Naval Air Station Cecil Field

Sample[1]	Analyte[1]	Concentration	Screening Values SCTL	Screening Values RBC(R)	Calculated Risk Value[2] ELCR
38B00101	TPH C8-C40	2300	350		
38B00102	TPH C8-C40	3900	350		
38S00101	Total petroleum hydrocarbons	2700	350		
38S00201	Benzo (a) pyrene	0.98	0.1		
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38S00201D	Benzo (a) pyrene	2.2	0.1		3.E-05
38S00201D	Benzo (b) fluoranthene	3.9	1.4		4.E-06
38S00201D	Dibenzo (a,h) anthracene	0.11	0.1		
38S00701	Benzo (a) pyrene	0.2	0.1		
38S00701	Dibenzo (a,h) anthracene	0.23	0.1		3.E-06
38S00801	Dibenzo (a,h) anthracene	0.16	0.1		
38S00901	Dibenzo (a,h) anthracene	0.12	0.1		
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38S01201	Benzo (a) pyrene	0.14	0.1		
				Sum=	3.E-05

Notes:

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SCTL = Soil Cleanup Target Level, Chapter 62-785, Florida Administrative Code

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ELCR = calculated excess lifetime cancer risk, based on RBC(R) values. (ELCR = detected concentration/RBC(R) * 1 E-06)

APPENDIX B

LABORATORY ANALYTICAL DATA

NAS CECIL FIELD -- FACILITY 314
SURFACE SOIL -- VOLATILES -- REQUEST NO. 10674

Lab Sample Number:	C2TRH				C2TRK				C2TRP			
Site	CECILBRAC2				CECILBRAC2				CECILBRAC2			
Locator	38S00101				38S00201				38S00201D			
Collect Date:	01-FEB-96				01-FEB-96				01-FEB-96			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
CLP VOLATILES 90-SOW												
Chloromethane	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Bromomethane	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Vinyl chloride	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Chloroethane	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Methylene chloride	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Acetone	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Carbon disulfide	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
1,1-Dichloroethene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
1,1-Dichloroethane	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
1,2-Dichloroethene (total)	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Chloroform	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
1,2-Dichloroethane	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
2-Butanone	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
1,1,1-Trichloroethane	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Carbon tetrachloride	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Bromodichloromethane	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
1,2-Dichloropropane	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
cis-1,3-Dichloropropene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Trichloroethene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Dibromochloromethane	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
1,1,2-Trichloroethane	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Benzene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
trans-1,3-Dichloropropene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Bromoform	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
4-Methyl-2-pentanone	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
2-Hexanone	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Tetrachloroethene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Toluene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
1,1,2,2-Tetrachloroethane	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Chlorobenzene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Ethylbenzene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Styrene	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6
Xylenes (total)	5	U	ug/kg	5	5	U	ug/kg	5	6	U	ug/kg	6

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- FACILITY 314
SURFACE SOIL -- SEMIVOLATILES -- REQUEST NO. 10675

Lab Sample Number:	C2TRH				C2TRK				C2TRP			
Site	CECILBRAC2				CECILBRAC2				CECILBRAC2			
Locator	38S00101				38S00201				38S00201D			
Collect Date:	01-FEB-96				01-FEB-96				01-FEB-96			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
CLP SEMIVOLATILES 90-SOW												
Phenol	350	U	ug/kg	350	27	J	ug/kg	360	27	J	ug/kg	360
bis(2-Chloroethyl) ether	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2-Chlorophenol	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
1,3-Dichlorobenzene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
1,4-Dichlorobenzene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
1,2-Dichlorobenzene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2-Methylphenol	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2,2-oxybis(1-Chloropropane)	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
4-Methylphenol	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
N-Nitroso-di-n-propylamine	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Hexachloroethane	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Nitrobenzene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Isophorone	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2-Nitrophenol	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2,4-Dimethylphenol	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
bis(2-Chloroethoxy) methane	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2,4-Dichlorophenol	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
1,2,4-Trichlorobenzene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Naphthalene	350	U	ug/kg	350	360	U	ug/kg	360	19	J	ug/kg	360
4-Chloroaniline	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Hexachlorobutadiene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
4-Chloro-3-methylphenol	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2-Methylnaphthalene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Hexachlorocyclopentadiene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2,4,6-Trichlorophenol	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2,4,5-Trichlorophenol	860	U	ug/kg	860	880	U	ug/kg	880	880	U	ug/kg	880
2-Chloronaphthalene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
2-Nitroaniline	860	U	ug/kg	860	880	U	ug/kg	880	880	U	ug/kg	880
Dimethylphthalate	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Acenaphthylene	350	U	ug/kg	350	59	J	ug/kg	360	60	J	ug/kg	360
2,6-Dinitrotoluene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
3-Nitroaniline	860	U	ug/kg	860	880	U	ug/kg	880	880	U	ug/kg	880
Acenaphthene	350	U	ug/kg	350	360	U	ug/kg	360	120	J	ug/kg	360
2,4-Dinitrophenol	860	U	ug/kg	860	880	U	ug/kg	880	880	U	ug/kg	880
4-Nitrophenol	860	U	ug/kg	860	880	U	ug/kg	880	880	U	ug/kg	880
Dibenzofuran	350	U	ug/kg	350	360	U	ug/kg	360	58	J	ug/kg	360
2,4-Dinitrotoluene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Diethylphthalate	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
4-Chlorophenyl-phenylether	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Fluorene	350	U	ug/kg	350	360	U	ug/kg	360	99	J	ug/kg	360
4-Nitroaniline	860	U	ug/kg	860	880	U	ug/kg	880	880	U	ug/kg	880
4,6-Dinitro-2-methylphenol	860	U	ug/kg	860	880	U	ug/kg	880	880	U	ug/kg	880
N-Nitrosodiphenylamine	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
4-Bromophenyl-phenylether	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Hexachlorobenzene	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Pentachlorophenol	860	U	ug/kg	860	880	U	ug/kg	880	880	U	ug/kg	880
Phenanthrene	350	U	ug/kg	350	170	J	ug/kg	360	1300		ug/kg	360
Anthracene	350	U	ug/kg	350	56	J	ug/kg	360	350	J	ug/kg	360
Carbazole	350	U	ug/kg	350	58	J	ug/kg	360	320	J	ug/kg	360
Di-n-butylphthalate	80	J	ug/kg	350	2500		ug/kg	360	5200		ug/kg	360

NAS CECIL FIELD -- FACILITY 314
SURFACE SOIL -- SEMIVOLATILES -- REQUEST NO. 10675

Lab Sample Number:	C2TRH				C2TRK				C2TRP			
Site	CECILBRAC2				CECILBRAC2				CECILBRAC2			
Locator	38S00101				38S00201				38S00201D			
Collect Date:	01-FEB-96				01-FEB-96				01-FEB-96			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Fluoranthene	65	J	ug/kg	350	1600		ug/kg	360	4600		ug/kg	360
Pyrene	52	J	ug/kg	350	1400		ug/kg	360	4400		ug/kg	360
Butylbenzylphthalate	81	J	ug/kg	350	740		ug/kg	360	870		ug/kg	360
3,3-Dichlorobenzidine	350	U	ug/kg	350	360	U	ug/kg	360	360	U	ug/kg	360
Benzo (a) anthracene	34	J	ug/kg	350	980		ug/kg	360	2500		ug/kg	360
Chrysene	76	J	ug/kg	350	1600		ug/kg	360	3200		ug/kg	360
bis(2-Ethylhexyl) phthalate	54	J	ug/kg	350	1700		ug/kg	360	1600		ug/kg	360
Di-n-octylphthalate	350	U	ug/kg	350	49	J	ug/kg	360	360	U	ug/kg	360
Benzo (b) fluoranthene	86	J	ug/kg	350	2000		ug/kg	360	3900		ug/kg	360
Benzo (k) fluoranthene	39	J	ug/kg	350	760		ug/kg	360	1500		ug/kg	360
Benzo (a) pyrene	60	J	ug/kg	350	980		ug/kg	360	2200		ug/kg	360
Indeno (1,2,3-cd) pyrene	50	J	ug/kg	350	680		ug/kg	360	250	J	ug/kg	360
Dibenzo (a,h) anthracene	350	U	ug/kg	350	140	J	ug/kg	360	110	J	ug/kg	360
Benzo (g,h,i) perylene	84	J	ug/kg	350	750		ug/kg	360	1400		ug/kg	360

U = NOT DETECTED J = ESTIMATED VALUE
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R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- FACILITY 314
SURFACE AND SUBSURFACE SOIL -- PAHs -- REQUEST NO. 10671

Lab Sample Number:	JR33305				JR33303				JR33306				JR33304			
Site	BRAC				BRAC				BRAC				BRAC			
Locator	38B00201				38S00601				38S00701				38S00801			
Collect Date:	22-SEP-98				22-SEP-98				22-SEP-98				22-SEP-98			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
PAHs																
Acenaphthene	17	U	ug/kg	17	17	U	ug/kg	17	170	U	ug/kg	170	17	U	ug/kg	17
Acenaphthylene	3.3	U	ug/kg	3.3	3.3	U	ug/kg	3.3	33	U	ug/kg	33	3.3	U	ug/kg	3.3
Anthracene	17	U	ug/kg	17	17	U	ug/kg	17	170	U	ug/kg	170	17	U	ug/kg	17
Benzo (a) anthracene	1.7	U	ug/kg	1.7	1.7	U	ug/kg	1.7	170		ug/kg	17	33		ug/kg	1.7
Benzo (b) fluoranthene	3	J	ug/kg	3	3	J	ug/kg	3	270		ug/kg	33	100		ug/kg	3
Benzo (k) fluoranthene	2	U	ug/kg	2	2	U	ug/kg	2	120		ug/kg	17	47		ug/kg	2
Benzo (a) pyrene	2	U	ug/kg	2	2	U	ug/kg	2	200		ug/kg	17	66		ug/kg	2
Chrysene	1.7	U	ug/kg	1.7	1.7	U	ug/kg	1.7	320		ug/kg	17	100		ug/kg	1.7
Dibenzo (a,h) anthracene	3.3	U	ug/kg	3.3	70		ug/kg	3.3	230		ug/kg	33	160		ug/kg	3.3
Fluoranthene	3.3	U	ug/kg	3.3	3.3	U	ug/kg	3.3	620		ug/kg	33	200		ug/kg	3.3
Fluorene	3.3	U	ug/kg	3.3	3.3	U	ug/kg	3.3	39	J	ug/kg	33	11		ug/kg	3.3
Indeno (1,2,3-cd) pyrene	1.7	U	ug/kg	1.7	42		ug/kg	1.7	200		ug/kg	17	130		ug/kg	1.7
Benzo (g,h,i) perylene	3.3	U	ug/kg	3.3	130		ug/kg	3.3	180		ug/kg	33	260		ug/kg	3.3
Naphthalene	17	U	ug/kg	17	17	U	ug/kg	17	170	U	ug/kg	170	17	U	ug/kg	17
Phenanthrene	1.7	U	ug/kg	1.7	1.7	U	ug/kg	1.7	83		ug/kg	17	19		ug/kg	1.7
Pyrene	1.7	U	ug/kg	1.7	1.7	U	ug/kg	1.7	380		ug/kg	17	1.7	U	ug/kg	1.7
1-Methylnaphthalene	17	U	ug/kg	17	17	U	ug/kg	17	170	U	ug/kg	170	17	U	ug/kg	17
2-Methylnaphthalene	17	U	ug/kg	17	17	U	ug/kg	17	170	U	ug/kg	170	17	U	ug/kg	17

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NAS CECIL FIELD -- FACILITY 314
SURFACE AND SUBSURFACE SOIL -- PAHs -- REQUEST NO. 10671

Lab Sample Number:	JR461727				JR461728				JR461730				JR461731			
Site	BRAC				BRAC				BRAC				BRAC			
Locator	38S00901				38S01001				38S01101				38S01201			
Collect Date:	12-DEC-98				12-DEC-98				12-DEC-98				12-DEC-98			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
PAHs																
Acenaphthene	86	U	ug/kg	86	170	U	ug/kg	170	20	U	ug/kg	20	170	U	ug/kg	170
Acenaphthylene	170	U	ug/kg	170	340	U	ug/kg	340	40	U	ug/kg	40	340	U	ug/kg	340
Anthracene	8	U	ug/kg	8	18	J	ug/kg	18	2	U	ug/kg	2	18	U	ug/kg	18
Benzo (a) anthracene	8.6	U	ug/kg	8.6	48		ug/kg	17	11		ug/kg	2	86		ug/kg	17
Benzo (b) fluoranthene	20	J	ug/kg	18	100		ug/kg	34	26		ug/kg	4	250		ug/kg	34
Benzo (k) fluoranthene	10	J	ug/kg	8	62		ug/kg	18	6		ug/kg	2	96		ug/kg	18
Benzo (a) pyrene	21		ug/kg	8	100		ug/kg	18	15		ug/kg	2	140		ug/kg	18
Chrysene	20		ug/kg	8.6	82		ug/kg	17	25		ug/kg	2	310		ug/kg	17
Dibenzo (a,h) anthracene	120		ug/kg	17	190		ug/kg	34	4	U	ug/kg	4	34	U	ug/kg	34
Fluoranthene	17	U	ug/kg	17	270		ug/kg	34	4	U	ug/kg	4	34	U	ug/kg	34
Fluorene	17	U	ug/kg	17	34	U	ug/kg	34	4	U	ug/kg	4	34	U	ug/kg	34
Indeno (1,2,3-cd) pyrene	52		ug/kg	8.6	96		ug/kg	17	13		ug/kg	2	160		ug/kg	17
Benzo (g,h,i) perylene	100		ug/kg	17	86	J	ug/kg	34	4	U	ug/kg	4	120		ug/kg	34
Naphthalene	86	U	ug/kg	86	170	U	ug/kg	170	20	U	ug/kg	20	170	U	ug/kg	170
Phenanthrene	21	J	ug/kg	8.6	59		ug/kg	17	6.8		ug/kg	2	17	U	ug/kg	17
Pyrene	8.6	U	ug/kg	8.6	100		ug/kg	17	24		ug/kg	2	220		ug/kg	17
1-Methylnaphthalene	86	U	ug/kg	86	170	U	ug/kg	170	20	U	ug/kg	20	170	U	ug/kg	170
2-Methylnaphthalene	86	U	ug/kg	86	170	U	ug/kg	170	20	U	ug/kg	20	170	U	ug/kg	170

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NAS CECIL FIELD -- FACILITY 314
SURFACE SOIL -- PESTICIDES/PCBs -- REQUEST NO. 10676

Lab Sample Number:	C2TRH				C2TRK				C2TRP			
Site	CECILBRAC2				CECILBRAC2				CECILBRAC2			
Locator	38S00101				38S00201				38S00201D			
Collect Date:	01-FEB-96				01-FEB-96				01-FEB-96			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
CLP PESTICIDES/PCBS 90-SOW												
alpha-BHC	1.8	U	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
beta-BHC	1.8	U	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
delta-BHC	1.8	U	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
gamma-BHC (Lindane)	1.8	U	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
Heptachlor	1.8	U	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
Aldrin	.12	J	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
Heptachlor epoxide	.27	J	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
Endosulfan I	1.8	U	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
Dieldrin	9.6		ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
4,4-DDE	3.6	U	ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
Endrin	3.6	U	ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
Endosulfan II	3.6	U	ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
4,4-DDD	3.6	U	ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
Endosulfan sulfate	3.6	U	ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
4,4-DDT	3.6	U	ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
Methoxychlor	18	U	ug/kg	18	180	U	ug/kg	180	180	U	ug/kg	180
Endrin ketone	3.6	U	ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
Endrin aldehyde	3.6	U	ug/kg	3.6	36	U	ug/kg	36	37	U	ug/kg	37
alpha-Chlordane	.13	J	ug/kg	1.8	18	U	ug/kg	18	37	U	ug/kg	37
gamma-Chlordane	.96	J	ug/kg	1.8	18	U	ug/kg	18	18	U	ug/kg	18
Toxaphene	180	U	ug/kg	180	1800	U	ug/kg	1800	1800	U	ug/kg	1800
Aroclor-1016	36	U	ug/kg	36	360	U	ug/kg	360	370	U	ug/kg	370
Aroclor-1221	71	U	ug/kg	71	730	U	ug/kg	730	740	U	ug/kg	740
Aroclor-1232	36	U	ug/kg	36	360	U	ug/kg	360	370	U	ug/kg	370
Aroclor-1242	36	U	ug/kg	36	360	U	ug/kg	360	370	U	ug/kg	370
Aroclor-1248	36	U	ug/kg	36	360	U	ug/kg	360	370	U	ug/kg	370
Aroclor-1254	36	U	ug/kg	36	360	U	ug/kg	360	370	U	ug/kg	370
Aroclor-1260	36	U	ug/kg	36	360	U	ug/kg	360	370	U	ug/kg	370

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NAS CECIL FIELD -- FACILITY 314
SURFACE SOIL -- INORGANICS -- REQUEST NO. 10677

Lab Sample Number:	C2TRH				C2TRK				C2TRP			
Site	CECILBRAC2				CECILBRAC2				CECILBRAC2			
Locator	38S00101				38S00201				38S00201D			
Collect Date:	01-FEB-96				01-FEB-96				01-FEB-96			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
CLP METALS AND CYANIDE												
Aluminum	1110		mg/kg	40	2980		mg/kg	40	3400		mg/kg	40
Antimony	.86	U	mg/kg	12	.88	U	mg/kg	12	.89	U	mg/kg	12
Arsenic	.64	U	mg/kg	2	1.6	J	mg/kg	2	1.6	J	mg/kg	2
Barium	4.6	J	mg/kg	40	20.2	J	mg/kg	40	27.5	J	mg/kg	40
Beryllium	.21	U	mg/kg	1	.22	U	mg/kg	1	.28	J	mg/kg	1
Cadmium	1.7		mg/kg	1	7		mg/kg	1	16.9		mg/kg	1
Calcium	12600		mg/kg	1000	51600		mg/kg	1000	75800	J	mg/kg	1000
Chromium	10.6		mg/kg	2	24.5		mg/kg	2	15.4		mg/kg	2
Cobalt	.21	U	mg/kg	10	2	J	mg/kg	10	2.7	J	mg/kg	10
Copper	7.4		mg/kg	5	44.8		mg/kg	5	29.7		mg/kg	5
Iron	466	J	mg/kg	20	2140	J	mg/kg	20	2050		mg/kg	20
Lead	114	J	mg/kg	.6	228	J	mg/kg	.6	185		mg/kg	.6
Magnesium	127	J	mg/kg	1000	784	J	mg/kg	1000	1200		mg/kg	1000
Manganese	8.6		mg/kg	3	45.8		mg/kg	3	56.7		mg/kg	3
Mercury	.11	U	mg/kg	.1	.11	U	mg/kg	.1	.11	U	mg/kg	.1
Nickel	1.2	J	mg/kg	8	7.1	J	mg/kg	8	5.4	J	mg/kg	8
Potassium	31.7	J	mg/kg	1000	207	J	mg/kg	1000	195	J	mg/kg	1000
Selenium	.86	U	mg/kg	1	.88	U	mg/kg	1	.89	U	mg/kg	1
Silver	.21	U	mg/kg	2	.22	U	mg/kg	2	1	J	mg/kg	2
Sodium	122	J	mg/kg	1000	195	J	mg/kg	1000	155	J	mg/kg	1000
Thallium	.64	U	mg/kg	2	.66	U	mg/kg	2	.66	U	mg/kg	2
Vanadium	2.4	J	mg/kg	10	7.5	J	mg/kg	10	7.4	J	mg/kg	10
Zinc	49.8		mg/kg	4	195		mg/kg	4	240	J	mg/kg	4
Cyanide	.11	U	mg/kg	.5	.11	U	mg/kg	.5	.52	J	mg/kg	.5

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NAS CECIL FIELD -- FACILITY 314
SURFACE SOIL -- BERYLLIUM -- REQUEST NO. 10672

Lab Sample Number:		C8927		
Site		CECILBRAC3		
Locator		38S00301		
Collect Date:		18-FEB-97		
	VALUE	QUAL UNITS		DL
Beryllium	.21	U mg/kg		1

U = NOT DETECTED J = ESTIMATED VALUE
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NAS CECIL FIELD -- FACILITY 314
SURFACE AND SUBSURFACE SOIL -- TPH (FLA PRO) -- REQUEST NO. 10670

Lab Sample Number:	JR33307			JR461729			JR33305			JR33301		
Site	BRAC			BRAC			BRAC			BRAC		
Locator	38B00101			38B00102			38B00201			38S00401		
Collect Date:	22-SEP-98			12-DEC-98			22-SEP-98			22-SEP-98		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
FLA PRO												
TPH C8-C40	2300	mg/kg	37	3900	mg/kg	72	7.2 U	mg/kg	7.2	38 U	mg/kg	38

U = NOT DETECTED J = ESTIMATED VALUE
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NAS CECIL FIELD -- FACILITY 314
SURFACE AND SUBSURFACE SOIL -- TPH (FLA PRO) -- REQUEST NO. 10670

Lab Sample Number:	JR33302				JR33303				JR33306			
Site	BRAC				BRAC				BRAC			
Locator	38S00501				38S00601				38S00701			
Collect Date:	22-SEP-98				22-SEP-98				22-SEP-98			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
FLA PRO												
TPH C8-C40	35	U	mg/kg	35	37	U	mg/kg	37	140		mg/kg	37

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NAS CECIL FIELD -- FACILITY 314
SURFACE SOIL -- TPH -- REQUEST NO. 10673

Lab Sample Number:	A6B0201090			A6B0201090			A6B0201120			A6B0201120		
Site	CECILBRAC2			CECILBRAC2			CECILBRAC2			CECILBRAC2		
Locator	38S00101			38S00201			38S00201D			38S00201D		
Collect Date:	01-FEB-96			01-FEB-96			01-FEB-96			01-FEB-96		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
Total petroleum hydrocarbons	2700	mg/kg	270	850	mg/kg	55	330	mg/kg	22	59.23	PERCE	

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