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NAS CECIL FIELD, FL  
5090.3a

SAMPLING AND ANALYSIS REPORT FOR FACILITY 853 BASE REALIGNMENT AND  
CLOSURE ZONE D INDUSTRIAL AND FLIGHT LINE AREA REVISION 1 NAS CECIL FIELD  
FL  
9/28/1998  
HARDING LAWSON ASSOCIATES

**SAMPLING AND ANALYSIS REPORT**  
**FACILITY 853**  
**BASE REALIGNMENT AND CLOSURE**  
**ZONE D, INDUSTRIAL AND FLIGHT LINE AREA**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification No.: N60200**

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

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**Revision 1.0**

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BCT	Base Realignment and Closure cleanup team
EBS	environmental baseline survey
ELCR	excess lifetime cancer risk
FDEP	Florida Department of Environmental Protection
HI	hazard index
HLA	Harding Lawson Associates
HQ	hazard quotient
IR	installation restoration
NAS	Naval Air Station
ppm	parts per million
PRE	preliminary risk evaluation
RBC	risk-based concentration
SAO	sampling and analysis outline
SCTL	soil cleanup target level
USEPA	U.S. Environmental Protection Agency

## 1.0 INTRODUCTION

Harding Lawson Associates (HLA), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the Phase II Sampling and Analysis Program for Facility 853 at Naval Air Station (NAS) Cecil Field. This report summarizes the related field operations, results, conclusions, and recommendations of the Phase II investigation.

Facility 853 is referred to as a hazardous/flammable materials storage warehouse in the Environmental Baseline Survey (EBS) Report (ABB Environmental Services, Inc. [ABB-ES], 1994a). Potential environmental concerns identified for the facility in the EBS include stressed vegetation and proximity to an historical waste collection point (Area of Interest 29). Additional concerns relate to the downgradient location of the site, with respect to the Installation Restoration (IR) program Site 16 groundwater contamination plume.

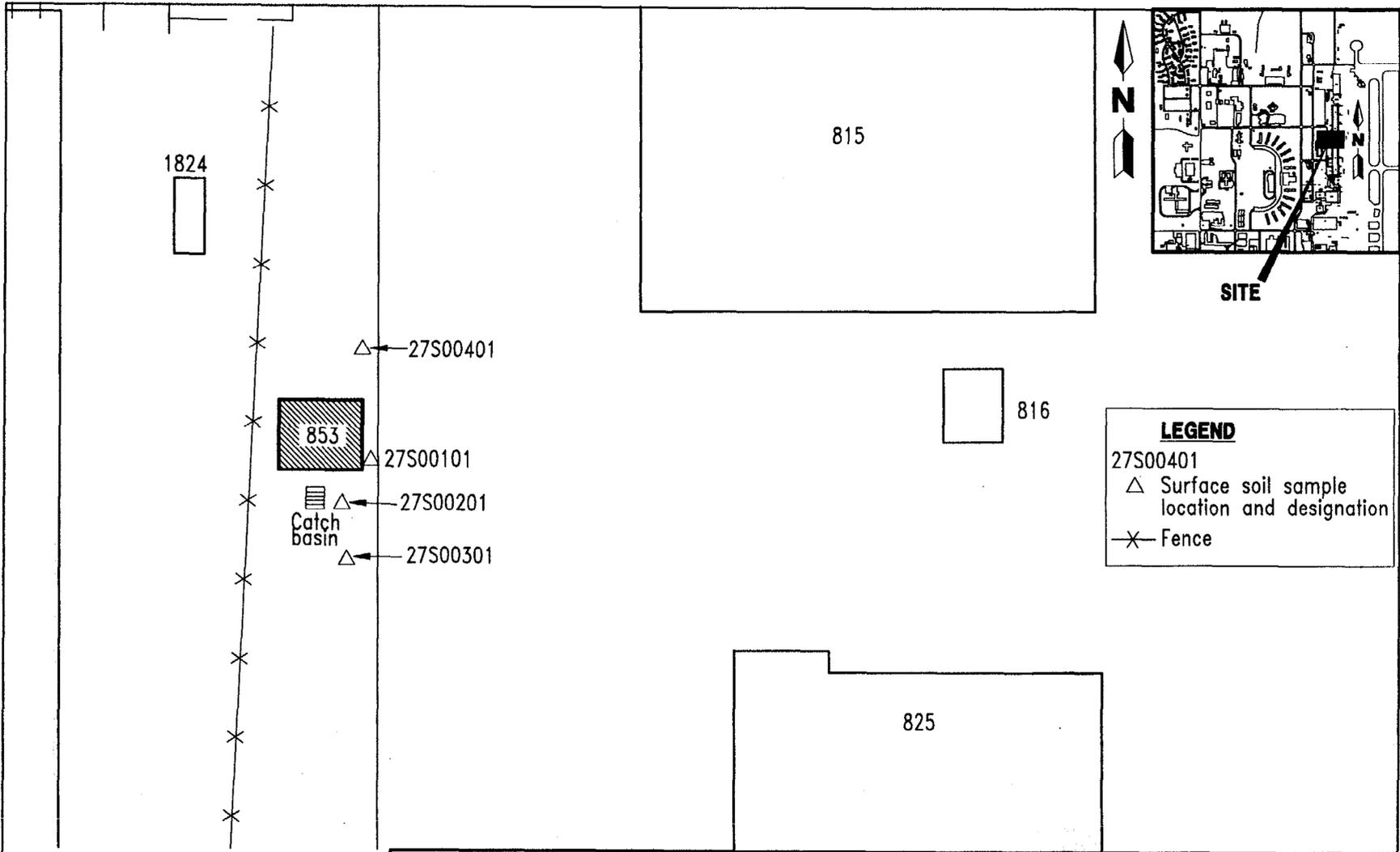
A sampling and analysis outline (SAO) for the assessment of surface soil was prepared by HLA (then ABB-ES) and approved by the Base Realignment and Closure cleanup team (BCT) (ABB-ES, 1995a). The results of the sampling and analysis program developed in the SAO are discussed below.

## 2.0 PHASE II INVESTIGATION

Field activities were undertaken in general conformance with the Project Operations Plan (ABB-ES, 1994b). The Phase II investigation included the collection of two surface soil samples, and analysis for the full Contract Laboratory Program suite of target compound list organics and target analyte list inorganics. Following a review of preliminary analytical data, the BCT issued a directive to collect two additional surface soil samples to be analyzed for benzo(a)pyrene. A general site plan indicating the sample locations is presented on Figure 1.

## 3.0 PRELIMINARY RISK EVALUATION

A preliminary risk evaluation (PRE) was conducted to assess potential risks to human and ecological receptors by contaminants in environmental media. Primary exposure pathways were evaluated to determine those pathways that potentially contribute to human health and ecological risks. The evaluation was conducted in general conformance with methodology provided in the U.S. Environmental Protection Agency (USEPA) Region IV memorandum entitled "Amended Guidance on Preliminary Risk Evaluations (PREs) for the Purpose of Reaching a Finding of Suitability to Lease (FOSL)" (USEPA, 1994a), 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). Site background information and rationale for sample collection and analysis are detailed in the EBS Report (ABB-ES, 1994a) and SAO (ABB-ES, 1995a).



0 25 50  
SCALE: 1 INCH = 50 FEET

**FIGURE 1  
FACILITY 853  
HAZARDOUS MATERIALS STORAGE**



**SAMPLING AND ANALYSIS REPORT**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

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.

**3.1 PUBLIC HEALTH PRELIMINARY RISK EVALUATION.** Inorganic analytes exceeding the background screening concentrations, and all detected organic 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. Background screening values have been defined as two times the arithmetic mean of analytes detected in samples collected from nonsite-related areas near the site. Risk-based screening values were obtained from USEPA Region III Risk-Based Concentrations (RBCs) (USEPA, 1998) and FDEP soil cleanup target levels (SCTLs) (Florida Administrative Code, 1998). Industrial and residential exposure scenarios were considered for Facility 853 because of the potential for future residential development.

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  $1 \times 10^{-6}$ . 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  $1 \times 10^{-6}$  or HQ of 1).

Concentrations of detected analytes are compared to NAS Cecil Field Inorganic Background Data Set, FDEP SCTLs, and residential and industrial risk-based screening concentrations in Appendix A. No compounds were detected at concentrations in excess of FDEP SCTLs for residential areas. An ELCR of  $1 \times 10^{-6}$  and a noncancer hazard index (HI) of less than 1 were calculated based upon a residential exposure scenario.

**3.2 ECOLOGICAL PRELIMINARY RISK EVALUATION.** An ecological PRE was conducted to evaluate potential risks to ecological receptors in the vicinity of Facility 853. Exposure pathways and ecological habitats were characterized during a site walkover conducted by HLA ecological risk assessors in September 1995. The methods and assumptions used in derivation of ecological screening values applied in this evaluation are presented in the Project Operations Plan (ABB-ES, 1994b).

Ecological habitat at Facility 853 is limited to small strips of maintained grass between buildings and paved areas. Ecological receptors that might occasionally use the study area are likely limited to terrestrial species that are tolerant to human and industrial activity. Small passerines, such as the American robin (*Turdus migratorius*), could occasionally forage for terrestrial invertebrates in the grassy portions of the study area. Small mammals, such as the cotton mouse (*Peromyscus gossypinus*), could potentially feed on grasses and seeds in the grassy strips of the study area. Larger predatory mammals, such as the red fox (*Vulpes*

vulpes), could potentially utilize the installation, but are unlikely to forage in the highly developed area surrounding Facility 853. Soil invertebrates, such as the earthworm, are likely present in the maintained grassy areas, which are subject to regular mowing.

Pathways of potential contaminant exposure at Facility 853 for wildlife receptors include direct contact, incidental ingestion of surface soil, and limited terrestrial food-web model exposure to contaminants in surface soil that may bioaccumulate. Protected species were not observed and are unlikely to utilize the limited habitat at Facility 853. Pathways for soil invertebrates include direct contact and incidental ingestion of surface soil. Pathways for terrestrial plants include direct contact with surface soil.

The Preliminary Ecological Risk Evaluation Table in Appendix A compares concentrations of detected analytes to NAS Cecil Field Inorganic Background Data Set and ecological screening values. No inorganic analytes were detected at concentrations in excess of Background Data Set values, and no organic compounds were detected at concentrations in excess of ecological screening criteria. Therefore, analytes detected in surface soil associated with Facility 853 are not expected to adversely impact terrestrial species within plant, invertebrate, or vertebrate groups.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the information obtained for this assessment, the concentrations of compounds detected in surface soil at Facility 853 do not represent a hazard to human health or the environment. No FDEP SCTLs were exceeded. A cumulative noncancer risk or HI of less than 1 and an ELCR of  $1 \times 10^{-6}$  were calculated, based upon RBCs for residential surface soil exposure scenario. However, the groundwater contaminant plume associated with IR Site 16 has been inferred to extend beneath the subject property. Assessment of the Site 16 plume is in progress, but remedial action has not been completed. Therefore, the color classification for Facility 853 should be changed to 5/Yellow. No further assessment is proposed.

Groundwater usage restrictions should be developed to prevent human exposure to contaminants, and to avoid influencing the spatial extent of the contaminant plume. Appropriate site operation and management procedures should be undertaken in order to ensure that other current and future site activities do not result in release of hazardous substances to the environment.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1994a. *Base Realignment and Closure Environmental Baseline Survey Report, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) (November).
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- Hoaglin, D.C., F. Mosteller, and J.W. Tukey. 1983. *Understanding Robust and Exploratory Data Analysis*. New York: John Wiley and Sons, Inc.
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- USEPA. 1995. *Supplemental Guidance to RAGS*. Region IV bulletins. USEPA Region IV Waste Management Division. Atlanta, Georgia.
- USEPA. 1998. *Risk-Based Concentration Table*. Region III. Philadelphia, Pennsylvania.

**APPENDIX A**

**PRELIMINARY RISK EVALUATION TABLE**

**BRAC Preliminary Risk Evaluation Table for Analytes Detected in Surface Soil  
Building 853, Naval Air Station Cecil Field**

Analyte <sup>1</sup>	Samples				Screening Values			Calculated Risk Values <sup>2</sup>	
	27S00101	27S00201	27S00301	27S00401	BKGRD	SCTL	RBC(R)	ELCR	HQ
<b>Semi-Volatile Organic</b>									
Benzo(a)anthracene	0.049	0.043				1.4	0.88 c		
Benzo(a)pyrene	0.069	0.1	0.05	0.06		0.1	0.088 c	1 E-6	
Benzo(b)fluoranthene	0.085	0.12				1.4	0.88 c		
Benzo(g,h,i)perylene	0.052	0.14				2300			
Benzo(k)fluoranthene	0.039	0.053				15	8.8 c		
Butylbenzylphthalate	0.58	0				220	16000 n		
Chrysene	0.071	0.077				140	88 c		
Dibenzo(a,h)anthracene	0	0.021				0.1	0.088 c		
Fluoranthene	0.13	0.031				2800	3100 n		
Indeno(1,2,3-cd)pyrene	0.047	0.092				1.5	0.88 c		
Phenanthrene	0.062	0				1900			
Pyrene	0.074	0.034				2200	2300 n		
bis(2-Ethylhexyl)phthalate	0.064	0.33				75	46 c		
<b>Pesticides/PCBs</b>									
Aldrin	0.0013	0.00048				0.06	0.038 c		
Endrin	0.00024	0.00025				21	23 n		
gamma-Chlordane	0.00025	0.00025				3	0.49 c		
<b>Inorganic Analytes</b>									
Aluminum	1990	2330			4430	75000	78000 n		
Barium	6.3	5			14.4	5200	5500 n		
Cadmium	1.1				1.7	37	39 n		
Calcium	23500	1440			9.4				
Chromium	6.5	6.2			7.8	290	390 n		
Cobalt	0.32				3.1	4700	4700 n		
Copper	2.8	2.7			6		3100 n		
Iron	672	345			1480		23000 n		
Lead	34	9.9			197	500			
Magnesium	314	57.5			329				
Manganese	8.1	3.6			22	370	1800 n		
Nickel	1.6	0.95			3.9	1500	1600 n		
Potassium	29.7	34.9			102				
Sodium	151	129			343				
Vanadium	2.8	2.3			6.3	490	550 n		
Zinc	18.8	9.6			37	23000	23000 n		
Cyanide		0.17			1.2	1600			
<b>General Chemistry</b>									
Total petroleum hydrocarbons	110	84							

**Sum= 1 E-6**

**Notes:**

<sup>1</sup> All detected analytes are reported. Concentrations and screening values are expressed in mg/kg.

<sup>2</sup>ELCR and HQ are only calculated for analytes detected at concentrations in excess of BKGRD and SCTL.

\* = Background screening criteria or SCTLs have been exceeded.

BKGRD = NAS Cecil Field Inorganic Background Data Set

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

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

c=carcinogenic risk

n=non-carcinogenic risk

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

HQ = calculated Hazard Quotient for non-carcinogenic analytes (HQ=detected concentration/RBC(R)).

**BRAC Preliminary Ecological Risk Evaluation Table for Analytes Detected in Surface Soil  
Building 853, Naval Air Station Cecil Field**

Analyte <sup>1</sup>	Sample Identifier				Screening Criteria			
	27S00101	27S00201	27S00301	27S00401	BKGRD <sup>2</sup>	Plant <sup>3</sup>	Invert <sup>4</sup>	Vert <sup>5</sup>
<b>Semi-Volatile Organic Compounds</b>								
Benzo(a)anthracene	0.049	0.043					34	910
Benzo(a)pyrene	0.069	0.1	0.05	0.06			34	910
Benzo(b)fluoranthene	0.085	0.12					34	910
Benzo(g,h,i)perylene	0.052	0.14					34	910
Benzo(k)fluoranthene	0.039	0.053					34	910
Butylbenzylphthalate	0.58							500000
Chrysene	0.071	0.077					34	910
Dibenzo(a,h)anthracene		0.021					34	910
Fluoranthene	0.13	0.031					34	910
Indeno(1,2,3-cd) pyrene	0.047	0.092					34	910
Phenanthrene	0.062						34	910
Pyrene	0.074	0.034					34	910
bis(2-Ethylhexyl) phthalate	0.064	0.33				200	630	1700
<b>Pesticides/PCBs</b>								
Aldrin	0.0013	0.00048				12.5	2.2	83
Endrin	0.00024	0.00025				12.5		8.3
gamma-Chlordane	0.00025	0.00025				12.5		0.35
<b>Inorganic Analytes</b>								
Aluminum	1990	2330			4430	50		54000
Barium	6.3	5			14.4	500		23000
Cadmium	1.1				1.7	3	50	5.3
Calcium	23500	1440			9.4			
Chromium	6.5	6.2			7.8	1	50	14000
Cobalt	0.32				3.1	20		1600
Copper	2.8	2.7			6	100	30	1000
Iron	672	345			1480			
Lead	34	9.9			197	50	1190	260
Magnesium	314	57.5			329			
Manganese	8.1	3.6			22	500		5800
Nickel	1.6	0.95			3.9	30	400	550
Potassium	29.7	34.9			102			
Sodium	151	129			343			
Vanadium	2.8	2.3			6.3	2		1100
Zinc	18.8	9.6			37	50	130	1600
Cyanide		0.17			1.2			1500
<b>General Chemistry</b>								
Total petroleum hydrocarbons	110	84						

**Notes:**

<sup>1</sup> All detected analytes are reported. Inorganic and General Chemistry Analytes are reported in mg/kg. All other values are reported in ug/kg. Screening Criteria (refer to Appendix A, Project Operations Plan, 1994b, for details).

<sup>2</sup> Background screening value for inorganic analytes in surface soil at NAS Cecil Field. This value is equal to two times the average concentration detected during the NAS Cecil Field background sampling program (Refer to Remedial Investigation Report for OU2, ABB-ES, 1995, Appendix J).

<sup>3</sup> Terrestrial Plant Toxicity Screening Value.

<sup>4</sup> Invertebrate Toxicity Screening Value.

<sup>5</sup> Vertebrate (Wildlife) Toxicity Screening Value.

**APPENDIX B**

**LABORATORY ANALYTICAL DATA**

NAS CECIL FIELD FACILITY 853  
 SOIL DATA -- REPORT REQ NO. 10248

Lab Sample Number:  
 Site  
 Locator  
 Collect Date:

C2TMG  
 CECILBRAC2  
 27S00101  
 31-JAN-96  
 VALUE QUAL UNITS DL

C2TMJ  
 CECILBRAC2  
 27S00201  
 31-JAN-96  
 VALUE QUAL UNITS DL

CLP VOLATILES 90-SOW

Chloromethane	11 U	ug/kg	11	11 U	ug/kg	11
Bromomethane	11 U	ug/kg	11	11 U	ug/kg	11
Vinyl chloride	11 U	ug/kg	11	11 U	ug/kg	11
Chloroethane	11 U	ug/kg	11	11 U	ug/kg	11
Methylene chloride	5 U	ug/kg	5	5 U	ug/kg	5
Acetone	11 U	ug/kg	11	11 U	ug/kg	11
Carbon disulfide	5 U	ug/kg	5	5 U	ug/kg	5
1,1-Dichloroethene	5 U	ug/kg	5	5 U	ug/kg	5
1,1-Dichloroethane	5 U	ug/kg	5	5 U	ug/kg	5
1,2-Dichloroethene (total)	5 U	ug/kg	5	5 U	ug/kg	5
Chloroform	5 U	ug/kg	5	5 U	ug/kg	5
1,2-Dichloroethane	5 U	ug/kg	5	5 U	ug/kg	5
2-Butanone	11 U	ug/kg	11	11 U	ug/kg	11
1,1,1-Trichloroethane	5 U	ug/kg	5	5 U	ug/kg	5
Carbon tetrachloride	5 U	ug/kg	5	5 U	ug/kg	5
Bromodichloromethane	5 U	ug/kg	5	5 U	ug/kg	5
1,2-Dichloropropane	5 U	ug/kg	5	5 U	ug/kg	5
cis-1,3-Dichloropropene	5 U	ug/kg	5	5 U	ug/kg	5
Trichloroethene	5 U	ug/kg	5	5 U	ug/kg	5
Dibromochloromethane	5 U	ug/kg	5	5 U	ug/kg	5
1,1,2-Trichloroethane	5 U	ug/kg	5	5 U	ug/kg	5
Benzene	5 U	ug/kg	5	5 U	ug/kg	5
trans-1,3-Dichloropropene	5 U	ug/kg	5	5 U	ug/kg	5
Bromoform	5 U	ug/kg	5	5 U	ug/kg	5
4-Methyl-2-pentanone	11 U	ug/kg	11	11 U	ug/kg	11
2-Hexanone	11 U	ug/kg	11	11 U	ug/kg	11
Tetrachloroethene	5 U	ug/kg	5	5 U	ug/kg	5
Toluene	5 U	ug/kg	5	5 U	ug/kg	5
1,1,2,2-Tetrachloroethane	5 U	ug/kg	5	5 U	ug/kg	5
Chlorobenzene	5 U	ug/kg	5	5 U	ug/kg	5
Ethylbenzene	5 U	ug/kg	5	5 U	ug/kg	5
Styrene	5 U	ug/kg	5	5 U	ug/kg	5
Xylenes (total)	5 U	ug/kg	5	5 U	ug/kg	5

CLP SEMIVOLATILES 90-SOW

Phenol	360 U	ug/kg	360	350 U	ug/kg	350
bis(2-Chloroethyl) ether	360 U	ug/kg	360	350 U	ug/kg	350
2-Chlorophenol	360 U	ug/kg	360	350 U	ug/kg	350
1,3-Dichlorobenzene	360 U	ug/kg	360	350 U	ug/kg	350
1,4-Dichlorobenzene	360 U	ug/kg	360	350 U	ug/kg	350
1,2-Dichlorobenzene	360 U	ug/kg	360	350 U	ug/kg	350
2-Methylphenol	360 U	ug/kg	360	350 U	ug/kg	350
2,2-oxybis(1-Chloropropane)	360 U	ug/kg	360	350 U	ug/kg	350
4-Methylphenol	360 U	ug/kg	360	350 U	ug/kg	350
N-Nitroso-di-n-propylamine	360 U	ug/kg	360	350 U	ug/kg	350
Hexachloroethane	360 U	ug/kg	360	350 U	ug/kg	350
Nitrobenzene	360 U	ug/kg	360	350 U	ug/kg	350
Isophorone	360 U	ug/kg	360	350 U	ug/kg	350
2-Nitrophenol	360 U	ug/kg	360	350 U	ug/kg	350
2,4-Dimethylphenol	360 U	ug/kg	360	350 U	ug/kg	350

NAS CECIL FIELD FACILITY 853  
 SOIL DATA -- REPORT REQ NO. 10248

Lab Sample Number:  
 Site  
 Locator  
 Collect Date:

C2TMG  
 CECILBRAC2  
 27S00101  
 31-JAN-96

C2TMJ  
 CECILBRAC2  
 27S00201  
 31-JAN-96

VALUE QUAL UNITS DL VALUE QUAL UNITS DL

bis(2-Chloroethoxy) methane	360 U	ug/kg	360	350 U	ug/kg	350
2,4-Dichlorophenol	360 U	ug/kg	360	350 U	ug/kg	350
1,2,4-Trichlorobenzene	360 U	ug/kg	360	350 U	ug/kg	350
Naphthalene	360 U	ug/kg	360	350 U	ug/kg	350
4-Chloroaniline	360 U	ug/kg	360	350 U	ug/kg	350
Hexachlorobutadiene	360 U	ug/kg	360	350 U	ug/kg	350
4-Chloro-3-methylphenol	360 U	ug/kg	360	350 U	ug/kg	350
2-Methylnaphthalene	360 U	ug/kg	360	350 U	ug/kg	350
Hexachlorocyclopentadiene	360 U	ug/kg	360	350 U	ug/kg	350
2,4,6-Trichlorophenol	360 U	ug/kg	360	350 U	ug/kg	350
2,4,5-Trichlorophenol	860 U	ug/kg	860	850 U	ug/kg	850
2-Chloronaphthalene	360 U	ug/kg	360	350 U	ug/kg	350
2-Nitroaniline	860 U	ug/kg	860	850 U	ug/kg	850
Dimethylphthalate	360 U	ug/kg	360	350 U	ug/kg	350
Acenaphthylene	360 U	ug/kg	360	350 U	ug/kg	350
2,6-Dinitrotoluene	360 U	ug/kg	360	350 U	ug/kg	350
3-Nitroaniline	860 U	ug/kg	860	850 U	ug/kg	850
Acenaphthene	360 U	ug/kg	360	350 U	ug/kg	350
2,4-Dinitrophenol	860 U	ug/kg	860	850 U	ug/kg	850
4-Nitrophenol	860 U	ug/kg	860	850 U	ug/kg	850
Dibenzofuran	360 U	ug/kg	360	350 U	ug/kg	350
2,4-Dinitrotoluene	360 U	ug/kg	360	350 U	ug/kg	350
Diethylphthalate	360 U	ug/kg	360	350 U	ug/kg	350
4-Chlorophenyl-phenylether	360 U	ug/kg	360	350 U	ug/kg	350
Fluorene	360 U	ug/kg	360	350 U	ug/kg	350
4-Nitroaniline	860 U	ug/kg	860	850 U	ug/kg	850
4,6-Dinitro-2-methylphenol	860 U	ug/kg	860	850 U	ug/kg	850
N-Nitrosodiphenylamine	360 U	ug/kg	360	350 U	ug/kg	350
4-Bromophenyl-phenylether	360 U	ug/kg	360	350 U	ug/kg	350
Hexachlorobenzene	360 U	ug/kg	360	350 U	ug/kg	350
Pentachlorophenol	860 U	ug/kg	860	850 U	ug/kg	850
Phenanthrene	62 J	ug/kg	350	350 U	ug/kg	350
Anthracene	360 U	ug/kg	360	350 U	ug/kg	350
Carbazole	360 U	ug/kg	360	350 U	ug/kg	350
Di-n-butylphthalate	360 U	ug/kg	360	350 U	ug/kg	350
Fluoranthene	130 J	ug/kg	350	31 J	ug/kg	350
Pyrene	74 J	ug/kg	350	34 J	ug/kg	350
Butylbenzylphthalate	580 U	ug/kg	350	350 U	ug/kg	350
3,3-Dichlorobenzidine	360 U	ug/kg	360	350 U	ug/kg	350
Benzo (a) anthracene	49 J	ug/kg	350	43 J	ug/kg	350
Chrysene	71 J	ug/kg	350	77 J	ug/kg	350
bis(2-Ethylhexyl) phthalate	64 J	ug/kg	350	330 J	ug/kg	350
Di-n-octylphthalate	360 U	ug/kg	360	350 U	ug/kg	350
Benzo (b) fluoranthene	85 J	ug/kg	350	120 J	ug/kg	350
Benzo (k) fluoranthene	39 J	ug/kg	350	53 J	ug/kg	350
Benzo (a) pyrene	69 J	ug/kg	350	100 J	ug/kg	350
Indeno (1,2,3-cd) pyrene	47 J	ug/kg	350	92 J	ug/kg	350
Dibenzo (a,h) anthracene	360 U	ug/kg	360	21 J	ug/kg	350
Benzo (g,h,i) perylene	52 J	ug/kg	350	140 J	ug/kg	350
CLP PESTICIDES/PCBS 90-SOW alpha-BHC	1.8 U	ug/kg	1.8	1.8 U	ug/kg	1.8

NAS CECIL FIELD FACILITY 853  
 SOIL DATA -- REPORT REQ NO. 10248

Lab Sample Number:  
 Site  
 Locator  
 Collect Date:

C2TMG  
 CECILBRAC2  
 27S00101  
 31-JAN-96

C2TMJ  
 CECILBRAC2  
 27S00201  
 31-JAN-96

VALUE QUAL UNITS DL VALUE QUAL UNITS DL

beta-BHC	1.8 U	ug/kg	1.8	1.8 U	ug/kg	1.8
delta-BHC	1.8 U	ug/kg	1.8	1.8 U	ug/kg	1.8
gamma-BHC (Lindane)	1.8 U	ug/kg	1.8	1.8 U	ug/kg	1.8
Heptachlor	1.8 U	ug/kg	1.8	1.8 U	ug/kg	1.8
Aldrin	1.3 J	ug/kg	2	.48 J	ug/kg	2
Heptachlor epoxide	1.8 U	ug/kg	1.8	1.8 U	ug/kg	1.8
Endosulfan I	1.8 U	ug/kg	1.8	1.8 U	ug/kg	1.8
Dieldrin	3.6 U	ug/kg	3.6	3.5 U	ug/kg	3.5
4,4-DDE	3.6 U	ug/kg	3.6	3.5 U	ug/kg	3.5
Endrin	.24 J	ug/kg	4	.25 J	ug/kg	4
Endosulfan II	3.6 U	ug/kg	3.6	3.5 U	ug/kg	3.5
4,4-DDD	3.6 U	ug/kg	3.6	3.5 U	ug/kg	3.5
Endosulfan sulfate	3.6 U	ug/kg	3.6	3.5 U	ug/kg	3.5
4,4-DDT	3.6 U	ug/kg	3.6	3.5 U	ug/kg	3.5
Methoxychlor	18 U	ug/kg	18	18 U	ug/kg	18
Endrin ketone	3.6 U	ug/kg	3.6	3.5 U	ug/kg	3.5
Endrin aldehyde	3.6 U	ug/kg	3.6	3.5 U	ug/kg	3.5
alpha-Chlordane	1.8 U	ug/kg	1.8	1.8 U	ug/kg	1.8
gamma-Chlordane	.25 J	ug/kg	2	.25 J	ug/kg	2
Toxaphene	180 U	ug/kg	180	180 U	ug/kg	180
Aroclor-1016	36 U	ug/kg	36	35 U	ug/kg	35
Aroclor-1221	72 U	ug/kg	72	71 U	ug/kg	71
Aroclor-1232	36 U	ug/kg	36	35 U	ug/kg	35
Aroclor-1242	36 U	ug/kg	36	35 U	ug/kg	35
Aroclor-1248	36 U	ug/kg	36	35 U	ug/kg	35
Aroclor-1254	36 U	ug/kg	36	35 U	ug/kg	35
Aroclor-1260	36 U	ug/kg	36	35 U	ug/kg	35
CLP METALS AND CYANIDE						
Aluminum	1990	mg/kg	40	2330	mg/kg	40
Antimony	.86 U	mg/kg	12	.85 U	mg/kg	12
Arsenic	.65 U	mg/kg	2	.64 U	mg/kg	2
Barium	6.3 J	mg/kg	40	5 J	mg/kg	40
Beryllium	.22 U	mg/kg	1	.21 U	mg/kg	1
Cadmium	1.1 J	mg/kg	1	.85 U	mg/kg	1
Calcium	23500	mg/kg	1000	1440	mg/kg	1000
Chromium	6.5	mg/kg	2	6.2	mg/kg	2
Cobalt	.32 J	mg/kg	10	.21 U	mg/kg	10
Copper	2.8 J	mg/kg	5	2.7 J	mg/kg	5
Iron	672 J	mg/kg	20	345 J	mg/kg	20
Lead	34 J	mg/kg	6	9.9 J	mg/kg	.6
Magnesium	314 J	mg/kg	1000	57.5 J	mg/kg	1000
Manganese	8.1	mg/kg	3	3.6	mg/kg	3
Mercury	.11 U	mg/kg	.1	.11 U	mg/kg	.1
Nickel	1.6 J	mg/kg	8	.95 J	mg/kg	8
Potassium	29.7 J	mg/kg	1000	34.9 J	mg/kg	1000
Selenium	.86 U	mg/kg	1	.85 U	mg/kg	1
Silver	.22 U	mg/kg	2	.21 U	mg/kg	2
Sodium	151 J	mg/kg	1000	129 J	mg/kg	1000
Thallium	.65 U	mg/kg	2	.64 U	mg/kg	2
Vanadium	2.8 J	mg/kg	10	2.3 J	mg/kg	10
Zinc	18.8	mg/kg	4	9.6	mg/kg	4

NAS CECIL FIELD -- FACILITY 853  
 SOIL DATA -- REPORT REQ NO. 10248

Lab Sample Number:	C2TMG	C2TMJ			
Site	CECILBRAC2	CECILBRAC2			
Locator	27S00101	27S00201			
Collect Date:	31-JAN-96	31-JAN-96			
VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Cyanide	.11 U	mg/kg	.5	.17 J	mg/kg	.5
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U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- FACILITY 853  
 SOIL DATA -- REPORT REQ NO. 10249

Lab Sample Number:	A6B0101410	A6B0101410
Site	CECILBRAC2	CECILBRAC2
Locator	27S00101	27S00201
Collect Date:	31-JAN-96	31-JAN-96
	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL

TPH					
Total petroleum hydrocarbons	110	mg/kg	11	84	mg/kg 11

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

NAS CECIL FIELD FACILITY 853  
 SOIL DATA -- REPORT REQ NO. 10250

Lab Sample Number:  
 Site  
 Locator  
 Collect Date:

C8920  
 CECILBRAC3  
 27S00301  
 17-FEB-97  
 VALUE QUAL UNITS

DL

C891X  
 CECILBRAC3  
 27S00401  
 17-FEB-97  
 VALUE QUAL UNITS

DL

Benzo (a) pyrene

50 J ug/kg 350

60 J ug/kg 350

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