

N00204.AR.005215  
NAS PENSACOLA  
5090.3a

DRAFT SITE ASSESSMENT FOR UNDERGROUND STORAGE TANK 23 (UST 23) WITH  
TRANSMITTAL LETTER NAS PENSACOLA FL  
12/11/2000  
TETRA TECH INC



**TETRA TECH NUS, INC.**

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(850) 385-9899 • FAX (850) 385-9860 • www.ttratech.com

*Bill 32 12/13/00*  
*Greg R*

TtNUS/TAL-00-112/0401-7.2.3

December 11, 2000

Project Number 0401

Commanding Officer  
Department of the Navy  
SOUTHDIVFACENCOM  
ATTN: Mr. Byas Glover  
Remedial Project Manager  
2155 Eagle Drive  
North Charleston, South Carolina 29406

Reference: Clean Contract No. N62467-94-D-0888  
Contract Task Order No. 0112

**Subject: Site Assessment Report Addendum for Underground Storage Tank Site 23, Naval Air Station Pensacola, Pensacola, Florida**

Dear Mr. Glover:

Tetra Tech NUS is pleased to submit for your review the Draft Site Assessment Report Addendum for Underground Storage Tank Site 23, Naval Air Station (NAS) Pensacola, Pensacola, Florida. Upon receipt of your comments and incorporation of the comments into the draft document, the addendum report will be submitted to the Florida Department of Environmental Protection (FDEP). As indicated below, a copy of the draft report has also been forwarded to Mr. Greg Campbell at NAS Pensacola.

If you have any questions, please call me at (850) 385-9899.

Sincerely yours,

Gerald Walker, P.G.  
Project Manager

GAW/gaw

Enclosure

c: Greg Campbell, NAS Pensacola PWC  
Debbie Wroblewski (Cover Letter Only)  
Mark Perry/file



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December 11, 2000

Joe Fugitt, P.G.

Remedial Project Manager

Technical Review/Federal Facilities

Florida Department of Environmental Protection

2600 Blair Stone Road

Tallahassee, Florida 32399-2400

RE: Site Assessment Report Addendum  
Underground Storage Tank Site 23  
U.S. Naval Air Station Pensacola  
Pensacola, Florida  
FDEP #179203973

Mr. Fugitt:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit the Site Assessment Report (SAR) Addendum for Underground Storage Tank Site 23 located at Naval Air Station Pensacola, Pensacola, Florida. This SAR Addendum has been prepared for the U.S. Navy Southern Division Naval Facilities Engineering Command under Contract Tank Order 112, for the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888.

The purpose of investigation was to address comments on the SAR from Florida Department of Environmental Protection (FDEP) dated March 31, 1998.

**PREVIOUS INVESTIGATIONS**

Investigations conducted at Site 23 prior to the SAR included an Initial Assessment Study (NEESA, 1983), a Verification Study (G&M, 1984), a Contamination Assessment (E&E, 1991), and the abandonment of three AVGAS Underground Storage Tanks, USTs 116, 119, 122, located within Site 23 (SOUTHNAVFACENCOM, 1995).

Field activities were conducted for the original SAR in March through May 1997 and included a hand auger soil survey and the installation of six shallow monitoring wells. In February 1998, the NASP Navy Public Works Center submitted a SAR based on the findings of all investigations.

Upon review of the SAR, FDEP issued a letter providing comments on the SAR and requiring the preparation of a SAR Addendum for the site. The FDEP letter detailed four (4) comments to be addressed in order to meet the requirements of Chapter 62-770, Florida Administrative Code (FAC). A copy of FDEP's letter is provided in Attachment A. The SAR Addendum letter report addresses each of the comments and summarizes the work performed by TtNUS. Conclusions and recommendations for the site are also provided.

#### **SAR ADDENDUM INVESTIGATION METHODS**

On May 9 and 10, 2000, TtNUS personnel collected soil samples for OVA screening from 37 soil boring locations (Figure 1, Attachment B). Two soil samples were collected in each soil boring from depths of approximately 1 foot and 2 feet below land surface (bls) using a stainless steel hand auger. The soil sampling activities were conducted in accordance with TtNUS's FDEP approved, Comprehensive Quality Assurance Plan (CQAP) No. 980038 and soil screening was conducted as specified in Petroleum Contamination Site Cleanup Criteria - Chapter 62-770 FAC.

A map showing the individual soil boring locations is provided as Figure 1 (Attachment B), an isoconcentration map showing the aerial distribution of the highest net OVA concentrations (filtered concentration subtracted from the unfiltered concentration) from each soil boring is provided as Figure 2 (Attachment B).

In addition to the soil screening field investigation, confirmation soil samples were collected for laboratory analysis. Six soil samples (plus a duplicate sample) were collected from the onsite soil borings. The soil borings that were sampled included HA04 (with a duplicate sample), HA20, HA22, HA26, HA29, and HA33. The sample locations were chosen based on OVA headspace screening results and field observations. Because of the age of the releases being investigated, field observations such as staining of the soil and/or soil odor were important factors in choosing laboratory samples.

The soil sample designations were numbered NASPXXHAYZZ , where:

NASP = Naval Air Station Pensacola  
XX = the site number (Site 23),  
HA = hand auger soil boring,  
YY = boring number (e.g. 03),  
ZZ = sample depth interval (e.g. 02 = 2 ft).

Each confirmation soil sample was analyzed for the parameters listed below.

- Volatile Organic Compounds (VOC) – EPA Method 8021B
- Polynuclear Aromatic Hydrocarbons (PAH) – EPA Method 8310
- Total Recoverable Petroleum Hydrocarbons (TRPH) – FL - PRO

The investigation results and conclusions will be discussed in the Response to Comments format relative to the FDEP comments received on the Site 23 SAR.

## **RESPONSE TO COMMENTS**

Comment 1. *The 1965 Navy Special Fuel Oil spill and the 1968 and 1969 Diesel Fuel Marine spills should be located on a site map with the monitoring wells to determine if monitoring wells are correctly placed to detect groundwater contamination.*

The former fuel piping trenchline, site assessment monitoring wells (1997), and approximate location of the 1965, 1968, and 1969 releases are depicted in Figure 1 (Attachment B). Based on Figure 1, MW-4 and MW-5 are located within the probable release area.

Comment 2. *Tables with filtered and unfiltered OVA readings from soil borings should be provided. Also, the soil boring logs should be provided. Because of the age of the spills and because groundwater is encountered very close to the ground surface, most of the volatile fractions may have evaporated off. For this reason, visual observations of soil staining may be more accurate in defining areas potentially contaminated by petroleum.*

Attachment C contains the following:

- Table 1, which summarizes soil OVA concentrations for the Site Assessment (1997) field event compiled from WES, Inc. field book entries
- Table 2, which summarizes soil OVA concentrations for the Site Assessment Addendum (2000) field event
- Soil boring logs for the 1997 soil screening sampling event
- Soil boring logs for the 2000 field event

Comment 3. *There is an inconsistency between the text and the lithologic logs in Appendix B. The text states that VOC readings in soil samples collected during monitoring well installation were BDL whereas the lithologic logs of monitoring wells MW-3, MW-4, MW-5, and MW-6 show that excessively contaminated soil may exist at these locations. This inconsistency should be resolved.*

Field log entries by WES, Inc. personnel document the detection of measurable VOC vapor concentrations in samples collected from the locations in question. The boring logs are correct, the referenced statement (paragraph two, Section 2.4 of the SAR) is incorrect.

Comment 4. *Soil samples should be collected and analyzed for the gasoline and kerosene analytical groups in accordance with the procedures specified in the Department's February 3, 1998 memo titled "Interim Guidance for Laboratory Analyses of Soil Samples for Petroleum Contamination Site Assessments."*

Six soil samples (plus one duplicate sample) were collected for laboratory analysis during the May 2000 sampling event. The samples were collected from locations corresponding to low, medium and high OVA headspace readings reported during the soil screening event. The laboratory results are discussed in the next section.

## **RESULTS**

Soil screening investigation included completion of 37 soil borings over the previous soil investigation area. Five of the soil borings were reported to contain OVA headspace readings exceeding 50 parts per million (ppm). Six soil samples corresponding to low, medium and high OVA headspace readings were collected for confirmation laboratory analysis. The confirmation laboratory analysis indicated no VOC or PAHs were present above instrument detection limits.

TPH was detected in the confirmation laboratory samples, however the detected concentrations ranged from 7.68 to 63.6 mg/kg and were therefore below the Florida Soil Cleanup Target Levels (SCTLs) for a Residential Direct Exposure of 340 mg/kg. The laboratory analytical results are summarized on Table 3 (Attachment C). A copy of the laboratory analytical results is included in Attachment D.

## **CONCLUSIONS AND RECOMMENDATIONS**

### Conclusions

- Monitoring wells installed for the original SAR are appropriately located for the groundwater investigation of the site.
- Soil screening activities completed in 1997 as part of the SAR indicated 24 soil borings with OVA headspace reading exceeding 50 ppm. Additional soil borings completed in the same area for this SAR addendum indicated 5 soil borings with OVA soil headspace measurements exceeding 50 ppm.
- Soil samples collected for confirmation laboratory analysis did not contain VOCs or PAH analytes at concentrations exceeding instrument detection limits. TPH was detected in the confirmation soil samples, but the detected concentrations did not exceed FDEP's SCTLs.

### Recommendations

Based on the results and conclusions contained in the SAR completed in February 1998, and this SAR addendum, TtNUS proposes a No Further Action without conditions be granted for Site 23. This proposal is based on the following:

- Analytical results reported in the SAR for groundwater samples collected from appropriately located monitoring wells indicate no exceedances of Federal or State water standards.
- Appropriate resolution of FDEP's comments concerning the Site 23 SAR.

Mr. Joe Fugitt  
FDEP  
December 11, 2000 – Page 6

- Analytical results from soil samples collected from areas of reported excessively contaminated soil indicated no exceedances of the Florida Soil Cleanup Target Levels as specified in Chapter 62-777 FAC.

If you have any questions regarding this submittal, please contact me at (850) 385-9899.

Sincerely,  
TETRA TECH NUS, INC.

Gerald A. Walker, P.G  
Task Order Manager  
Florida License No. PG-0001180

SB/gw

Enclosures (2)

c: B. Glover, Southern Division  
G. Campbell, NAS Pensacola  
Debbie Wroblewski (Cover Letter Only)  
M. Perry/file (unbound)

## REFERENCES

Ecology and Environment, Inc. (E&E) 1991. *Contamination Assessment/Remedial Activities, Naval Air Station Pensacola, Pensacola, Florida.*

Geraghty and Miller, Inc. (G&M) 1984. *Assessment of Potential Groundwater Pollution at Naval Air Station Pensacola, Pensacola, Florida.*

Naval Air Station Pensacola, Navy Public Works Center, 1998, *Site Assessment Report for Underground Storage Tank Site 23, Naval Air Station Pensacola, Pensacola Florida, February, 1998.*

Naval Energy and Environmental Support Activity (NEESA) 1983. *Initial; Assessment Study of Naval Air Station Pensacola, Pensacola, Florida.*

Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) 1995. *Contamination Assessment Report Addendum Site 5, UST 116, Naval Aviation Depot, Naval Air Station Pensacola, Pensacola, Florida.*

Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) 1995. *Contamination Assessment Report Addendum Site 6, UST 119, Naval Aviation Depot, Naval Air Station Pensacola, Pensacola, Florida*

Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) 1995. *Contamination Assessment Report Addendum Site 7, UST 122, Naval Aviation Depot, Naval Air Station Pensacola, Pensacola, Florida*

**ATTACHMENT A**  
**FDEP Comment Letter**

# Department of Environmental Protection

Lawton Chiles  
Governor

Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Virginia B. Wetherell  
Secretary

March 31, 1998

Mr. Byas Glover  
Code 18410  
Southern Division  
Naval Facilities Engineering Command  
2155 Eagle Drive  
P.O. Box 190010  
North Charleston, South Carolina 29419-9010

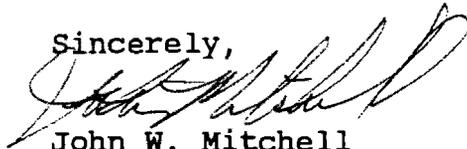
RE: Site Assessment Report, Site 23  
Naval Air Station Pensacola, Florida  
FDEP #179203973

Dear Mr. Glover:

I have completed the technical review of the above referenced document dated February 1998 (received March 3, 1998), submitted for this Site 23. Please submit a Site Assessment Report Addendum which addresses the comments in the attached memorandum from David Grabka. The memorandum referenced in Comment No. 4 is included.

If I can be of any further assistance with this matter, please contact me at (904) 921-9989.

Sincerely,



John W. Mitchell  
Remedial Project Manager

cc: Dean Spencer, NAS Pensacola  
Greg Campbell, NAS Pensacola  
Tom Moody, FDEP Northwest District

TJB



JJC



ESN



## Memorandum

# Florida Department of Environmental Protection

**TO:** John Mitchell, E.S. III, Remedial Project Manager, Technical Review Section

**THROUGH:** Tim Bahr, P.G. Supervisor, Technical Review Section *TB*

**FROM:** David P. Grabka, E.S. I, Technical Review Section *DPG*

**DATE:** March 19, 1998

**SUBJECT:** Site Assessment Report, Site 23, Naval Air Station Pensacola, Florida,  
February 25, 1998

---

I have completed my review of the Site Assessment Report (SAR) and request for No Further Action (NFA) for Site 23, NAS Pensacola, prepared by the Navy Public Works Center. Before No Further Action can be approved for this site and in order to meet the requirements of Chapter 62-770, Florida Administrative Code (F.A.C.), the following comments need to be addressed in a Site Assessment Report Addendum:

- (1) The 1965 Navy Special Fuel Oil spill and the 1968 and 1969 Diesel Fuel Marine spills should be located on a site map with the monitoring wells to determine if monitoring wells are correctly placed to detect groundwater contamination.
- (2) Tables with filtered and unfiltered OVA readings from soil borings should be provided. Also, the soil boring logs should be provided. Because of the age of the spills and because groundwater is encountered very close to the ground surface, most of the volatile fractions may have evaporated off. For this reason, visual observations of soil staining may be more accurate in defining areas potentially contaminated by petroleum.
- (3) There is an inconsistency between the text and the lithologic logs in Appendix B. The text states that VOC readings in soil samples collected during monitoring well installation were BDL whereas the lithologic logs of monitoring wells MW-3, MW-4, MW-5 and MW-6 show that excessively contaminated soil may exist at these locations. This inconsistency should be resolved.
- (4) Soil samples should be collected and analyzed for the gasoline and kerosene analytical groups in accordance with the procedures specified in the Department's February 3, 1998 memo titled "Interim Guidance for Laboratory Analyses of Soil Samples for Petroleum Contamination Site Assessments."

**ATTACHMENT B**  
**Figures**

SOURCE:  
 LOCATIONS OF ROADS, BUILDINGS, AND FORMER LOCATIONS OF USTS  
 AND AVGAS DISTRIBUTION LINES ARE TAKEN FROM NAVY PUBLIC WORKS  
 CENTER DRAWING "SOIL BORING AND TEMPORARY MONITORING WELL  
 LOCATIONS" DATED DECEMBER 14, 1995.

HAND AUGER BORING  
 MONITORING WELL

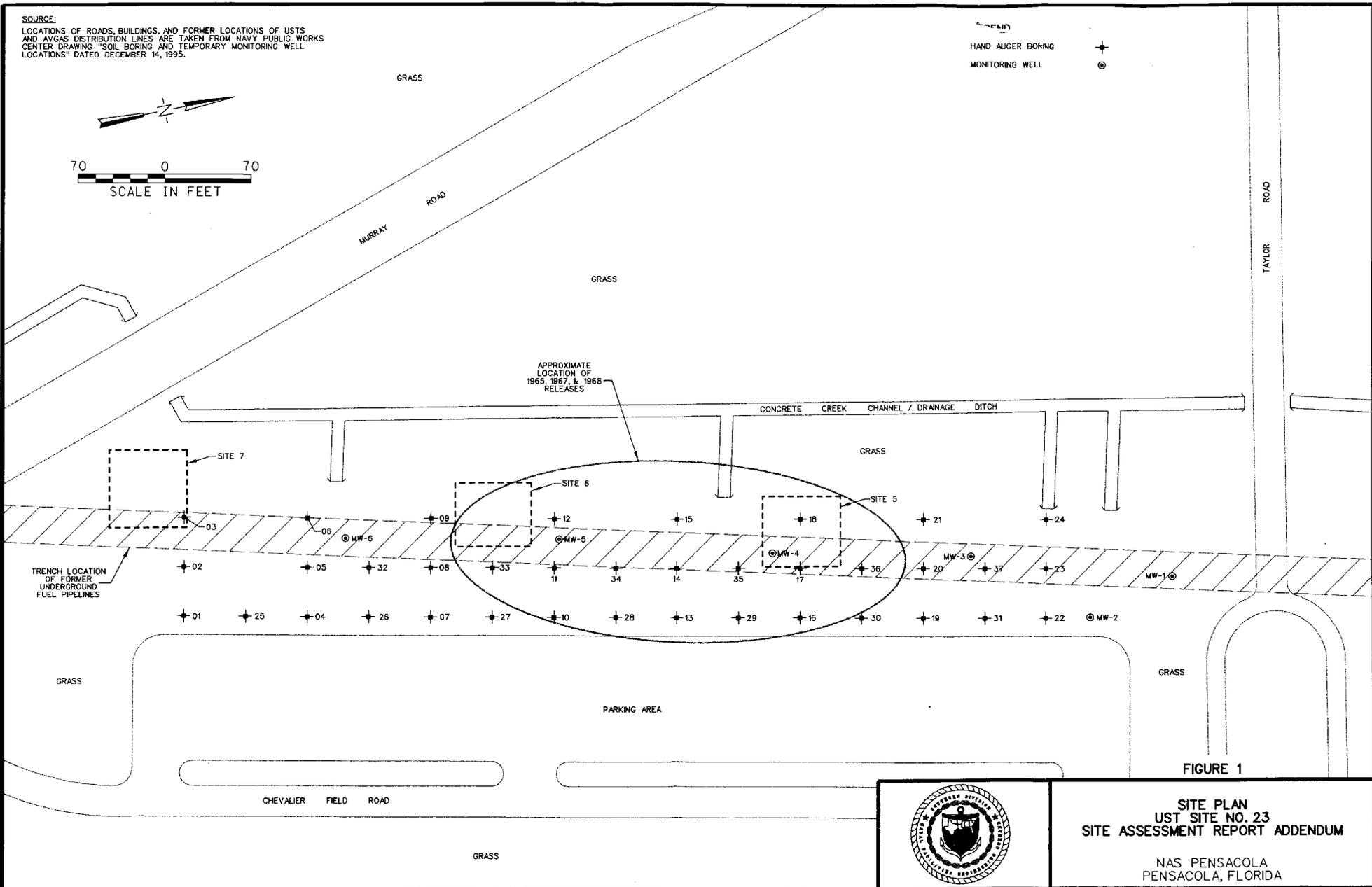
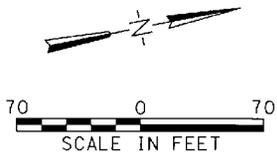


FIGURE 1

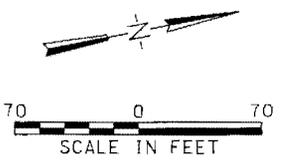


SITE PLAN  
 UST SITE NO. 23  
 SITE ASSESSMENT REPORT ADDENDUM

NAS PENSACOLA  
 PENSACOLA, FLORIDA

nt1x17b.dgn

SOURCE:  
 LOCATIONS OF ROADS, BUILDINGS, AND FORMER LOCATIONS OF USTS  
 AND AVGAS DISTRIBUTION LINES ARE TAKEN FROM NAVY PUBLIC WORKS  
 CENTER DRAWING "SOIL BORING AND TEMPORARY MONITORING WELL  
 LOCATIONS" DATED DECEMBER 14, 1935.



**LEGEND**

- HAND AUGER BORING
- ADJUSTED OVA CONCENTRATION 1,2 **95**
- OVA ISOCON 1,2 (DASHED WHERE APPROX.)
- 1 - CONCENTRATION IN PARTS PER MILLION (ppm)
- 2 - ADJUSTED FOR THE PRESENCE OF METHANE

**NOTE:**  
 IN CASES WHERE A BORING LOCATION HAD MULTIPLE  
 OVA HITS, THE MAXIMUM CONCENTRATION IS USED.

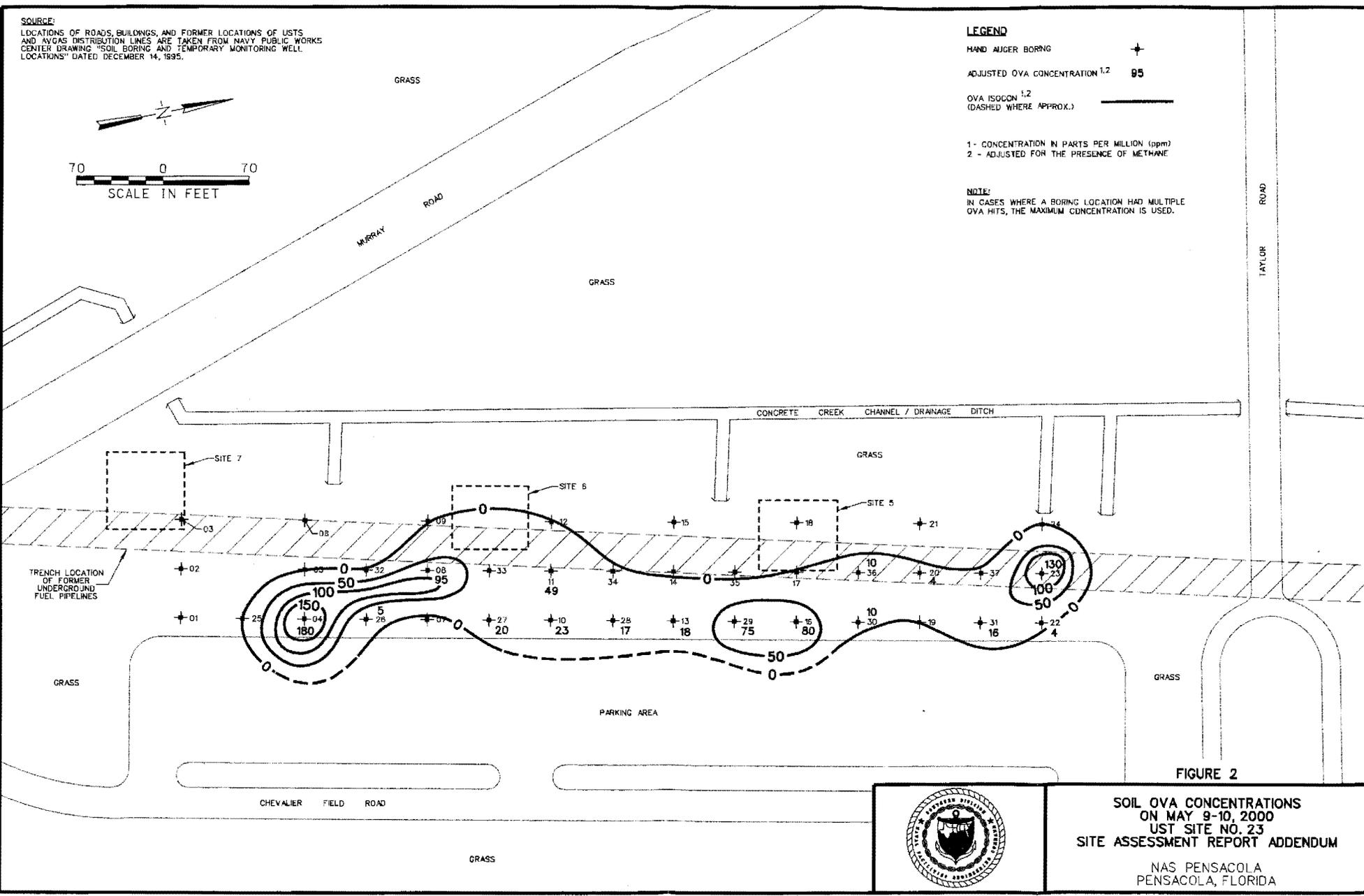


FIGURE 2



**SOIL OVA CONCENTRATIONS  
 ON MAY 9-10, 2000  
 UST SITE NO. 23  
 SITE ASSESSMENT REPORT ADDENDUM**

NAS PENSACOLA  
 PENSACOLA, FLORIDA

111417b.dgn

**ATTACHMENT C**  
**Tables**  
**Soil Boring Logs**

**TABLE 1**  
**SOIL SCREENING OVA CONCENTRATIONS - MARCH AND APRIL 1997**  
**UST SITE 23**

**NAVAL AIR STATION PENSACOLA PENSACOLA, FLORIDA**  
**PAGE 1 OF 2**

Sample ID	Sample Depth (feet)	Unfiltered (PPM)	Filtered (PPM)
SB01	1.0	0	NA
	2.0	REFUSAL	
SB02	1.0	0	NA
	2.0	0	NA
SB03	1.0	0	NA
	2.0	0	NA
SB04	1.0	0	NA
	2.0	0	NA
SB05	1.0	0	NA
	2.0	0	NA
SB06	1.0	0	NA
	2.0	0	NA
SB07	1.0	0	NA
	2.0	0	NA
SB08	1.0	0	NA
	2.0	>1,000	>1,000
SB09	1.0	0	NA
	2.0	0	NA
SB10	1.0	0	NA
	2.0	0	NA
SB11	1.0	0	NA
	2.0	0	NA
SB12	1.0	0	NA
	2.0	0	NA
SB13	1.0	REFUSAL	
	2.0	0	NA
SB14	1.0	0	NA
	2.0	>1,000	>1,000
SB15	1.0	0	NA
	2.0	0	NA
SB16	1.0	0	NA
	2.0	0	NA

Sample ID	Sample Depth (feet)	Unfiltered (PPM)	Filtered (PPM)
SB17	1.0	90	25
	2.0	55	0
SB18	1.0	0	NA
	2.0	REFUSAL	
SB19	1.0	0	NA
	2.0	0	NA
SB20	1.0	20	0
	2.0	45	0
SB21	1.0	0	NA
	2.0	0	NA
SB22	1.0	0	NA
	2.0	0	NA
SB23	1.0	0	NA
	2.0	>1,000	>1,000
SB24	1.0	0	NA
	2.0	0	NA
SB25	1.0	0	NA
	2.0	0	NA
SB26	1.0	>1,000	>1,000
	2.0	>1,000	>1,000
SB27	1.0	0	NA
	2.0	0	NA
SB28	1.0	0	NA
	2.0	0	NA
SB29	1.0	0	NA
	2.0	0	NA
SB30	1.0	0	NA
	2.0	0	NA
SB31	1.0	0	NA
	2.0	0	NA
SB32	1.0	25	15
	2.0	10	5

Sample ID	Sample Depth (feet)	Unfiltered (PPM)	Filtered (PPM)
SB33	1.0	0	NA
	2.0	0	NA
SB34	1.0	0	NA
	2.0	REFUSAL	
SB35	1.0	0	NA
	2.0	0	NA
SB36	1.0	0	NA
	2.0	0	NA
SB37	1.0	0	NA
	2.0	0	NA
SB38	1.0	0	NA
	2.0	0	NA
SB39	1.0	0	NA
	2.0	0	NA
SB40	1.0	0	NA
	2.0	0	NA
SB41	1.0	0	NA
	2.0	REFUSAL	
SB42	1.0	0	NA
	2.0	5	0
SB43	1.0	0	NA
	2.0	0	NA
SB44	1.0	0	NA
	2.0	0	NA
SB45	1.0	0	NA
	2.0	0	NA
SB46	1.0	0	NA
	2.0	0	NA
SB47	1.0	0	NA
	2.0	0	NA
SB48	1.0	0	NA
	2.0	0	NA

**TABLE 1**  
**SOIL SCREENING OVA CONCENTRATIONS - MARCH AND APRIL 1997**  
**UST SITE 23**

**NAVAL AIR STATION PENSACOLA PENSACOLA, FLORIDA**  
**PAGE 2 OF 2**

Sample ID	Sample Depth (feet)	Unfiltered (PPM)	Filtered (PPM)
SB49	1.0	0	NA
	2.0	0	NA
SB50	1.0	0	NA
	2.0	0	NA
SB51	1.0	0	NA
	2.0	0	NA
SB52	1.0	5	0
	2.0	>1,000	>1,000
SB53	1.0	>1,000	>1,000
	2.0	>1,000	>1,000
SB54	1.0	>1,000	>1,000
	2.0	>1,000	>1,000
SB55	1.0	>1,000	>1,000
	2.0	>1,000	>1,000
SB56	1.0	0	NA
	2.0	0	NA
SB57	1.0	0	NA
	2.0	0	NA
SB58	1.0	0	NA
	2.0	0	NA
SB59	1.0	0	NA
	2.0	0	NA
SB60	1.0	>1,000	>1,000
	2.0	78	51
SB61	1.0	0	NA
	2.0	3	0
SB62	1.0	0	NA
	2.0	>1,000	>1,000

Sample ID	Sample Depth (feet)	Unfiltered (PPM)	Filtered (PPM)
SB63	1.0	40	0
	2.0	>1,000	>1,000
SB64	1.0	0	NA
	2.0	0	NA
SB65	1.0	0	NA
	2.0	REFUSAL	
SB66	1.0	>1,000	>1,000
	2.0	>1,000	>1,000
SB67	1.0	0	NA
	2.0	>1,000	>1,000
SB68	1.0	15	0
	2.0	>1,000	>1,000
SB69	1.0	>1,000	>1,000
	2.0	30	0
SB70	1.0	0	NA
	2.0	0	NA
SB71	1.0	0	NA
	2.0	0	NA
SB72	1.0	65	0
	2.0	>1,000	>1,000
SB73	1.0	>1,000	>1,000
	2.0	85	0
SB74	1.0	30	15
	2.0	20	18
SB75	1.0	49	31
	2.0	12	12
SB76	1.0	0	NA
	2.0	19	10

Sample ID	Sample Depth (feet)	Unfiltered (PPM)	Filtered (PPM)
SB77	1.0	0	NA
	2.0	0	NA
SB78	1.0	65	35
	2.0	>1,000	>1,000
SB79	1.0	0	NA
	2.0	0	NA
SB80	1.0	0	NA
	2.0	>1,000	>1,000
SB81	1.0	3	0
	2.0	>1,000	>1,000
SB82	1.0	0	NA
	2.0	0	NA
SB83	1.0	0	NA
	2.0	0	NA
SB84	1.0	25	25
	2.0	>1,000	>1,000
SB85	1.0	17	17
	2.0	45	15
SB86	1.0	0	NA
	2.0	0	NA
SB87	1.0	>1,000	>1,000
	2.0	>1,000	>1,000
SB88	1.0	15	15
	2.0	>1,000	>1,000
SB89	1.0	0	NA
	2.0	>1,000	>1,000
SB90	1.0	0	NA
	2.0	0	NA

**TABLE 2**  
**SOIL SCREENING OVA CONCENTRATIONS - MAY 2000**  
**UST SITE 23**

**NAS PENSACOLA**  
**PENSACOLA, FLORIDA**  
**PAGE 1 OF 3**

Sample ID	Sample Depth (feet)	Unfiltered Concentration (PPM <sup>1</sup> )	Filtered Concentration (PPM <sup>1</sup> )	Net VOC Concentration (PPM <sup>1</sup> )
HA01	1.0	0	NA	0
	2.0	0	NA	0
HA02	1.0	0	NA	0
	2.0	0	NA	0
HA03	1.0	0	NA	0
	2.0	0	NA	0
HA04	1.0	31	31	0
	2.0	260	80	180
HA05	1.0	0	NA	0
	2.0	0	NA	0
HA06	1.0	0	NA	0
	2.0	0	NA	0
HA07	1.0	80	80	0
	2.0	(saturated)	NA	0
HA08	1.0	0	NA	0
	1.5	210	115	95
HA09	1.0	0	NA	0
	1.5	0	NA	0
HA10	0.5	13	5	8
	1.0	65	42	23
HA11	1.0	0	NA	0
	2.0	70	21	49
HA12	1.0	0	NA	0
	2.0	0	NA	0
HA13	0.5	31	31	0
	1.0	38	20	18
HA14	1.0	0	NA	0
	2.0	0	NA	0

1 - Parts Per Million  
NA - Not Applicable

**TABLE 2**  
**SOIL SCREENING OVA CONCENTRATIONS - MAY 2000**  
**UST SITE 23**

**NAS PENSACOLA**  
**PENSACOLA, FLORIDA**  
**PAGE 2 OF 3**

Sample ID	Sample Depth (feet)	Unfiltered Concentration (PPM <sup>1</sup> )	Filtered Concentration (PPM <sup>1</sup> )	Net VOC Concentration (PPM <sup>1</sup> )
HA15	1.0	0	NA	0
	2.0	0	NA	0
HA16	0.5	35	35	0
	1.0	160	80	80
HA17	1.0	0	NA	0
	2.0	23	23	0
HA18	1.0	0	NA	0
	2.0	0	NA	0
HA19	0.5	40	40	0
	1.0	4	4	0
HA20	1.0	0	0	0
	2.0	22	18	4
HA21	1.0	0	NA	0
	1.5	0	NA	0
HA22	0.5	8	4	4
	1.0	2	2	0
HA23	1.0	120	70	50
	1.5	220	90	130
HA24	1.0	0	NA	0
	1.5	0	NA	0
HA25	0.5	0	0	0
	1.0	3	3	0
HA26	0.5	15	15	0
	1.0	16	11	5
HA27	0.5	11	1	10
	1.0	65	45	20
HA28	0.5	10	10	0
	1.0	46	29	17
1 - Parts Per Million				
NA - Not Applicable				

**TABLE 2**  
**SOIL SCREENING OVA CONCENTRATIONS - MAY 2000**  
**UST SITE 23**

**NAS PENSACOLA**  
**PENSACOLA, FLORIDA**  
**PAGE 3 OF 3**

Sample ID	Sample Depth (feet)	Unfiltered Concentration (PPM <sup>1</sup> )	Filtered Concentration (PPM <sup>1</sup> )	Net VOC Concentration (PPM <sup>1</sup> )
HA29	0.5	0	0	0
	1.0	180	105	75
HA30	0.5	16	6	10
	1.0	NR	NA	0
HA31	0.5	0	NA	0
	1.0	31	15	16
HA32	1.0	0	NA	0
	2.0	0	NA	0
HA33	1.0	0	NA	0
	2.0	NR	NA	0
HA34	1.0	0	NA	0
	1.5	0	NA	0
HA35	1.0	0	NA	0
	2.0	0	NA	0
HA36	1.0	0	NA	0
	2.0	130	120	10
HA37	1.0	0	NA	0
	1.5	0	NA	0

1 - Parts Per Million  
NA - Not Applicable  
NR - Not Reported

**Table 3  
SUMMARY OF ANALYTES DETECTED IN SOIL SAMPLES**

UST SITE 23  
NAS PENSACOLA  
PENSACOLA, FLORIDA

Sample No.	NASP23HA0401	NASP23HAD01	NASP23HA2002	NASP23HA2201	NASP23HA2601	NASP23HA2901	NASP23HA3302	
Sample Location	duplicate HA04							
Collect Date	5/10/00	5/10/00	5/10/00	5/10/00	5/10/00	5/10/00	5/10/00	
Sample Depth (bls)	1 ft	1 ft	2 ft	1 ft	1 ft	1 ft	1 ft	
	<u>DE1<sup>1</sup>/DE2<sup>2</sup>/LE<sup>3</sup> (mg/kg)</u>							
<b><u>Volatile<sup>4</sup> (mg/kg)</u></b>								
None Detected								
<b><u>Polycyclic Aromatic Hydrocarbons<sup>5</sup> (mg/kg)</u></b>								
None Detected								
<b><u>Total Petroleum Hydrocarbons<sup>6</sup> (mg/kg)</u></b>	340/2500/340	28.2	--	--	42.9	36.8	63.6	7.68

<sup>1</sup> DE1= Direct Exposure limit for residential area from Chapter 62-777, F.A.C.

<sup>2</sup> DE2= Direct Exposure limit for industrial area from Chapter 62-777, F.A.C.

<sup>3</sup> LE= Leachability for groundwater limit from Chapter 62-777, F.A.C.

<sup>4</sup> SW-846 8260B, <sup>5</sup> SW-846 8310, <sup>6</sup> FL-PRO

-- = Compound was not detected above instrument detection limits.

























































































































































































# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA02  
 PROJECT NUMBER: 0401 DATE: 09-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S	Remarks	OVA Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED			
1-HA	1	/	/	[Diagram showing lithology change levels]	loose	red to orange	medium-grained SAND, w/ trace		dry	0	NA			
2-HA	2	/	/				silt			0	NA			
		/	/			moderately dense	brown	medium-grained SAND, w/ trace		hard, dry				
		/	/					rounded qtz gravel						
		/	/			dense	dark brown and/or gray	medium-grained SAND		very moist to wet				
		/	/			loose	white	medium- to coarse-grained		wet @ ≈ 24 ins.				
		/	/					SAND, w/ shell fragments		saturated @ ≈ 30 ins.				
		/	/							BGS				
		/	/											
		/	/											

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_



# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA03  
 PROJECT NUMBER: 0401 DATE: 9-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6' or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)		
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED	
1-HA	1	/	/	[Diagram showing soil layers from 1 to 24 feet depth]	loose	red to orange	medium-grained SAND, w/ trace silt		dry	0	NA	
2-HA	2	/	/		moderately dense	brown	medium-grained SAND, w/ some coarse and very coarse grains		damp	0	NA	
		/	/		dense	dark brown and/or gray	medium-grained SAND		moist to very moist			
		/	/		loose	white	medium- to coarse-grained SAND, w/ shell fragments		wet @ ≈ 20 ins. saturated @ ≈ 24 ins.			
		/	/						BGS			
		/	/									
		/	/									
		/	/									
		/	/									
		/	/									

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_







# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA06  
 PROJECT NUMBER: 0401 DATE: 09-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED		
1-HA	1			[Diagonal lines]	loose	red to orange	medium-grained SAND, w/ trace		dry	0	NA		
2-HA	2						silt			0	NA		
						moderately dense	brown	medium-grained SAND, w/ trace		hard, dry			
								rounded qtz gravel					
						dense	dark brown and/or gray	medium-grained SAND		moist to very moist			
						loose	white	medium- to coarse-grained		wet @ ≈ 20 ins.			
								SAND, w/ shell fragments		saturated @ ≈ 24 ins.			
										BGS			

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface

Drilling Area Background (ppm):

Converted to Well?

Yes

No

Well I.D. #: \_\_\_\_\_











# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA11  
 PROJECT NUMBER: 0401 DATE: 09-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED		
1-HA	1	/	/	[Diagram showing lithology change from 1 to 3 feet]	loose	red to orange	medium-grained SAND, w/ trace		dry	0	NA		
2-HA	2	/	/				silt			70	21		
3-HA	3	/	/			moderately dense	brown	medium-grained SAND, w/ trace		hard, dry			
		/	/					rounded qtz gravel					
		/	/			dense	dark brown and/or gray	medium-grained SAND w/ dark		moist to very moist w/ faint petroleum odor			
		/	/					gray or black staining					
		/	/			loose	white	medium- to coarse-grained		wet @ ≈ 28 ins.			
		/	/					SAND, w/ shell fragments		saturated @ ≈ 33 ins.			
		/	/							BGS			
		/	/										

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface

Drilling Area Background (ppm):

Converted to Well?

Yes

No

Well I.D. #: \_\_\_\_\_











# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA16  
 PROJECT NUMBER: 0401 DATE: 09-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or ROD	Depth (FL) or Run No.	Blows/ 6" or ROD (%)	Sample Rcovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)		
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED	
1-HA	0.5	/	/	[Blank]	moderately dense	brown	loamy, fine-grained SAND, w/		moist	35	35	
2-HA	1	/	/				some clay			160	80	
		/	/		moderately dense	gray	medium-grained SAND, w/ trace		moist to very moist w/ petroleum odor			
		/	/				silt, w/ black staining					
		/	/						wet @ ≈ 10 ins.			
		/	/						saturated @ ≈ 13 ins.			
		/	/						BGS			
		/	/									
		/	/									
		/	/									

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_



# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA17  
 PROJECT NUMBER: 0401 DATE: 09-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Rcovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)		
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED	
1-HA	1			[Lithology Change Diagram]	loose	red to orange	medium-grained SAND, w/ trace silt		dry	0	NA	
2-HA	2									23	23	
3-HA	3				moderately dense	brown	medium-grained SAND, w/ trace rounded qtz gravel		hard, dry			
					dense	dark brown and/or gray	medium-grained SAND, w/ dark gray or black staining		moist to very moist w/ faint petroleum odor			
					loose	white	medium- to coarse-grained SAND, w/ shell fragments		wet @ ≈ 26 ins. saturated @ ≈ 30 ins.			
									BGS			

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface

Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_









# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA21  
 PROJECT NUMBER: 0401 DATE: 09-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED		
1-HA	1			[Diagonal lines]	loose	red to orange	medium-grained SAND, w/ trace		dry	0	NA		
2-HA	1.5						silt			0	NA		
						moderately dense	brown	medium-grained SAND, w/ sparse		hard, dry			
						dense		rounded qtz gravel					
							dark brown and/or gray	medium-grained SAND		very moist			
										wet @ ≈ 16 ins.			
										saturated @ ≈ 18 ins.			
										BGS			

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface

Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_













# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA27  
 PROJECT NUMBER: 0401 DATE: 10-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or ROD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED		
1-HA	0.5	/	/		moderately dense	brown	loamy, fine-grained SAND, w/ some clay		moist	11	1		
2-HA	1	/	/		moderately dense	gray	medium-grained SAND, w/ trace silt, w/ black staining		moist to very moist w/ petroleum odor	65	45		
		/	/						wet @ ≈ 11 ins.				
		/	/						saturated @ ≈ 14 ins.				
		/	/						BGS				
		/	/										
		/	/										
		/	/										
		/	/										
		/	/										

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 5 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_







# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA30  
 PROJECT NUMBER: 0401 DATE: 10-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)	
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED
1-HA	0.5	/	/		moderately dense	brown	loamy, fine-grained SAND, w/		moist	16	6
2-HA	1	/	/				some clay			160	200
		/	/		moderately dense	gray	medium-grained SAND, w/ trace		moist to very moist w/ petroleum odor		
		/	/				silt, w/ black staining				
		/	/						wet @ ≈ 10 ins.		
		/	/						saturated @ ≈ 12 ins.		
		/	/						BGS		
		/	/								
		/	/								
		/	/								

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_



# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA31  
 PROJECT NUMBER: 0401 DATE: 10-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED		
1-HA	0.5	/	/		moderately dense	brown	loamy, fine-grained SAND, w/		moist	0	0		
2-HA	1	/	/				some clay			31	15		
		/	/			moderately dense	gray	medium-grained SAND, w/ trace		moist to very moist w/ faint petroleum odor			
		/	/					silt, w/ faint black staining					
		/	/							wet @ ≈ 11 ins.			
		/	/							saturated @ ≈ 13 ins.			
		/	/							BGS			
		/	/										
		/	/										
		/	/										

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_



# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA32  
 PROJECT NUMBER: 0401 DATE: 10-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED		
1-HA	1	/	/	[Lithology Column]	loose	red to orange	medium-grained SAND, w/ trace		dry	0	NA		
2-HA	2	/	/				silt			0	NA		
		/	/			moderately dense	brown	medium-grained SAND, w/ trace		hard, dry			
		/	/					rounded qtz gravel					
		/	/			dense	dark brown and/or gray	medium-grained SAND		very moist to wet			
		/	/			loose	white	medium- to coarse-grained		wet @ ≈ 24 ins.			
		/	/					SAND, w/ shell fragments		saturated @ ≈ 30 ins.			
		/	/							BGS			
		/	/										
		/	/										

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well?  Yes  No Well I.D. #: \_\_\_\_\_



# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA33  
 PROJECT NUMBER: 0401 DATE: 10-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or ROD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)	
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED
1-HA	1	/	/	[Diagram showing lithology change levels]	loose	red to orange	medium-grained SAND, w/ trace		dry	0	0
2-HA	2	/	/				silt			180	230
3-HA	3	/	/		moderately dense	brown	medium-grained SAND, w/ trace		hard, dry		
		/	/				rounded qtz gravel				
		/	/		dense	dark brown and/or gray	medium-grained SAND w/ dark		moist to very moist w/ faint petroleum odor		
		/	/				gray or black staining				
		/	/		loose	white	medium- to coarse-grained		wet @ ~ 28 ins.		
		/	/				SAND, w/ shell fragments		saturated @ ~ 33 ins.		
		/	/						BGS		
		/	/								

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_







# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA36  
 PROJECT NUMBER: 0401 DATE: 10-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED		
1-HA	1				loose	red to orange	medium-grained SAND, w/ trace		dry	0	NA		
2-HA	2						silt			130	120		
3-HA	3					moderately dense	brown	medium-grained SAND, w/ trace		hard, dry			
								rounded qtz gravel					
						dense	dark brown and/or gray	medium-grained SAND, w/ dark		moist to very moist w/ petroleum odor			
								gray or black staining					
						loose	white	medium- to coarse-grained		wet @ ≈ 27 ins.			
								SAND, w/ shell fragments		saturated @ ≈ 30 ins.			
										BGS			

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_



# BORING LOG

PROJECT NAME: NAS Pensacola BORING NUMBER: HA37  
 PROJECT NUMBER: 0401 DATE: 10-May-00  
 DRILLING COMPANY: \_\_\_\_\_ GEOLOGIST: Skip Barton  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or ROD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Level	MATERIAL DESCRIPTION			U S C S *	Remarks	OVA Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			UNFILTERED	FILTERED		
1-HA	1	/	/	[Diagonal lines]	loose	red to orange	medium-grained SAND, w/ trace		dry	0	NA		
2-HA	1.5	/	/				silt			0	NA		
		/	/			moderately dense	brown	medium-grained SAND, w/ trace		moist			
		/	/					rounded qtz gravel					
		/	/							wet @ ≈ 18 ins.			
		/	/							saturated @ ≈ 21 ins.			
		/	/							BGS			
		/	/										
		/	/										
		/	/										

\* When rock coring, enter rock brokenness.  
 \*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response is read.

Remarks: BGS = below ground surface Drilling Area Background (ppm):

Converted to Well? Yes  No  Well I.D. #: \_\_\_\_\_

**ATTACHMENT D**  
**Laboratory Analytical Report**



# Report of Analysis

Client Sample ID:	NASP23 HA0401	Date Sampled:	05/10/00
Lab Sample ID:	F6500-1	Date Received:	05/11/00
Matrix:	SO - Soil	Percent Solids:	90.1
Method:	SW846 8260B		
Project:	NAS Pensacola		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H007468.D	1	05/17/00	CJP	n/a	n/a	VH80
Run #2							

### VOA 8021 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	5.3	ug/kg	
75-27-4	Bromodichloromethane	ND	5.3	ug/kg	
75-25-2	Bromoform	ND	5.3	ug/kg	
108-90-7	Chlorobenzene	ND	5.3	ug/kg	
75-00-3	Chloroethane	ND	5.3	ug/kg	
67-66-3	Chloroform	ND	5.3	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	11	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.3	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.3	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.3	ug/kg	
106-93-4	1,2-Dibromoethane	ND	5.3	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.3	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.3	ug/kg	
124-48-1	Dibromochloromethane	ND	5.3	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.3	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.3	ug/kg	
541-73-1	m-Dichlorobenzene	ND	5.3	ug/kg	
95-50-1	o-Dichlorobenzene	ND	5.3	ug/kg	
106-46-7	p-Dichlorobenzene	ND	5.3	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.3	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.3	ug/kg	
100-41-4	Ethylbenzene	ND	5.3	ug/kg	
74-83-9	Methyl bromide	ND	5.3	ug/kg	
74-87-3	Methyl chloride	ND	5.3	ug/kg	
75-09-2	Methylene chloride	ND	11	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.3	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.3	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.3	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.3	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.3	ug/kg	
108-88-3	Toluene	ND	5.3	ug/kg	
79-01-6	Trichloroethylene	ND	5.3	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.3	ug/kg	
75-01-4	Vinyl chloride	ND	5.3	ug/kg	
1330-20-7	Xylene (total)	ND	16	ug/kg	

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



## Report of Analysis

Page 2 of 2

<b>Client Sample ID:</b> NASP23 HA0401	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-1	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 90.1
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Pensacola	

### VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		71-122%
2037-26-5	Toluene-D8	101%		73-128%
460-00-4	4-Bromofluorobenzene	105%		53-158%
17060-07-0	1,2-Dichloroethane-D4	106%		71-122%

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HA0401	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-1	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 90.1
<b>Method:</b> EPA 8310	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA001476.D	1	05/25/00	CCJ	05/23/00	OP1590	GAA64
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	370	ug/kg	
208-96-8	Acenaphthylene	ND	740	ug/kg	
120-12-7	Anthracene	ND	370	ug/kg	
56-55-3	Benzo(a)anthracene	ND	74	ug/kg	
50-32-8	Benzo(a)pyrene	ND	74	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	74	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	74	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	74	ug/kg	
218-01-9	Chrysene	ND	74	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	74	ug/kg	
206-44-0	Fluoranthene	ND	370	ug/kg	
86-73-7	Fluorene	ND	370	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	74	ug/kg	
91-20-3	Naphthalene	ND	370	ug/kg	
90-12-0	1-Methylnaphthalene	ND	370	ug/kg	
91-57-6	2-Methylnaphthalene	ND	370	ug/kg	
85-01-8	Phenanthrene	ND	370	ug/kg	
129-00-0	Pyrene	ND	370	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	66%		35-135%
92-94-4	p-Terphenyl	84%		50-150%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



# Report of Analysis

<b>Client Sample ID:</b> NASP23 HA0401	
<b>Lab Sample ID:</b> F6500-1	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> FLORIDA-PRO	<b>Percent Solids:</b> 90.1
<b>Project:</b> NAS Pensacola	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP08332.D	1	05/19/00	ME	05/18/00	OP1570	GOP379
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	28.2	9.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	98%		40-140%	

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



# Report of Analysis

<b>Client Sample ID:</b> NASP23 HAD01	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-2	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.9
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H007469.D	1	05/17/00	CJP	n/a	n/a	VH80
Run #2							

### VOA 8021 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	5.6	ug/kg	
75-27-4	Bromodichloromethane	ND	5.6	ug/kg	
75-25-2	Bromoform	ND	5.6	ug/kg	
108-90-7	Chlorobenzene	ND	5.6	ug/kg	
75-00-3	Chloroethane	ND	5.6	ug/kg	
67-66-3	Chloroform	ND	5.6	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	11	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.6	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.6	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.6	ug/kg	
106-93-4	1,2-Dibromoethane	ND	5.6	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.6	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.6	ug/kg	
124-48-1	Dibromochloromethane	ND	5.6	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.6	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.6	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.6	ug/kg	
541-73-1	m-Dichlorobenzene	ND	5.6	ug/kg	
95-50-1	o-Dichlorobenzene	ND	5.6	ug/kg	
106-46-7	p-Dichlorobenzene	ND	5.6	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.6	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.6	ug/kg	
100-41-4	Ethylbenzene	ND	5.6	ug/kg	
74-83-9	Methyl bromide	ND	5.6	ug/kg	
74-87-3	Methyl chloride	ND	5.6	ug/kg	
75-09-2	Methylene chloride	ND	11	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.6	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.6	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.6	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.6	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.6	ug/kg	
108-88-3	Toluene	ND	5.6	ug/kg	
79-01-6	Trichloroethylene	ND	5.6	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.6	ug/kg	
75-01-4	Vinyl chloride	ND	5.6	ug/kg	
1330-20-7	Xylene (total)	ND	17	ug/kg	

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



## Report of Analysis

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<b>Client Sample ID:</b> NASP23 HAD01	
<b>Lab Sample ID:</b> F6500-2	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> 89.9
<b>Project:</b> NAS Pensacola	

### VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		71-122%
2037-26-5	Toluene-D8	103%		73-128%
460-00-4	4-Bromofluorobenzene	103%		53-158%
17060-07-0	1,2-Dichloroethane-D4	106%		71-122%

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HAD01	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-2	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.9
<b>Method:</b> EPA 8310	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA001477.D	1	05/25/00	CCJ	05/23/00	OP1590	GAA64
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	370	ug/kg	
208-96-8	Acenaphthylene	ND	740	ug/kg	
120-12-7	Anthracene	ND	370	ug/kg	
56-55-3	Benzo(a)anthracene	ND	74	ug/kg	
50-32-8	Benzo(a)pyrene	ND	74	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	74	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	74	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	74	ug/kg	
218-01-9	Chrysene	ND	74	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	74	ug/kg	
206-44-0	Fluoranthene	ND	370	ug/kg	
86-73-7	Fluorene	ND	370	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	74	ug/kg	
91-20-3	Naphthalene	ND	370	ug/kg	
90-12-0	1-Methylnaphthalene	ND	370	ug/kg	
91-57-6	2-Methylnaphthalene	ND	370	ug/kg	
85-01-8	Phenanthrene	ND	370	ug/kg	
129-00-0	Pyrene	ND	370	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	70%		35-135%
92-94-4	p-Terphenyl	88%		50-150%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Page 1 of 2

<b>Client Sample ID:</b> NASP23 HA2601	
<b>Lab Sample ID:</b> F6500-3	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> 89.1
<b>Project:</b> NAS Pensacola	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H007470.D	1	05/17/00	CJP	n/a	n/a	VH80
Run #2							

### VOA 8021 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	5.6	ug/kg	
75-27-4	Bromodichloromethane	ND	5.6	ug/kg	
75-25-2	Bromoform	ND	5.6	ug/kg	
108-90-7	Chlorobenzene	ND	5.6	ug/kg	
75-00-3	Chloroethane	ND	5.6	ug/kg	
67-66-3	Chloroform	ND	5.6	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	11	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.6	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.6	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.6	ug/kg	
106-93-4	1,2-Dibromoethane	ND	5.6	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.6	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.6	ug/kg	
124-48-1	Dibromochloromethane	ND	5.6	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.6	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.6	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.6	ug/kg	
541-73-1	m-Dichlorobenzene	ND	5.6	ug/kg	
95-50-1	o-Dichlorobenzene	ND	5.6	ug/kg	
106-46-7	p-Dichlorobenzene	ND	5.6	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.6	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.6	ug/kg	
100-41-4	Ethylbenzene	ND	5.6	ug/kg	
74-83-9	Methyl bromide	ND	5.6	ug/kg	
74-87-3	Methyl chloride	ND	5.6	ug/kg	
75-09-2	Methylene chloride	ND	11	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.6	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.6	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.6	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.6	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.6	ug/kg	
108-88-3	Toluene	ND	5.6	ug/kg	
79-01-6	Trichloroethylene	ND	5.6	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.6	ug/kg	
75-01-4	Vinyl chloride	ND	5.6	ug/kg	
1330-20-7	Xylene (total)	ND	17	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



## Report of Analysis

Page 2 of 2

<b>Client Sample ID:</b> NASP23 HA2601	
<b>Lab Sample ID:</b> F6500-3	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> 89.1
<b>Project:</b> NAS Pensacola	

### VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	117%		71-122%
2037-26-5	Toluene-D8	103%		73-128%
460-00-4	4-Bromofluorobenzene	104%		53-158%
17060-07-0	1,2-Dichloroethane-D4	111%		71-122%

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HA2601	
<b>Lab Sample ID:</b> F6500-3	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> EPA 8310	<b>Percent Solids:</b> 89.1
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA001478.D	I	05/25/00	CCJ	05/23/00	OP1590	GAA64
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	370	ug/kg	
208-96-8	Acenaphthylene	ND	750	ug/kg	
120-12-7	Anthracene	ND	370	ug/kg	
56-55-3	Benzo(a)anthracene	ND	75	ug/kg	
50-32-8	Benzo(a)pyrene	ND	75	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	75	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	75	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	75	ug/kg	
218-01-9	Chrysene	ND	75	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	75	ug/kg	
206-44-0	Fluoranthene	ND	370	ug/kg	
86-73-7	Fluorene	ND	370	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	75	ug/kg	
91-20-3	Naphthalene	ND	370	ug/kg	
90-12-0	1-Methylnaphthalene	ND	370	ug/kg	
91-57-6	2-Methylnaphthalene	ND	370	ug/kg	
85-01-8	Phenanthrene	ND	370	ug/kg	
129-00-0	Pyrene	ND	370	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	68%		35-135%
92-94-4	p-Terphenyl	85%		50-150%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b> NASP23HA2601-A	
<b>Lab Sample ID:</b> F7916-5	<b>Date Sampled:</b> 10/18/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 10/20/00
<b>Method:</b> FLORIDA-PRO	<b>Percent Solids:</b> 83.4
<b>Project:</b> NAS Pensacola	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF00110.D	1	10/25/00	ME	10/23/00	OP2205	GZF6
Run #2							

CAS No.	Compound	Result	RL	Units Q
	TPH (C8-C40)	36.8	10	mg/kg

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		40-140%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HA3302	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-4	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 91.4
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H007471.D	1	05/17/00	CJP	n/a	n/a	VH80
Run #2							

**VOA 8021 List**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	5.9	ug/kg	
75-27-4	Bromodichloromethane	ND	5.9	ug/kg	
75-25-2	Bromoform	ND	5.9	ug/kg	
108-90-7	Chlorobenzene	ND	5.9	ug/kg	
75-00-3	Chloroethane	ND	5.9	ug/kg	
67-66-3	Chloroform	ND	5.9	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	12	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.9	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.9	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.9	ug/kg	
106-93-4	1,2-Dibromoethane	ND	5.9	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.9	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.9	ug/kg	
124-48-1	Dibromochloromethane	ND	5.9	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.9	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.9	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.9	ug/kg	
541-73-1	m-Dichlorobenzene	ND	5.9	ug/kg	
95-50-1	o-Dichlorobenzene	ND	5.9	ug/kg	
106-46-7	p-Dichlorobenzene	ND	5.9	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.9	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.9	ug/kg	
100-41-4	Ethylbenzene	ND	5.9	ug/kg	
74-83-9	Methyl bromide	ND	5.9	ug/kg	
74-87-3	Methyl chloride	ND	5.9	ug/kg	
75-09-2	Methylene chloride	ND	12	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.9	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.9	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.9	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.9	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.9	ug/kg	
108-88-3	Toluene	ND	5.9	ug/kg	
79-01-6	Trichloroethylene	ND	5.9	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.9	ug/kg	
75-01-4	Vinyl chloride	ND	5.9	ug/kg	
1330-20-7	Xylene (total)	ND	18	ug/kg	

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Page 2 of 2

<b>Client Sample ID:</b> NASP23 HA3302	
<b>Lab Sample ID:</b> F6500-4	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> 91.4
<b>Project:</b> NAS Pensacola	

### VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		71-122%
2037-26-5	Toluene-D8	102%		73-128%
460-00-4	4-Bromofluorobenzene	103%		53-158%
17060-07-0	1,2-Dichloroethane-D4	110%		71-122%

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HA3302	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-4	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 91.4
<b>Method:</b> EPA 8310	
<b>Project:</b> NAS Pensacola	

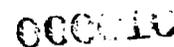
Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA001479.D	1	05/25/00	CCJ	05/23/00	OP1590	GAA64
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	360	ug/kg	
208-96-8	Acenaphthylene	ND	730	ug/kg	
120-12-7	Anthracene	ND	360	ug/kg	
56-55-3	Benzo(a)anthracene	ND	73	ug/kg	
50-32-8	Benzo(a)pyrene	ND	73	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	73	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	73	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	73	ug/kg	
218-01-9	Chrysene	ND	73	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	73	ug/kg	
206-44-0	Fluoranthene	ND	360	ug/kg	
86-73-7	Fluorene	ND	360	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	73	ug/kg	
91-20-3	Naphthalene	ND	360	ug/kg	
90-12-0	1-Methylnaphthalene	ND	360	ug/kg	
91-57-6	2-Methylnaphthalene	ND	360	ug/kg	
85-01-8	Phenanthrene	ND	360	ug/kg	
129-00-0	Pyrene	ND	360	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	70%		35-135%
92-94-4	p-Terphenyl	88%		50-150%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



# Report of Analysis

<b>Client Sample ID:</b> NASP23HA3302-A	<b>Date Sampled:</b> 10/20/00
<b>Lab Sample ID:</b> F7929-1	<b>Date Received:</b> 10/21/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.7
<b>Method:</b> FLORIDA-PRO	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP11691.D	1	11/03/00	KP	10/30/00	OP2244	GOP474
Run #2							

CAS No.	Compound	Result	RL	Units Q
	TPH (C8-C40)	7.68	9.3	mg/kg J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		40-140%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HA2901	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-5	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 88.3
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Pensacola	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H007500.D	1	05/18/00	CJP	n/a	n/a	VH80
Run #2							

**VOA 8021 List**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	5.9	ug/kg	
75-27-4	Bromodichloromethane	ND	5.9	ug/kg	
75-25-2	Bromoform	ND	5.9	ug/kg	
108-90-7	Chlorobenzene	ND	5.9	ug/kg	
75-00-3	Chloroethane	ND	5.9	ug/kg	
67-66-3	Chloroform	ND	5.9	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	12	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.9	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.9	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.9	ug/kg	
106-93-4	1,2-Dibromoethane	ND	5.9	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.9	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.9	ug/kg	
124-48-1	Dibromochloromethane	ND	5.9	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.9	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.9	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.9	ug/kg	
541-73-1	m-Dichlorobenzene	ND	5.9	ug/kg	
95-50-1	o-Dichlorobenzene	ND	5.9	ug/kg	
106-46-7	p-Dichlorobenzene	ND	5.9	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.9	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.9	ug/kg	
100-41-4	Ethylbenzene	ND	5.9	ug/kg	
74-83-9	Methyl bromide	ND	5.9	ug/kg	
74-87-3	Methyl chloride	ND	5.9	ug/kg	
75-09-2	Methylene chloride	ND	12	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.9	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.9	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.9	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.9	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.9	ug/kg	
108-88-3	Toluene	ND	5.9	ug/kg	
79-01-6	Trichloroethylene	ND	5.9	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.9	ug/kg	
75-01-4	Vinyl chloride	ND	5.9	ug/kg	
1330-20-7	Xylene (total)	ND	18	ug/kg	

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Page 2 of 2

<b>Client Sample ID:</b> NASP23 HA2901	
<b>Lab Sample ID:</b> F6500-5	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> 88.3
<b>Project:</b> NAS Pensacola	

### VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		71-122%
2037-26-5	Toluene-D8	101%		73-128%
460-00-4	4-Bromofluorobenzene	104%		53-158%
17060-07-0	1,2-Dichloroethane-D4	108%		71-122%

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



# Report of Analysis

Client Sample ID: NASP23 HA2901	Date Sampled: 05/10/00
Lab Sample ID: F6500-5	Date Received: 05/11/00
Matrix: SO - Soil	Percent Solids: 88.3
Method: EPA 8310	
Project: NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA001480.D	1	05/25/00	CCJ	05/23/00	OP1590	GAA64
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	380	ug/kg	
208-96-8	Acenaphthylene	ND	760	ug/kg	
120-12-7	Anthracene	ND	380	ug/kg	
56-55-3	Benzo(a)anthracene	ND	76	ug/kg	
50-32-8	Benzo(a)pyrene	ND	76	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	76	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	76	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	76	ug/kg	
218-01-9	Chrysene	ND	76	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	76	ug/kg	
206-44-0	Fluoranthene	ND	380	ug/kg	
86-73-7	Fluorene	ND	380	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	76	ug/kg	
91-20-3	Naphthalene	ND	380	ug/kg	
90-12-0	1-Methylnaphthalene	ND	380	ug/kg	
91-57-6	2-Methylnaphthalene	ND	380	ug/kg	
85-01-8	Phenanthrene	ND	380	ug/kg	
129-00-0	Pyrene	ND	380	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	69%		35-135%
92-94-4	p-Terphenyl	89%		50-150%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b> NASP23HA2901-A	
<b>Lab Sample ID:</b> F7916-3	<b>Date Sampled:</b> 10/18/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 10/20/00
<b>Method:</b> FLORIDA-PRO	<b>Percent Solids:</b> 89.7
<b>Project:</b> NAS Pensacola	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF00127.D	2	10/26/00	ME	10/23/00	OP2205	GZF7
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	63.6	18	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	81%		40-140%	

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



# Report of Analysis

<b>Client Sample ID:</b> NASP23 HA2201	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-6	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 87.7
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H007473.D	1	05/17/00	CJP	n/a	n/a	VH80
Run #2							

### VOA 8021 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	5.5	ug/kg	
75-27-4	Bromodichloromethane	ND	5.5	ug/kg	
75-25-2	Bromoform	ND	5.5	ug/kg	
108-90-7	Chlorobenzene	ND	5.5	ug/kg	
75-00-3	Chloroethane	ND	5.5	ug/kg	
67-66-3	Chloroform	ND	5.5	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	11	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.5	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.5	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.5	ug/kg	
106-93-4	1,2-Dibromoethane	ND	5.5	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.5	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.5	ug/kg	
124-48-1	Dibromochloromethane	ND	5.5	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.5	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.5	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.5	ug/kg	
541-73-1	m-Dichlorobenzene	ND	5.5	ug/kg	
95-50-1	o-Dichlorobenzene	ND	5.5	ug/kg	
106-46-7	p-Dichlorobenzene	ND	5.5	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.5	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.5	ug/kg	
100-41-4	Ethylbenzene	ND	5.5	ug/kg	
74-83-9	Methyl bromide	ND	5.5	ug/kg	
74-87-3	Methyl chloride	ND	5.5	ug/kg	
75-09-2	Methylene chloride	ND	11	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.5	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.5	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.5	ug/kg	
108-88-3	Toluene	ND	5.5	ug/kg	
79-01-6	Trichloroethylene	ND	5.5	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.5	ug/kg	
75-01-4	Vinyl chloride	ND	5.5	ug/kg	
1330-20-7	Xylene (total)	ND	16	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

000020



**ACCUTEST.**

**Report of Analysis**

Client Sample ID: NASP23 HA2201  
 Lab Sample ID: F6500-6  
 Matrix: SO - Soil  
 Method: SW846 8260B  
 Project: NAS Pensacola

Date Sampled: 05/10/00  
 Date Received: 05/11/00  
 Percent Solids: 87.7

**VOA 8021 List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	118%		71-122%
2037-26-5	Toluene-D8	100%		73-128%
460-00-4	4-Bromofluorobenzene	102%		53-158%
17060-07-0	1,2-Dichloroethane-D4	115%		71-122%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HA2201	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-6	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 87.7
<b>Method:</b> EPA 8310	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA001481.D	1	05/25/00	CCJ	05/23/00	OP1590	GAA64
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	380	ug/kg	
208-96-8	Acenaphthylene	ND	760	ug/kg	
120-12-7	Anthracene	ND	380	ug/kg	
56-55-3	Benzo(a)anthracene	ND	76	ug/kg	
50-32-8	Benzo(a)pyrene	ND	76	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	76	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	76	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	76	ug/kg	
218-01-9	Chrysene	ND	76	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	76	ug/kg	
206-44-0	Fluoranthene	ND	380	ug/kg	
86-73-7	Fluorene	ND	380	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	76	ug/kg	
91-20-3	Naphthalene	ND	380	ug/kg	
90-12-0	1-Methylnaphthalene	ND	380	ug/kg	
91-57-6	2-Methylnaphthalene	ND	380	ug/kg	
85-01-8	Phenanthrene	ND	380	ug/kg	
129-00-0	Pyrene	ND	380	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%		35-135%
92-94-4	p-Terphenyl	96%		50-150%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000022

# Report of Analysis

<b>Client Sample ID:</b> NASP23HA2201-A	<b>Date Sampled:</b> 10/18/00
<b>Lab Sample ID:</b> F7916-1	<b>Date Received:</b> 10/20/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 83.4
<b>Method:</b> FLORIDA-PRO	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF00126.D	2	10/26/00	ME	10/23/00	OP2205	GZF7
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	42.9	20	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	102%		40-140%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HA2002	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-7	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 85.9
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H007479.D	1	05/18/00	CJP	n/a	n/a	VH80
Run #2							

**VOA 8021 List**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	6.2	ug/kg	
75-27-4	Bromodichloromethane	ND	6.2	ug/kg	
75-25-2	Bromoform	ND	6.2	ug/kg	
108-90-7	Chlorobenzene	ND	6.2	ug/kg	
75-00-3	Chloroethane	ND	6.2	ug/kg	
67-66-3	Chloroform	ND	6.2	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	12	ug/kg	
56-23-5	Carbon tetrachloride	ND	6.2	ug/kg	
75-34-3	1,1-Dichloroethane	ND	6.2	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	6.2	ug/kg	
106-93-4	1,2-Dibromoethane	ND	6.2	ug/kg	
107-06-2	1,2-Dichloroethane	ND	6.2	ug/kg	
78-87-5	1,2-Dichloropropane	ND	6.2	ug/kg	
124-48-1	Dibromochloromethane	ND	6.2	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.2	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	6.2	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	6.2	ug/kg	
541-73-1	m-Dichlorobenzene	ND	6.2	ug/kg	
95-50-1	o-Dichlorobenzene	ND	6.2	ug/kg	
106-46-7	p-Dichlorobenzene	ND	6.2	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	6.2	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	6.2	ug/kg	
100-41-4	Ethylbenzene	ND	6.2	ug/kg	
74-83-9	Methyl bromide	ND	6.2	ug/kg	
74-87-3	Methyl chloride	ND	6.2	ug/kg	
75-09-2	Methylene chloride	ND	12	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	6.2	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	6.2	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.2	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	6.2	ug/kg	
127-18-4	Tetrachloroethylene	ND	6.2	ug/kg	
108-88-3	Toluene	ND	6.2	ug/kg	
79-01-6	Trichloroethylene	ND	6.2	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.2	ug/kg	
75-01-4	Vinyl chloride	ND	6.2	ug/kg	
1330-20-7	Xylene (total)	ND	19	ug/kg	

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



**ACCUTEST.**

**Report of Analysis**

<b>Client Sample ID:</b> NASP23 HA2002	
<b>Lab Sample ID:</b> F6500-7	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> 85.9
<b>Project:</b> NAS Pensacola	

**VOA 8021 List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		71-122 %
2037-26-5	Toluene-D8	100%		73-128 %
460-00-4	4-Bromofluorobenzene	103%		53-158 %
17060-07-0	1,2-Dichloroethane-D4	110%		71-122 %

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000024



## Report of Analysis

<b>Client Sample ID:</b> NASP23 HA2002	
<b>Lab Sample ID:</b> F6500-7	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 05/11/00
<b>Method:</b> EPA 8310	<b>Percent Solids:</b> 85.9
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA001483.D	1	05/25/00	CCI	05/23/00	OP1590	GAA64
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	390	ug/kg	
208-96-8	Acenaphthylene	ND	780	ug/kg	
120-12-7	Anthracene	ND	390	ug/kg	
56-55-3	Benzo(a)anthracene	ND	78	ug/kg	
50-32-8	Benzo(a)pyrene	ND	78	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	78	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	78	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	78	ug/kg	
218-01-9	Chrysene	ND	78	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	78	ug/kg	
206-44-0	Fluoranthene	ND	390	ug/kg	
86-73-7	Fluorene	ND	390	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	78	ug/kg	
91-20-3	Naphthalene	ND	390	ug/kg	
90-12-0	1-Methylnaphthalene	ND	390	ug/kg	
91-57-6	2-Methylnaphthalene	ND	390	ug/kg	
85-01-8	Phenanthrene	ND	390	ug/kg	
129-00-0	Pyrene	ND	390	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	68%		35-135%
92-94-4	p-Terphenyl	88%		50-150%

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	J = Indicates an estimated value B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
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J00025

# Report of Analysis

<b>Client Sample ID:</b> NASP23HA2002-A	<b>Date Sampled:</b> 10/18/00
<b>Lab Sample ID:</b> F7916-2	<b>Date Received:</b> 10/20/00
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 79.5
<b>Method:</b> FLORIDA-PRO	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF00108.D	1	10/25/00	ME	10/23/00	OP2205	GZF6
Run #2							

CAS No.	Compound	Result	RL	Units Q
	TPH (C8-C40)	ND	10	mg/kg

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		40-140%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> NASP23 RB 01	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-8	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8021B	
<b>Project:</b> NAS Pensacola	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	QR002786.D	1	05/18/00	JG	n/a	n/a	GQR76

**VOA 8021 List**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



# Report of Analysis

<b>Client Sample ID:</b> NASP23 RB 01	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-8	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8021B	
<b>Project:</b> NAS Pensacola	

### VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
75-29-6	2-Chloropropane	87%		75-125%
352-33-0	1-Chloro-4-fluorobenzene	110%		65-125%
352-33-0	1-Chloro-4-fluorobenzene	113%		65-125%
98-08-8	aaa-Trifluorotoluene	104%		72-125%

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

000027



## Report of Analysis

<b>Client Sample ID:</b> NASP23 RB 01	
<b>Lab Sample ID:</b> F6500-8	<b>Date Sampled:</b> 05/10/00
<b>Matrix:</b> AQ - Field Blank Water	<b>Date Received:</b> 05/11/00
<b>Method:</b> EPA 8310	<b>Percent Solids:</b> n/a
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA001308.D	1	05/15/00	CCJ	05/13/00	OP1550	GAA57
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	2.2	ug/l	
208-96-8	Acenaphthylene	ND	2.2	ug/l	
120-12-7	Anthracene	ND	2.2	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	ug/l	
218-01-9	Chrysene	ND	0.22	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	ug/l	
206-44-0	Fluoranthene	ND	2.2	ug/l	
86-73-7	Fluorene	ND	2.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	ND	2.2	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	ug/l	
85-01-8	Phenanthrene	ND	2.2	ug/l	
129-00-0	Pyrene	ND	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84%		45-130%
92-94-4	p-Terphenyl	95%		50-150%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000028



# Report of Analysis

<b>Client Sample ID:</b> NASP23 RB 01	<b>Date Sampled:</b> 05/10/00
<b>Lab Sample ID:</b> F6500-8	<b>Date Received:</b> 05/11/00
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> FLORIDA-PRO	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP08270.D	1	05/16/00	ME	05/13/00	OP1551	GOP376
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	ND	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	95%		40-140%

ND = Not detected  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b> NASP23RB01-A	<b>Date Sampled:</b> 10/19/00
<b>Lab Sample ID:</b> F7916-6	<b>Date Received:</b> 10/20/00
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> FLORIDA-PRO	
<b>Project:</b> NAS Pensacola	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	ZF00140.D	1	10/27/00	ME	10/25/00	OP2219	GZF7
Run #2							

CAS No.	Compound	Result	RL	Units Q
	TPH (C8-C40)	ND	0.25	mg/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%		40-140%

(a) Sample not preserved, adjusted to pH < 2 prior to extraction.

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



**TETRA TECH NUS, INC.**

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December 11, 2000

Joe Fugitt, P.G.

Remedial Project Manager

Technical Review/Federal Facilities

Florida Department of Environmental Protection

2600 Blair Stone Road

Tallahassee, Florida 32399-2400

RE: Site Assessment Report Addendum  
Underground Storage Tank Site 23  
U.S. Naval Air Station Pensacola  
Pensacola, Florida  
FDEP #179203973

Mr. Fugitt:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit the Site Assessment Report (SAR) Addendum for Underground Storage Tank Site 23 located at Naval Air Station Pensacola, Pensacola, Florida. This SAR Addendum has been prepared for the U.S. Navy Southern Division Naval Facilities Engineering Command under Contract Tank Order 112, for the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888.

The purpose of investigation was to address comments on the SAR from Florida Department of Environmental Protection (FDEP) dated March 31, 1998.

**PREVIOUS INVESTIGATIONS**

Investigations conducted at Site 23 prior to the SAR included an Initial Assessment Study (NEESA, 1983), a Verification Study (G&M, 1984), a Contamination Assessment (E&E, 1991), and the abandonment of three AVGAS Underground Storage Tanks, USTs 116, 119, 122, located within Site 23 (SOUTHNAVFACENCOM, 1995).